Studiocode

User Manual

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Hot Tips

Part 1 - An Introduction

Welcome to Studiocode - The Ultimate in Performance Evaluation

This manual will help you find your way around Studiocode. It includes descriptions of the features and functions you will use and it assumes you have already seen a demonstration or been trained in using Studiocode and therefore have some knowledge base of how it works.
If you are unfamiliar with the Studiocode suite of products, or require more information, please contact the Studiocode Business Group by email : support@studiocodegroup.com.

Overview of Studiocode

Using Studiocode is easy – just follow some simple steps and you'll be on your way.

Here's a quick guide how the Studiocode process works. You'll find step by step instructions in the following pages.

1. Click on the Studiocode icon  in the dock or on your desktop.
2. Create a new Code Window. This is the window where you can design your analysis platform by creating and editing code buttons to categorize events in the video.
3. Decide which events in the video you want to categorize (code) for future analysis.
4. Create and name Code Buttons for all the events. For example: you may want to code a particular person, a particular action, or each time a specific event occurs in the video. Each button will code specific instances for the actions in the timeline.
5. Capture (record) the movie to the hard drive and at the same time code the information you need using the buttons in the code window.
6. You now have the movie captured and the information about the movie coded in a timeline. The movie and the timeline are linked together and are a chronological record of the instances you have coded.
7. Now the movie is captured you can also transcribe the movie directly from within Studio code. The transcription window will provide you with the ability to populate the timeline with instances based on captured events.
8. You can now analyze performance according to the information on the timeline. If you want to change the information, add to it or delete from it, it's easy. Studiocode is completely flexible to fit your needs.

Welcome to Studiocode – You'll wonder how you ever did without it!

Studiocode Set-up Requirements

The minimum recommended computer requirements for Studiocode are:

- Apple Macintosh with a 2.2 Ghz Intel Core Duo or faster
- Mac OS X 10.6 (Snow Leopard) or greater
- 4 GB RAM
- Your Hard Disk Drive storage requirements @ 13 GB per hour of video
- Built-in Firewire 800 or greater
- QuickTime 7 (or later)

We strongly recommend adding more RAM and hard disk space to any computer using Studiocode

Current Version of Studiocode

The current version which this manual relates to is Studiocode Version 4.0.

To check which version of Studiocode you are operating, click on "Studiocode" in the Main Menu. The first item in the drop down menu "About Studiocode n.nn.nn" displays the Studiocode version you have.

Registration of Studiocode

Before You Start Using Studiocode

Studiocode will only run if you have either inserted a dongle (software protection key) or registered an online code over the internet.

Make sure you close all other applications while you're using Studiocode.

When you launch Studiocode for the first time, you will see the following dialogue box.

Choose online to register online or dongle to use the dongle registration method.

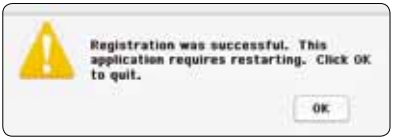
Online Registration

If you select to register online you will then be presented with a registration process dialogue box. You must have your computer connected to the internet before you do this.

The registration code that you received with the software should be put into the registration code box of the window. If you input the code correctly you will see a red tick at the end of the text box.

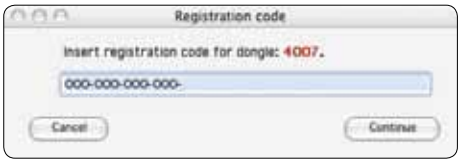
Clicking will Register online connect your computer to the Sportstec internet registration server and carry out the registration process.

Successful registration is indicated by:



Dongle Registration

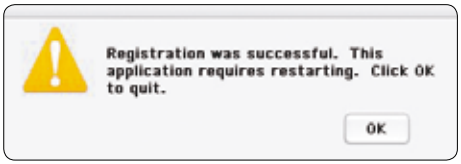
Please connect your dongle to a USB port on your computer. Select dongle registration and you will then be presented with a registration process dialogue box.



The registration code that you received with the software should be put into the registration code line.

Clicking Continue will complete the registration process.

Successful registration is indicated by:



Change the Registration Mode

1. Select the Studiocode application menu on the top left of the main menu bar, then "Change Registration Code"...
2. If you inadvertently select the incorrect registration method, you can change this during the launching process by holding down the ESC key when clicking on the icon.

Choosing Language

There are two options that can be used to run Studiocode on a non-English operating system. Method 1 is probably the easiest to implement and allows you to temporarily switch languages (see next page).

If this temporary method is not satisfactory, the second method is more permanent. This more permanent method would mean that you could have specific local language or English versions. To run in English, you would start the English version and it would use English irrespective of the operating system.

Please note: We will use Japanese examples to outline the steps required to choose your language options.

There are two ways to do this:

1

For Example: Running Studiocode in English on a Japanese Operating System.

1. Quit Studiocode if it is running.
2. Go to System Preferences.
3. Choose International in the personal settings area.
4. Click the language tab. Your preferences should look like this if you are running a Japanese operating system.

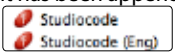
5. Drag English to the top position.
6. Start Studiocode. It should start in English.
7. When the session is finished, the user should reset the order of languages found prior to changing them in the steps described above.

Please note: This order can affect the operating system if the user logs out or reboots. For example, if the order in step 5 was used, and the user logged out and logged in again, or rebooted the system, the operating system would run in English.

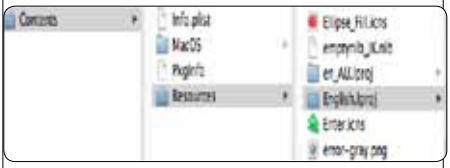
2

Forcing Studiocode to run in English irrespective of the Operating System (OS).

1. Make a copy of Studiocode and rename it to distinguish it from the original. In this example, it has been appended with '(Eng)'.



2. Hold down the control key and click on the duplicated version, and select 'Show Package Contents'.
3. Click the list view so that it is easier to see the contents.
4. Expand the view until you see something like this
5. The folders ending in '.lproj' define the language preferences. You can see that this version of Studiocode is set up to



handle 5 different languages. (Australian English.lproj is used for testing.) Studiocode uses this list to try to match the language used in the international language preferences.

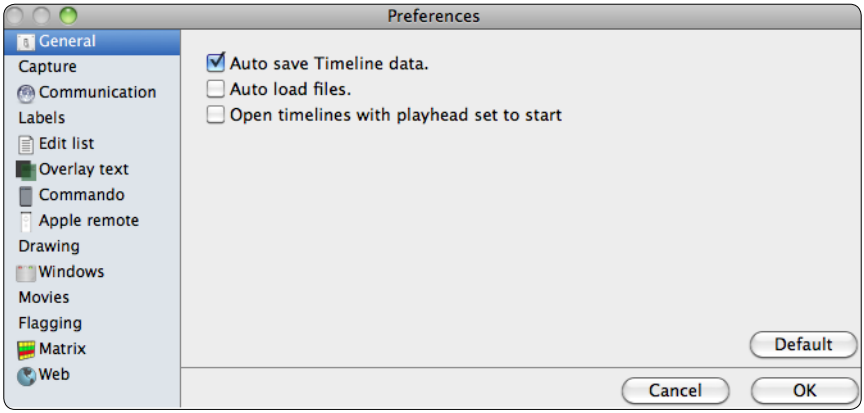
If all but the 'English.lproj' folder is renamed (or removed) then Studiocode should boot in English irrespective of the operating system. Our recommendation is that you place an 'x' in front of the languages that you don't want so that the operating system does not recognize them.

Studiocode Preferences

The Preferences windows provides you with a series of settings for Studiocode.

Here's an index of the function settings with an explanation of the specific setting options.

General :



When Auto save Timeline data is selected, any opened timeline will be saved automatically as the timeline is updated.

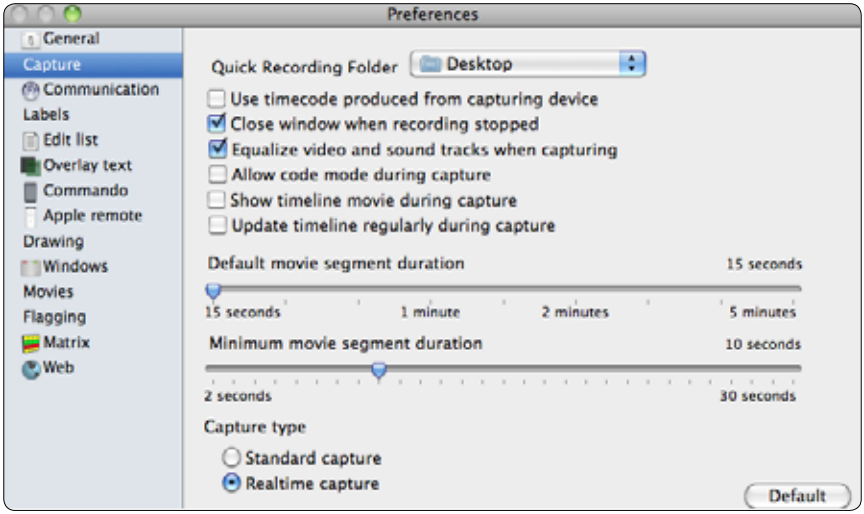
By selecting the Auto load files option, any files that are open when Studiocode is quit, they will be reopened on the next launch of Studiocode. We recommend doing this on match day. Turn this option on, open all the windows that will be used such as code windows, matrices and statistical windows, then quit Studiocode. The next time you launch, they open again in the last used positions.

Open timelines with playhead set start moves the playhead to the beginning of the movie if the timeline is not in the opened recent list. If the timeline is in the open recent list, then the last playhead location is set.

Capture

- **Quick Recording Folder** - This is the default folder where the capture package will be saved automatically when the Quickstart capture feature is used
- **Use timecode produced from capturing device** - Timecode generated from the capture device will be saved in the timeline timecode track.
- **Close window when recording stopped** - When this option is selected, the capture window will be closed when capture has been ended.
- **Equalize video and sound tracks when capturing** - This option is used when recording MPEG4 video in the Standard capture window. It helps with video and audio sycnhronization
- **Allow code mode during capture** - When selected, code mode can be used in the code window to code instances at the location of the playhead in the timeline during capture. Note: Remember to switch back to capture mode in the code window to code instances using the capture movie window not the timeline movie window.
- **Show timeline movie during capture** - When selected, the timeline movie window will appear

along with the capture window. This is neccessary when using code mode.



- **Update timeline regularly during capture** - As a means to help reduce graphics processing, this option is turned off by default. When it is enabled, the timeline window updates more quickly and travel along displaying a zoomed in section of the timeline. Enabling this option, makes constant playback in delay possible.
- **Default movie segment duration** - During capture, the incoming video is captured in small parts. This allows the application to access the files directly for instance movie creation, timeline share, etc. This preference sets the default duration for each movie part. It is recommended that longer movie durations are used except when using timeline share.
- **Minimum movie segment duration** - According to this setting a movie part will never be shorter in duration than this time. The smaller the movie parts are, the more file referencing must take place and this slows things down tremendously. This is particularly important for timeline sharing as it is readied for access by the timeline share process as quickly as possible. When a code button has ended, it signals the capture window to end the current movie part that is being captured in order to allow access to the latest captured video part in the timeline. So, if the setting if a code button was ended after 5 seconds of a movie part starting and this setting is set to 1 minute, it will take another 55 seconds for the movie part to be ended and ready for viewing in the timeline. We recommend using 30 seconds for default duration and 15 seconds for minimum duration settings when using timeline share. Otherwise, use the default settings.

Note: Choosing Never and None for the above 2 options will create one movie part for the entire duration of the capture session.

Capture type

- **Standard capture** - If this option is selected, the standard capture window is used through out the application. This is there for legacy workflow purposes only. It is not recommended to use this window unless you require specific MPEG-4 or other codec compression settings during capture. It does have all the features of the Realtime capture window.

- **Realtime capture** - The Realtime capture option is the default selection, selecting this option will cause the Realtime capture window to be used through out the program. It is the recommended option.

Communication

Refer to pages 78 - 84 for detailed instructions for Remote Communications settings

- **Name / Description** - This sets the computer name that will be displayed in the Remote Communications window. Note: Avoid using puncuation characters in the name. Keep the names simple.
- **Change Password** - This sets the password that allows others to access remote communication features over the network.
- **Use same password as default for autoconnection to clients** - This allows the settings of one password for all networked machines. It can greatly simplify the connection process.
- **Allow servers to Start/Stop capture** - This option will allow or block start and stop capture commands.
- **Allow servers to Pause/Resume capturing** - This option will allow or block pause and resume capture commands.
- **Allow servers to update capturing** - This option will allow or block capture update commands
- **Do not show errors as they occur** - When selected, this option will supress the error log from appearing if an error is encountered.

Advanced Options

- **Do not connect with clients** - This option will stop a computer connecting to any clients in the Remote communications window. This blocks commands from being sent from the computer to other clients.
- **Stop servers connecting to this computer** - This option will block servers from accessing the computer.
- **Disable automatic connection to clients** - When selected, the autoconnection process will not take place in the Remote Communications window. The connection process will have to be undertaken manually.
- **Stop / Disable all communication** - This turns on or off all communications. It is recommended that remote communications is turned off when not using the feature.

Labels

Show Groups
Copy all Labels when transfering instances

Edit List

The edit list preference enables or disables live edit list export during capture and coding sessions. Either format can be exported singularly or simulatenously. The file formats are described in length in the Export section of this manual.

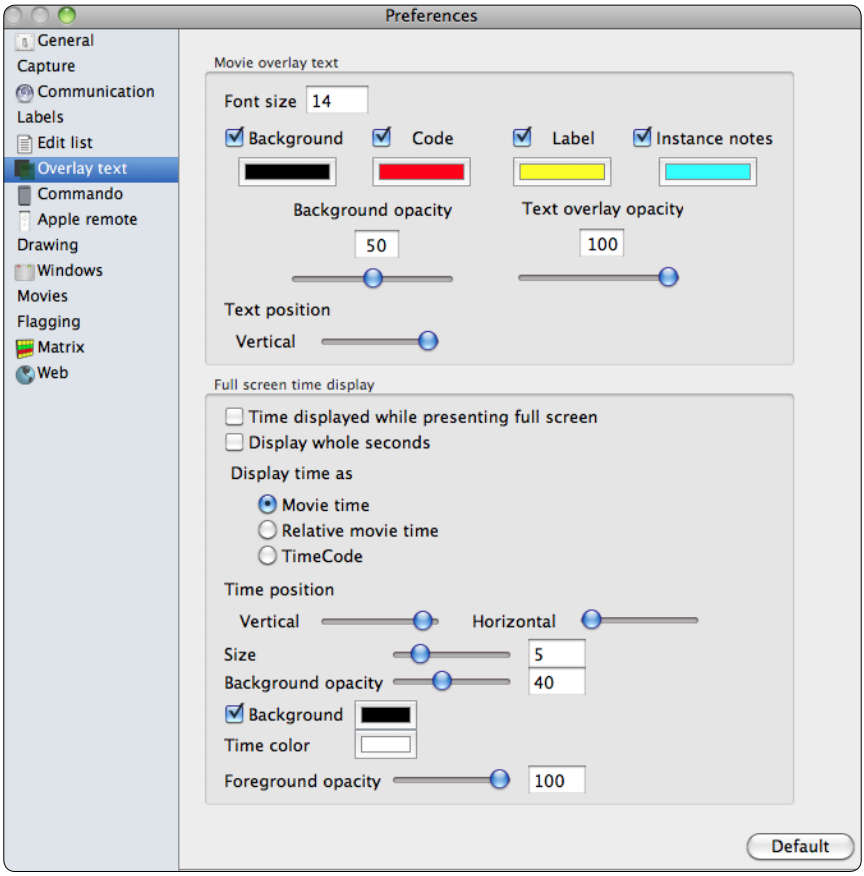
Choose the target file directory by clicking the popup menu below the Directory for timeline text. The default is the capture package and generally this option should always be used. Only change this setting if these data files will be used in an alternate workflow like for updating a web site or something. We recommend always using the XML format.

Note: Another added benefit of enabling these options, is they provide another form of backup for the timeline data.

Update timeline share edit list every X seconds - Use this option to increase or decrease the frequency of which the edit list is updated. This applies to both exports and helps with timing when scripting is used to pick up the data from the file. NOTE: Be careful not to set this number too low, in some situations trying to update a file too quickly will actually take the process longer overall and can also interrupt other processes.

Overlay Text

Movie Overlay Text



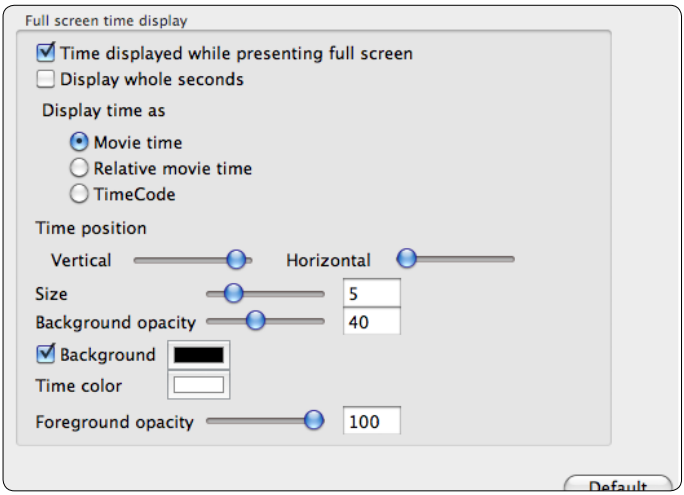
The overlay text preferences can be set live, so we recommend opening a movie with overlay text, then make changes to the preferences. This will save some time getting the settings perfect.
Overlay text font size is set by inputting the desired font size in the text box.
Showing or hiding components of overlay text is done by ticking the boxes next to each component.

Changing colors of overlay text components is done by clicking on the color well below the component and choosing a color.

Background and Text overlay opacity of the overlay text can be set by dragging the slider or manually inputting an opacity value. The lower the value, the more invisible the background will be. The background opacity sets the opacity for the background of the text that is displayed where the text overlay opacity sets the opacity for the overall text display of all components.

Vertical text position is changed by moving the slider. The text can be moved to the absolute top and bottom boundaries of the movie frame.

Full Screen Time Display



When "Time displayed while presenting full screen" is selected, a time counter will be shown in a floating window over the movie. The floating window position can be changed by clicking and dragging on the window.

Display whole seconds removes the hundredths place from the counter. This makes the window less wide hiding the higher precision data.

There are 3 time display options:
1. Movie time displays the actual movie time from 00:00:00.00 to its end as it relates to its total play length.
2. Relative movie time displays the time for which the instances are found in a timeline. This is convenient for finding its position in the timeline. When this is selected, the time display is not continuous, it can appear to jump from 01:03:15 to 00:03:25. This depends on how the movie was created.
3. TimeCode displays the timecode track information which is time of day for when the movie was captured or for what time the movie timecode was set.
The position can be set manually set by using the vertical and horizontal sliders, however it is easier

to present a movie full screen and use the mouse to set the position.
The size of the time text can be changed using the slider or manually inputted.
The background opacity can be set using the slider or manually inputted.
The background can be switched on or off by ticking the box.
The background color can be set by clicking on the color well and selecting a color.
The foreground opacity slider sets the overall opacity for the time display. This is set by dragging the slider or manually inputted a value.

Commando

This preference is used to set up the Commando Remote options. Click on the different drop down menus to set the options. See the Commando remote description in this manual for more details.

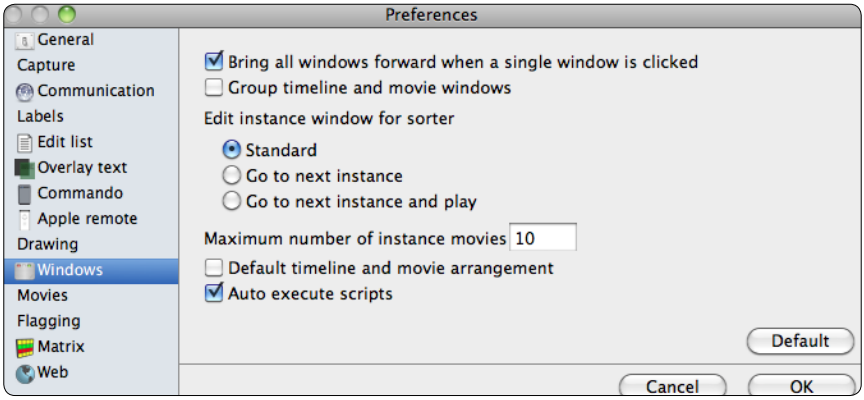
Apple Remote

This preference is used to set up the Apple Remote options. Click on the different drop down menus to set the options. See the Apple Remote description in this manual for more details.

Drawing

- Hide drawings when playing movie at full screen- When selected, this option will hide drawings on an instance when the instance movie is presented in full screen.
- Delete full screen drawings when movie starts - This option only works in full screen, when selected, drawings that have been drawn on the movie while the movie is paused will be deleted when the movie begins to play.
- Pen size - This sets the pen size for the drawing pencil cursor.

Windows



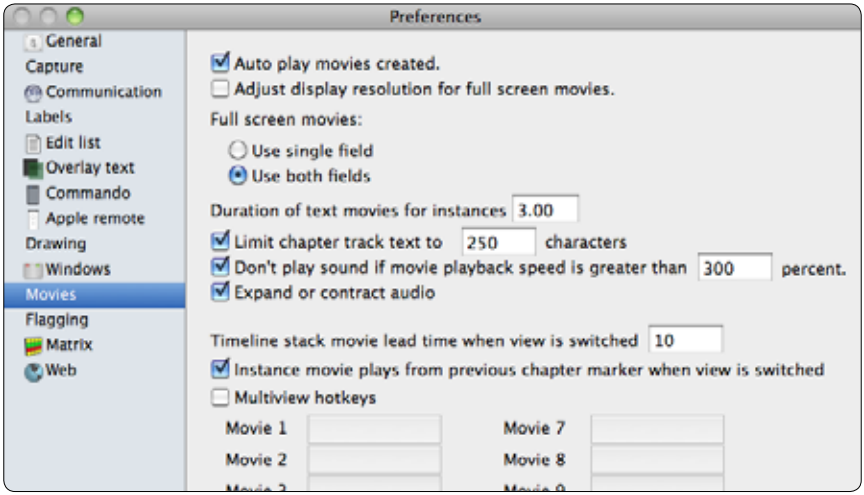
There are times when a lot of windows from various applications might be open at the same time, selecting Bring all windows forward when a single window is clicked will make sure that all the open Studiocode windows come to the front and will not be obscured by another application's window.
To make moving timelines and their movies around a little easier, select the Group timeline and

movie windows option. The timeline and its movie window will be locked together and can be dragged around together as one. This works great if the Default timeline and movie arrangement option is turned on also. To move them independently, hold down SHIFT and click and drag on the window to reposition it.

The Edit instance window for sorter options are:
1. Standard. While this option is selected, the edit instance movie will play through once unless movie looping is turned on and remain in the current row of the sorter.
2. Go to next instance. While this option is selected, the edit instance movie will play through to the end, then the sorter window will drop down a row from the current selected row and the movie for the new row will be paused at the start.
3. Go to next instance and play. While this option is selected, the edit instance movie will play through to the end, then the sorter window will drop down a row from the current selected row and the movie for the new row will be start to play automatically.
Maximum number of instance movies value set how many instance movies can be open at one time. Once the maximum is reached the oldest movie made will be closed to allow the new one to be created.

While working with Studiocode, windows get pushed all over the place especially timelines, to help create some consistency in where a timeline will open select Default timeline and movie arrangement. This option sets the timeline movie in the upper left corner of the screen and does a best effort to maximize the timeline window to display the most data that it can on the screen.
When using the statistical live during coding, it is very desirable to have this option selected. As changes in the timeline are made, this triggers the statistical window to automatically execute. While building and testing a statistical window having this option turned on can be bothersome, so we recommend turning it off for those occasions. This will save a little time by not throwing up errors every time a change is made.

Movies



- **Auto play movies created** - When an instance is created from any source, it will open and begin to paly.
- **Adjust resolution for full screen movies** - This option reduces the screen resolution when presenting movies full screen. It can help smooth out playback when viewing movies full screen, particularly on older computers. This is helpful when presenting H.264 compressed movies. Note: the screen go through a black transition period when a movie is presented, this is normal.

Full screen movies

- **Use single field** - Only one field is shown of an interlaced movie. This helps clean up jagged edges when the video is paused.
- **Use both fields** - Both fields are shown of an interlaced movie. Jagged edges maybe present when presenting full screen on the computer screen.
- **Duration of text movies for instances** - This sets the duration of static text movies and titles for instance movies created from the timeline, matrix, and movie organizer.
- **Limit chapter track text to "nnnn" characters** - When there are a lot of labels for an instance, the instance movie cannot display them in the chapter menu of the instance movie window. the chapter menu is removed in this situation. To retain the chapter menu, set an amount of text to be displayed in this setting, only that amount of characters will be displayed and the rest will be truncated. This allows enough room for the timeline in the instance movie to be displayed and used properly.
- **Don't play sound if movie playback speed is greater than "nnn" percent** - Setting this option helps using the playback speed slider in the main toolbar. In some cases, the default playback speed may be greatly increased to allow for faster coding. Cutting out the sound playback makes this process smoother.
- **Expand or contract audio** - Set this option to automatically adjust the length of the audio track to match the video track. This can help with audio video synchronization.
- **Timeline stack movie lead time when view is switched** - The default for this setting is 10, this means when one angle of the stack is being played and the view is switched, th playhead will jump back 10 seconds, so the new view can be easily replayed without rewinding. This jump only occurs when the movie is playing. If the movie is paused, the angles will switch without the playhead moving.
- **Instance movie plays from previous chapter marker when view is switched** - Like the timeline stack movie, this causes the playhead to jump back to the start of the instance or chapter. This makes replaying another angle easier because the movie does not have to be rewound.
- **Multiview hotkeys** - Turn on the multiview hotkeys by selecting the check box, then click on the boxes next to Movie 1, Movie 2, etc. Choose a hotkey by pressing a key on the keyboard. Movie 1 will be the top right angle, Movie 2 will be the next one to the right and so on. If there are 4 or more angles, the numbering will flow from right to left and down. Note: These hotkeys will override any other hotkeys in the application, so it is recommended that code windows are checked for clashing hotkeys.

Matrix

- **Remove unused movies when web reporting** - When the matrix is exporting live, many movies are created because the cells are constantly updating during the coding process. Enabling this option will clean these movies up during the process. This should remain enabled in most situations, there are a few workflows where the extra movies are desired thus the option.
- **Ignore groups for new matrix** - When selected, this option will cause the matrix not to show the label groups for the labels.
- **Row totals are all instances in timeline row** - Select this option to display the row totals as number of instances as opposed to displaying the total number of labels.
- **New matrix columns sorted by group** - By turning this option on, when a matrix is made from the timeline or code window, the labels will be sorted by their respective groups.
-

Web

- **Users public website folder** - This option sets up the default web sharing folder for a user. It is rarely necessary to change this option.
- **Computers public website folder** - This option sets up the default web sharing folder for the system. It is rarely necessary to change this option.

Studiocode Terms

Many terms in this manual have specific meanings in Studiocode. Here's a brief explanation of the most common terms.

Capture
To record a movie to a file on the hard disk drive.

Code
A category for information in your movie. When you want to mark a piece of action from a movie for later reference/analysis you code that as an event with a code button.

Code Button
Code buttons are used to define an event by its name and time when it occurred in a movie.

Code Matrix
The code matrix is a two dimensional grid representation of code rows and text labels in a timeline.

Code Window
The window for creating and using code buttons to categorize events in a timeline.

Database
A database is a timeline created by exporting selected instances from one or multiple timelines. The database process only exports the specified code and movie data. This process removes all the unwanted code and movie data and allows you to compile information in one file.

Instance
An instance is a coded segment of a movie. An instance becomes part of a timeline for that movie (also see Code).

Label
A Label is text inserted into an instance to describe an event or a consequence of an event marked by a code button

Lag Time
Lag time presets a specific length of time to an instance when it is being coded so that it creates an instance of a fixed length. Lag time creates a button that only needs to be pressed once. The beginning of the instance is marked when the button is pressed down and the end is marked when the lag time runs out.

Lead Time
Lead time automatically adds a preset time to the beginning of an instance when it is being coded. When you click on the code button to code the instance Studiocode marks the timeline by the amount of the Lead Time ahead of when the Code button is clicked.

Movie
The performance you are using as the source of your information.

Package
A special type of folder that contains timeline and movie data.

Timeline
The window that displays a timeline showing each instance of all code buttons chronologically recorded.

Title Button
A title button is an inactive rectangle used to title a set of buttons. Title buttons can also be graphics in the window that do not perform any actions.

The Studiocode Main Tool Bar

	Open file	Opens saved files.
	Undo	Removes the last action.
	Save	Saves the file.
	Capture	Opens the capture movie window.
	Volume	Selects the speaker volume level.
	Playback rate control	Temporarily sets the playback speed for all movies.
	Loop mode	Sets the playback mode for play once or repeat.
	Fast forward/Fast rewind	Steps forward or backwards 1 second.
	Play/Pause	Plays or pauses the movie.
	Forward/Back	Steps forward or backwards 1 frame at a time.
	Present Movie	Plays the movie full screen.
	Drawing Tool Bar	Opens the drawing tool bar.
	Export to DV Device	Export DV format movie to external DV device.

Keyboard Shortcuts

MENU ITEM -FUNCTION	
COMMAND	⌘
CONTROL	^
OPTION	⌥
SHIFT	⇧
LEFT RIGHT UP DOWN ARROWS	← → ↑ ↓
PAGE UP PAGE DOWN	fn↑ fn↓
DELETE	⌫
CLICK	
FILE	
Open	⌘O
Open all timelines in folder	⌥⌘O
Save	⌘S
Save as	⇧⌘S
Print	⌘P
Quit	⌘Q
Combine timeline windows	⌘L
EDIT	
Undo	⌘Z
Cut	⌘X
Copy	⌘C
Paste	⌘V
Select all	⌘A
Cut movie segment	^⌘X
Copy movie segment	^⌘C
Paste movie segment	^⌘V
Delete movie segment	^⌘⌫

Instance edit	^E
Instance trim	^T
Nudge all instances left	⇧⌘L
Nudge all instances right	⇧⌘R
Moves all instances in the timeline	Hold down ^⌘Z plus & drag
Moves all instances to the right of the playhead in the timeline	Hold down ^⌘X plus & drag
Removes unused instance time to the right of the playhead	^⇧⌘L
Nudge all instances on the right of the playhead to the right in the timeline	^⇧⌘R
Find and replace	⌥⌘F
Nudge sound track left	^⌥⌘L
Nudge sound track right	^⌥⌘R
Contract sound track	⌥⌘L
Expand sound track	⌥⌘R
Paste Instances in Movie Organizer	⌥⌘V
Delete Drawing Items	^⌘⌫
Edit Instance Labels	⌘E
Show Labels Tree	^⌥E
Find	⌘F
Find Text in Transcription Window	^F
WINDOWS	
Present movie (Full screen)	⌘M
Make movie	⌥⌘M
Full screen coding	⇧⌘F
Play backwards	^J
Stop movie	^K
Play movie	^L
Stack instance movies	⌘Y

Overlay movies	⌥⌘Y
Reduce movie size	⌘< (Use ⇧, for <)
Increase movie size	⌘> (Use ⇧, for >)
Reduce transparency	^⌥9
Increase transparency	^⌥0
Close all instance movies	⌘I
Close window	⌘W
Hide / Show drawing tool bar	⇧⌥D
Quit full screen presentation	ESC
Measurement > Line	⇧⌘1
Measurement > Angle	⇧⌘2

ROWS	
Add row	⌘N
CAPTURE	
Open capture window	⌘R
Quickstart capture	^⌘R
Stop capture	⌘. (Period / Full stop)
Pause / Resume capture	⌘K
MOVIE WINDOW & PLAYBACK	
Play / Stop	↑ ↓
Play / Stop	Space Bar
Slow motion forward play	Hold down →
Smooth rewind play	Hold down ←
Fast forward play (1/10 sec steps)	⌘→
Fast rewind play (1/10 sec steps)	⌘←
Faster forward play (1/4 sec steps)	⇧→
Faster rewind play (1/4 sec steps)	⇧←
Fastest forward play (1 sec steps)	⌥→

Fastest rewind play (1 sec steps)	⌥←
Turbo forward play (10 sec steps)	^→
Turbo rewind play (10 sec steps)	^←
Play stack movie angle full screen	^⌥⌘ on movie angle
Move movie angle in stack	⌘ & Drag
Select segment of instance movie	⇧ & Drag instance movie playhead
TIMELINE WINDOW	
Create an instance in selected row	⌥⌘ & Drag instance movie playhead
Extend or shorten instance	⌥⌘ & Drag on leading or trailing edge of instance
Duplicate instance	⌥ & Drag from instance to other row

CODE WINDOW	
Duplicate button	⌘ & Drag from a button
Move selected button	← → ↑ ↓
Edit button window, apply button property to selected buttons	^ on button property text
Move group of buttons	⌘ on selected buttons
Move selected button to top layer	^↑
Move selected button to bottom layer	^↓
Move selected button up 1 layer	^→
Move selected button down 1 layer	^←
Toggle Code/Edit mode	⌘↑ or ⌘↓
Stop all code buttons	TAB
Deactivate last code button pressed	ESC
GENERAL	
Preferences	⌘,
Hide Studiocode	⌘H

Hide Others	⌥⌘H
MAC OS X	
Screen snap shot to file	⇧⌘3
Selection snap shot to file	⇧^⌘3
Screen snap shot to memory	⇧⌘4 ⌘V to paste to another window
Selection snap shot to memory	⇧^⌘4 ⌘V to paste to another window
Enable display zoom	⌘⌥8
Zoom out display	⌘⌥-
Zoom in display	⌘⌥=

Part 2 - Code

Launch Studiocode

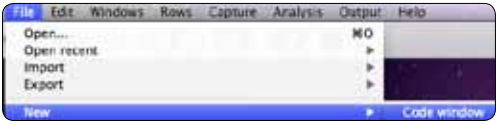
Click on the icon in the Dock or double click on the Studiocode icon on your desktop or in the Applications folder.

The Code Window

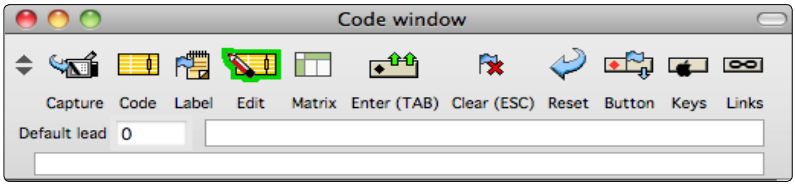
The code window is the starting point for coding your movies. It will contain all the event categories (buttons) you want to analyze. Code buttons are used to categorize and mark the time of events in your movie. These events become your own personal study of performance-specific information. You can save time by coding events as you capture your movie. Then if you want to change, add or delete information, it's easy to go back and do so later.

Create a New Code Window

1. Choose File > New > Code window from the main menu bar.



The Code Window Toolbar



The Code Window Toolbar contains icons which have 4 distinct functions :

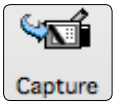
1. Coding Functions - (Button ; Enter ; Clear ; Reset)
2. Operating Mode Functions - (Edit ; Code ; Capture ; Label)
3. Display Functions - (Keys ; Links ; Transparency)
4. Analysis - (Matrix)

Note: In Window Operating Modes, (2. above,) you will notice a colored halo around the icons in the tool bar to indicate which mode is active.
A convenient shortcut is OPTION+UP ARROW or OPTION+DOWN ARROW to change modes.

Code Window Transparency

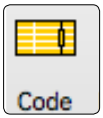
This is used mainly while coding in full screen. To increase the transparency of the code window, (make the code window MORE transparent - less distinct,) click on the Up arrow in the top left hand corner of the window next to the capture button. To decrease the transparency of the code window, click on the Down arrow.

Capture



This will open the capture window so that you can code in real-time.

Code



Use Code mode to code the timeline with your events at any time.

Label

Use Label mode to code labels into instances in an existing timeline. ie. after the capture has taken place.

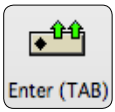
Edit

Use Edit mode to build your Code Window by creating buttons and also to change button properties, location, and size. In Edit mode you also link buttons to make your coding more efficient.

Matrix

With a Timeline open, clicking this button in the Code Window allows you to quickly display a Matrix of selected buttons and Labels.

Enter



Pressing the Enter button while engaged in Code or Capture mode will end all active code buttons. The short cut for this is the TAB key. This is a very convenient feature while live coding especially when multiple code buttons are active.

Clear

Pressing the Clear button while engaged in Code or Capture mode will depress the last code button pressed down, stopping the marking of an instance. The short cut for this is the ESC key. This is mostly used when accidently hitting a code button during live coding.

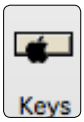
Reset

Pressing the Reset button while engaged in Code or Capture mode will remove the last instance that was ended. This can also be achieved using keystrokes COMMAND Z.

Button

Clicking and dragging from this button into the canvas below will create a new code button. Holding down OPTION will create a new text label button.

Keys



Pressing the keys button will reveal all the hotkeys that are set for each button in the Code window when "Show keys" option is selected for the button and the hotkeys are not visible.

Links

Pressing the links button will reveal all hidden links between buttons. By right clicking on this button, you can choose to show or hide all links in the code window. Hiding all the links will tidy up the appearance of the code window.

Code Button History

To see a record of the buttons you've used, take a look at the history line. The most recent button activation is shown to the right of the line. A triangle pointing down indicates a code button which has been activated. A triangle pointing up indicates that code button having been turned off.

Button Information Bar

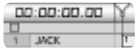
The Button Information Bar is located directly below the Code Button History line. When you hover the cursor over a button, it's name will be displayed in this bar.

Studiocode Button Types

Code Button

Code buttons are identified with a diamond symbol.

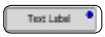
- Name a code button to define an event which will become an instance in the timeline. For example, you may name a Code button "Direction" to mark every time a direction is given by a participant.
- When you have captured a movie and used a code button, the button creates a row in the left column of the timeline identified by the name assigned to the button.



- The code button identifier symbol, a diamond, will be either red or green. A red diamond means it has a toggle action that must be clicked on to start coding an instance and click on it again to stop coding. A green diamond means the button has a lag time and will stop coding at the predefined lag time after it has been clicked.

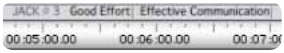
Text Label Button

Text label buttons are identified with a circle symbol.



Name a text label button with a description or a consequence of an event marked by a code button. This label is inserted into the last opened coded instance on the timeline or inserted into all active code buttons. For example, you may name a text label button "Good Communication" for a "Student" code button.

- Labels in an instance can be quickly viewed by mousing over an instance in the timeline. The text labels will appear above the playhead strip.



Title Button

Title Buttons are identified with a yellow square.

A title button does not perform any coding action, it is used to put headings, comments or graphics within the code window. Clicking on a title button will have no coding effect within the timeline, ie. no instance is marked on the timeline, nor is there any labeling function when it is clicked.

Graphic Button

An image can be copied and pasted into the code window. It is called a graphic button. By default, a graphic button will be created as a code button. This may be changed to a Text Label or Title button. (Refer "Change a Button Function") The identifier of a graphic button appears in the center of the image. Graphic buttons cannot be resized in the code window. Graphic or title buttons can be replaced by other graphics using the right click drop down menu on the button and selecting copy or paste.

Edit Mode

Create/Add New Button

To create a code button, click and drag the code button icon  in the tool bar to the blank area below.

Create or Add a New Label Button

To create or add a Label Button to the Code Window, hold down the Option key and click and drag the Code Button icon from the Toolbar to the Code Window.

Use A Picture As A Graphic Button

Any image can be used as a button in the code window. COMMAND+ CNTRL +SHIFT+3 to copy an image to the clipboard and then COMMAND+V to paste the image into the code window.

Resize a Button

1 Click and drag on any side or corner of the button.
2. Drag the button to the desired size.

Note: Graphical buttons cannot be resized. Make them the required size in your graphics program of choice, then copy and paste them into the window.

Delete a Button

Click on the button and press DELETE on the keyboard.

Move a Button

Click on the button and drag it to the required location in the window or use the arrow keys to move more precisely.

Note: When using the arrow keys, be sure to close the edit button properties window.

Move a Group of Buttons

1. Press the COMMAND key and select the buttons you want to move, or click and drag over the group using the lasso bounding box to make the selections.
2. Click and drag the buttons to the required position while holding down the COMMAND key.

Add a graphic to a code window

1. A quick way to add a graphic to a code window is to copy (COMMAND+C) from any drawing software.
   Using a Mac OS feature, you can select a picture or graphic from anything on the screen. Press SHIFT+CONTROL+COMMAND+4 keys, then click and drag over the area to be copied. Paste your copied image into the code window (COMMAND+V).

2. To paste an image to an existing button, press the CONTROL key and click on the button. From the drop down menu select Paste image.

Duplicate a Button

1. To duplicate a button and its properties, highlight the button by clicking on it once.
2. Press the OPTION key and click and drag the duplicate to another location within the code window.
3. Name the new button. All the properties will be the same as the original except for the hot key and the linking. Hot keys can only be used once per code window.
4. To duplicate a button from one code window to another, press the OPTION key and click and drag the duplicate to the new window.

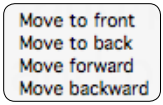
Duplicate a Group of Buttons

To duplicate a group of selected buttons from one code window to another, press and hold the COMMAND key and click on each button in the group, next press the OPTION+COMMAND key and click and drag the group to the new window.

Button Layers

Every button created in the code window is on a separate layer. These layers are not visible, but they exist all the same and this architecture can be used to your advantage if required. It is sometimes useful to overlap buttons or hide them behind another layer.

1. To move a button to the top layer, highlight the button, press CONTROL and the RIGHT ARROW key.
2. To move a button to the bottom layer, highlight the button, press CONTROL and the LEFT ARROW key.
3. To move one layer at a time, press the CONTROL key and press ARROW UP to move the layer up 1 level at a time or press the CONTROL key and press ARROW DOWN to shift the layer down 1 level at a time.



Alternatively, right click (CONTROL+CLICK) on the button and select the action from the drop down menu.

Note: In a Code Window you may select multiple buttons either by using the Apple "lasso" function or by holding down the Command key and individually clicking the desired buttons.

Applying Properties to Multiple Buttons
You can apply any property to a group of selected buttons. Select a group of buttons with the edit button window open, then right click on the property and select apply to selected buttons from the drop down menu. The property will be copied to all the selected buttons. All properties can be copied to another button except the hot key and any button links.

Edit Button window

Edit A Button

1. In the code window, double click on the button you want to edit. This opens the Edit Button window. You can also right click on the button and select Edit Button from the drop down menu.

2. Change the button properties.

In the Edit Button window any box or radio button which can be activated or deactivated is refered to as a "property" because such action will change the property of the button.

Click OK to commit changes or Cancel to close the window and not save the changes.

3. To speed up the editing process, leave the Edit Button properties window open and click on another button in the Code window. This saves the previous button properties and switches to the selected button. Click OK to commit changes and close the window.

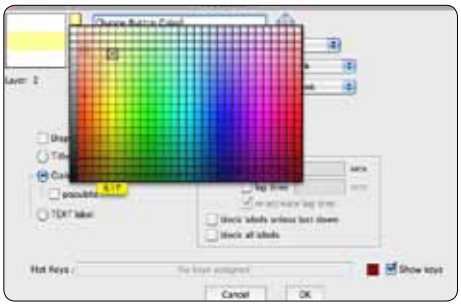
Hot Keys

1. To keep a tidy window, uncheck the show key box next to the hot key text box in the button properties window. Then press the keys button  in the code window to show them.
2. Use USB peripheral devices such as remote controls or number keypads to make use more flexible, especially if you are running a camera and trying to code at the same time.

Change A Button Name

Double click on the button you want to change. In the Edit Button window, change its name in the text box.

Change A Button Color



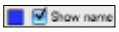
Click and drag from the color chip into the color palette and select a color. Code rows can be sorted by color in the timeline. The sorting scheme moves from left to right in the palette starting at the top row to the bottom row.

You may color multiple buttons at one time, by "Applying properties to multiple buttons". (Refer to the hot tip on page 30)

Change the Position of a Button Name

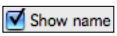
1. Click on the points of the text positioning tool.
2. Click in the center box to reset the position to the center of the button.

Change the Text Color of a Button Name



Click on the color chip to the left of Show name and drag into the color palette to select the color.

Change the Visibility of a Button Name



Check the Show name check box to display the name of the button.

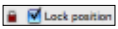
Change the Font Size of a Button Name

Select the Size from the drop down menu to set the font size for the name.

Frame a Button

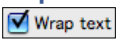
Check the Frame button check box to show a black frame around the button.

Lock a Button Position



Check the Lock position check box to lock the button in place.

Wrap Button Text



Check the Wrap text check box to wrap the text to the shape of the button.

Display Output

Check the display output check box to display cell information from a statistical window.

Change a Button Function

1. Double click on the button you want to change.

2. In the Edit Button Window, change the selection from code to title or text label.

Populate Rows in Timeline Automatically

Check the populate box to automatically populate the timeline with code rows upon code or capture mode activation.

A code row will be created whether there are any instances in the row or not.

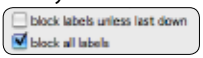
Blocking Labels

While coding, you will find that you may want to prevent certain labels from inserting into certain codes, so the labels do not end up in the wrong code. There are two options to help with this.

1."Block labels unless last down" stops a label from inserting into an instance unless it was the last code button pressed down, (activated).

To effectively use this property, the coding process must be done sequentially to guarantee that the label inserts into the correct code.

2."Block all labels" stops the code button from accepting any text label. The instance will never have any labels inserted in it.



Set Lead And Lag Times

You have complete control over the duration of each instance you code. Using lead and lag times means you can program code buttons to automatically add a specific time to the beginning or end of an instance when the button is pressed.

Lead Time

Lead Time automatically adds a specific time to the beginning of an instance when it is being coded. When you click on the code button to code the instance, the specified lead time is added to the time from when the button is pressed down.
For example: You are watching a classroom movie and would like to track each time a student raises his/her hand. If you assign a five second Lead Time to the "Student" code button, the instance will appear on the timeline starting five seconds before the mouse click. This guarantees that the event will be in the instance when you review it later.

There are Two Types of Lead Time

- Default lead time applies to all code buttons that you have not programmed with a custom lead time.
- Custom lead time allows you to program a specific lead time to individual buttons.

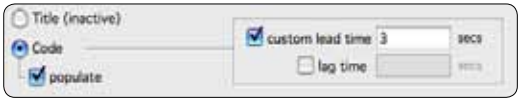
Program a Default Lead Time

In the Code Window Toolbar, enter the default time you want to use in the "Default Lead" box at bottom left.

Program a Custom Lead Time

1. Open the edit button properties window.
2. Check the custom lead time box and enter the number of seconds of lead time you need.

Note: If no Custom Lead Time is specified, the default lead time will apply



Lag Time

Lag Time automatically adds a specific time to the end of an instance when it is being coded. When you click on the code button to code the instance, Studiocode adds the lag time to the end of the Instance. For example: You are coding a movie and have a six-second lead time and a two-second lag time for a code button named "Clapping". When you see the person "Clapping" and click on the button, the instance in the timeline will be eight seconds.

This becomes a fixed length instance and requires that you only click on the button once which makes the coding process faster and easier.

Customize a Lag Time

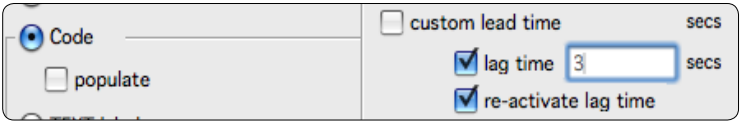
1. In the code window double click on the code button for which you want to set custom lead time. This will open the edit button properties window.
2. Check the Lag time box and enter the required lag time.
3. Code Buttons that use a lag time have a green diamond identifier.

During coding, if a fixed length instance button is reactivated, the lag time will be reinitialised.

Note : If no lag time is entered, the button will have a toggle action and you must click the button to stop coding. Lead and lag times can be set using decimal places to increase frame accurate coding.

Re-activate Lag Time

When this option is ticked, the lag time of the button will be re-activated to extend the length of the instance if the button is pressed again before the lag time has expired. This is to make provision for more accurate statistical counting of instances when ticked instances are extended, so 2 events of the same type will merge into one event. If this is not ticked, an activated Code Button which is counting down lag time when clicked on again will stop coding the current instance and a new one will be created with the new lag time count down intitiated.



1 Double click on the Code Button in the Code window to open the Edit Button Properties window.
2 Set the Lag time for the button and the option will become available

Customized Hot Keys

To speed up your coding, instead of using your mouse to press (activate) your code or label buttons, you can assign a hot key to a button. Using hot keys will be considerably faster when you are coding, than moving and clicking your mouse or mouse pad.

Assign Hot Keys

1. Click on the Hot Keys box in the edit button properties window.
2. Press the key or key combination you want to use. Combinations can be configured

using the modifier keys COMMAND, OPTION, CONTROL, and SHIFT.

3. Press the modifier keys first, then the character you want to assign.

Note: You can use up to three modifier keys at once plus one character. This allows for over one thousand individual hot key combinations. There are some combinations reserved for the system, most of these use the COMMAND key.

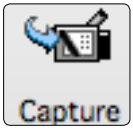
Change the Hot Key Text Color

1. Click on the color chip next to the Show keys check box and select a color from the palette.

Hide Hot Keys

1. Uncheck the Show keys check box to hide the hot key text in the button.

Capture Mode



When in Capture mode, activating buttons in the Code Window will create instances in the Timeline in *Current Time*. (refer to the definition of Current Time in the Capture section of the manual)

Code Mode

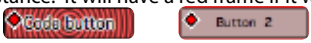
Code Mode will insert instances at the *position of the playhead* on the timeline. When a code button is clicked to start marking an instance in the timeline, the instance will start at the playhead if no lead time is set for the button. After the movie is captured and available in a timeline, coding can be done by dragging the playhead to any location or using the movie transport controls such as fast forward, even the playback speed can be set faster in the main toolbar.

During capture, this can be used to code behind the capturing movie, a great option for live coding. Instances can be coded very accurately and precisely. There is a small time gap between the capture and the timeline movie that cannot be coded during capture. This time gap is roughly 5 seconds.

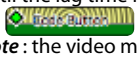
Coding Instances

a. From a movie already linked to a Timeline

Open a code window and movie, then press the Code mode button and the movie should begin to play. When you see an event in your movie that you want to code, click on the relevant code button or use your preset hot-key. The button highlights while it is actively marking and, (unless a lag time has been specified for the button,) it will need to be clicked again for it to mark the end of the Instance. It will have a red frame if it was the last button closed.



If the button has been customized with a specified lag time, you will see a green bar fill the button until the lag time runs out.



Note : the video must be playing in order for the green bar to activate. ie. If you are coding with the movie paused, and click on a button with a lag function, you will not get the green bar.

b. From a movie not linked to a Timeline

Open a new Timeline , File > New > Timeline
Select the movie file you wish to code/link to the Timeline - Click Open
Answer "YES" to question "Do you wish to place the movie inside a movie package?"
Proceed per (a) above.

Stop Coding

To stop coding your movie, (halt Code mode,) click on the Edit Button in the Code Window Toolbar. This will also stop the movie.

Live Coding
Coding can be done during capture, press the capture icon in the code window tool bar to start the process. You can code using the mouse or using hot keys. To save time, we suggest using hot keys because you can type while watching the performance, whereas if you are mousing you will have to look where you are clicking.
Pausing the movie capture during breaks (such as advertisement breaks) will save your computer disk space. Click on the pause button in the capture window or press COMMAND+K. Click on the resume button or COMMAND+K to continue capture. Use the pause option if you need to fast forward dvds/tapes or interrupt the video signal during the movie capture.

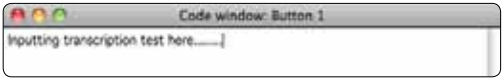
Pause / Restart Coding

To pause the coding (and pause the movie,) of the Timeline and then also to restart the coding, press the Space bar on the keyboard.

Live Transcription

During the process, transcription text can be inputted directly into any active code button. The best way to demonstrate how this process works is to work through these steps.

1. Open a timeline with linked movie.
2. Create a new code window with 2 code buttons, named "Button 1" and "Button 2". Do not set lag time for these buttons; the lag time might end before the text can be inputted.
3. Initiate code mode in the code window.
4. Press "Button 1" in the code window to start coding an instance.
5. Press CTRL+= on the keyboard. This will open a live transcription window that is linked to "Button 1". The name of the button that the live transcription window is linked to is in the window's title bar.



6. When "Button 1" is down, actively coding, if the live transcription window that is linked to closed by either clicking the red button in the window or pressing COMMAND+W, the live transcription will be saved in the instance that is being coded. If the the button is pressed up to stop coding, the text will disappear and be saved in the instance while keeping the live transcription window open.
7. Do steps 4 through 6 using "Button 2". Note that both windows can remain open. As many live transcription window can be open as required. Note that the live transcription window opens for the last button pressed down. Check the title bar of the windows to see which window is linked to the buttons.

One of the problems that will likely be encountered is how to use hot keys while inputting text into the live transcription window. There are two unique rules to handle this situation when using this feature:

1. Single short cut keys cannot be used to trigger buttons when the live transcription window is the active window.
2. COMMAND+OPTION, COMMAND+CTRL and CTRL+OPTION plus another key can be used as hotkeys that will pass through the live transcription windows and be received by the code window.

Live transcribing takes a lot of practice. Do not expect to perfect on the first few tries. Being an effective user of this feature requires solid keyboarding skill.

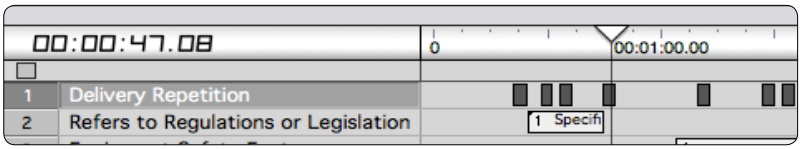
It is common practice to use feature for annotating during capture, then exporting into the transcription window to thoroughly transcribe the video.

Label Mode

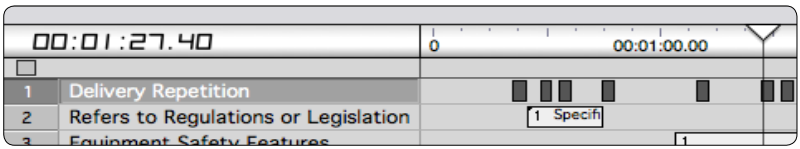
Label Mode is designed to add or remove labels to and from existing instances in a timeline. While label mode is active, code buttons cannot be used. It is common practice to have a code window purely made up of label buttons only. Some events might be coded using code buttons only, providing the skeleton of the events that occurred in the movie. In a second pass during the analysis process, labels can be added while reviewing the instances in a looping mode.

Using Label Mode

1. Select a row of instances in the timeline by clicking on the row number. This will highlight all the instances in the row.



2. Set the playhead prior to the first instance for which you want to start labeling.



3. Activate Label Mode by clicking on the Label icon in the code window toolbar.
4. Press the TAB key start the process. The playhead will jump to the instance and start playing the movie. The playhead will continually loop in the instance.
5. Press the label buttons in the code window to add to the instance. To remove a label, hold down SHIFT+OPTION+COMMAND and click on the label button.
6. Press the TAB again to advance to the next instance. Pressing SHIFT+TAB will retrogress to the previous instance.
7. To stop Label Mode, change modes in the code window.

We suggest opening the Edit Instance Labels window (COMMAND+E) to make viewing the labels contained in an instance easier to view. This will update according to the selected instance with the added bonus of being able to easily remove labels.

Once Label Mode is active, there are several clever ways to use the feature.

Click and add labels

Select an instance and click on the label buttons to add labels. Select another instance any where in the timeline and repeat the process.

Adding a label to a group of selected instances

Select a group of instances or all instances (COMMAND+A) and click on the label button in the code window. This will add the label to all the selected instances, convenient for adding metadata such as event name or date to a bunch of instances.

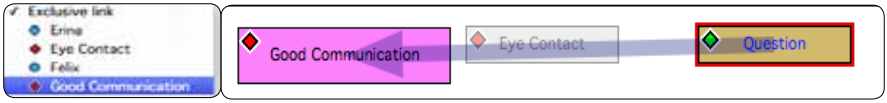
Removing a label from a group of selected instances

Select a group of instances or all instances (COMMAND+A), hold down SHIFT+OPTION+COMMAND and click on the label button in the code window. The label will be removed from the instances. If there are duplicate labels, press the label button down multiple times while holding down SHIFT+OPTION+COMMAND, each click will remove the label from the selected instances.

Button Links

Exclusive Links - Code Button to Code Button

Two or more code buttons can be exclusively linked to each other. This means that if one button is active and a linked button is activated, the first button will stop coding (be deactivated) and the second will start coding. This feature is great for coding quick exchange of dialogue between more than one speaker. One click to stop one button and start another.



1. Open the edit button properties window for a code button.
2. Click on the Exclusive link drop down menu and select a code button to link to. An arrow will appear in the code window to show where the button is linking to.

Exclusive Links - Text Label to Code Button

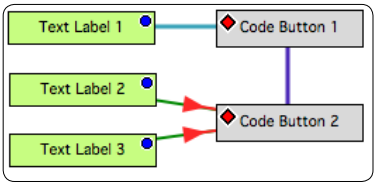
A text label can be exclusively linked to a code button, so when it is activated it can only be inserted in the linked code button.

Activation Links - Button to Button

A button can be linked to another button to activate it. When the linked button is activated it, it activates any linked buttons. The link line indicates the direction in which the activation will occur. Activation links only press buttons down, they will not de-activate a button or toggle the button up. Any type of button can activate another button. Chains of activation can extend to fire off multiple buttons.

Note: When a text label is linked to multiple code buttons, it is in a chain of exclusivity where the text label will describe any of the linked code buttons.
Click on the Links icon in the tool bar to display the links for the button. If the "Show all Links" is turned off for the button, these links will not show up until it is turned on. To change the Show Links option, right click on the links button in the tool bar of the code window and select

"Show all Links".

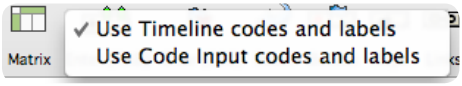


Remove a Link

Click on the source button and open the edit button properties window.
Click on the Exclusive link drop down menu and click on the button link indicator to be removed.

Analysis from the Code Window - Matrix Function

Clicking on this icon will take you to a matrix of the open Timeline or of the front Timeline if more than one Timeline is open. If you right click (Control + Click) on the icon you will be offered :



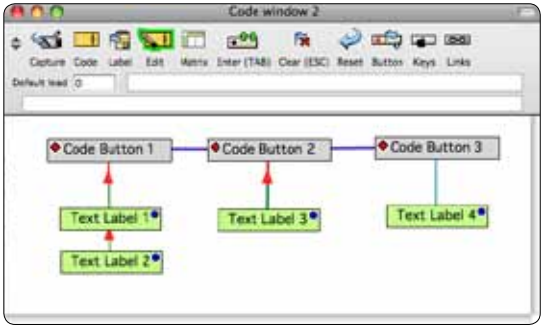
1. A matrix consisting of the buttons and labels in the Timeline with the matrix cells populated or ...
2. A matrix consisting only of the buttons and labels in the Code window.

A full Code window from a Timeline could potentially produce a very large and unwieldy window. An analyst may quickly construct a simple Code window with a selection of codes and labels from a Timeline, then choose option 2 above to select a matrix consisting only of those components in the simplified window.

Create a New Code Window Using an Existing One

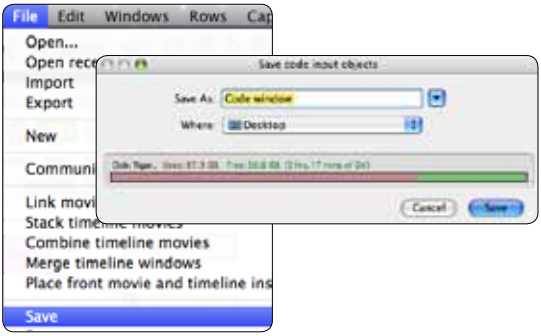
1. Open the code window you want to use as a template.
2. Make the required button name changes for the new code window.
3. Choose File > Save as (COMMAND+SHIFT+S) and give the code window a new name.

Code windows can be moved from computer to computer without any problems just like any other type of file. You can share your work and have everyone using the same terminology and coding schemes.



Saving Code Windows

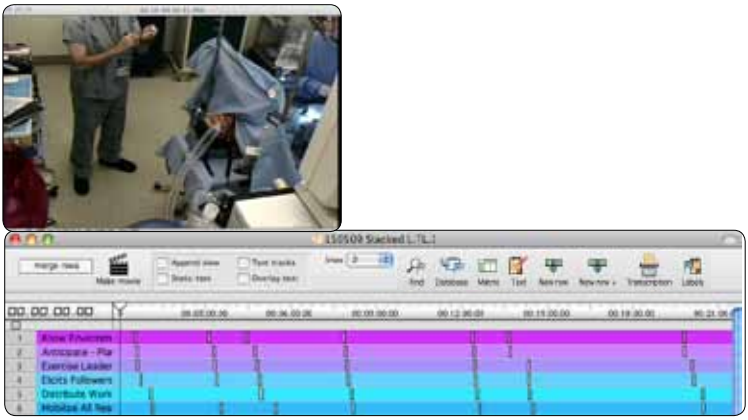
Once you have created all your code buttons, save the code window. You can use this as a template for other windows or use it to code any movie. This saves time as you will not have to create all the buttons again and you can have as many code windows as you like.



1.Choose File > Save from the main menu bar (COMMAND+S)
2.Name the code window.
3.Target where to save the file.
4.If you have saved the code window to your desktop, it becomes an icon. Double click on the icon to open it.

The Timeline

When your Timeline is open, the movie which the Timeline is linked to is generally displayed in the top of the screen with the attached timeline below it.



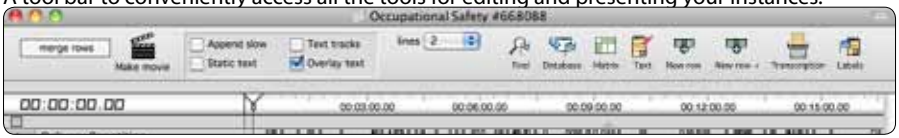
Components of the Timeline

A timeline of your movie represented in hours, minutes, seconds and hundredths of seconds. The movie displayed is from the location of the playhead in this timeline. The playhead is the small triangle pointing in a downward direction. It can be dragged right or left to move through time in the movie.

Code rows with names that are populated automatically from code buttons (refer to page 33,) or created manually when a code button is first activated.

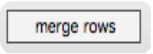
Instances and where they happen within your movie.

A tool bar to conveniently access all the tools for editing and presenting your instances.



The Timeline Toolbar

Merge Rows
When creating instance movies this button presents 3 options. Refer to page 92.

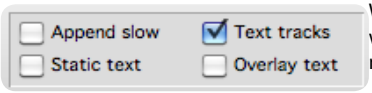


Merge Rows = plays instance movies in chronological order regardless of the row the instance is in.
Sequential Rows = plays instance movies from row A then row B etc.
Selection Order = plays instance movies in the order that the instances were selected.

Make Movie

Makes a movie out of selected instances. Refer to page 91.

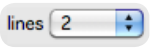
Append Slow etc



When **Append slow** is ticked, the instance movie you make will play in real speed first followed immediately in slow motion, (default speed is 50% real speed.)

By checking the **Static text** box, each instances associated text descriptors will be displayed in a static title before each instance.
By selecting **Text tracks**, the text track will be displayed at the bottom of the instance movie screen.
By selecting **Overlay text**, the row name, instance number and text labels will be displayed over the movie as it plays.

Lines



Allows you to specify the number of lines of text displayed at a time in the instance movie. Refer to page 137.

Find

Takes you to the Global Find window. Refer to page 113.

Database

Saves an instance or group of instances to a pre-created database. Refer to page 112.

Matrix

Takes you to the Code Matrix window. Refer to page 120.

Text

Opens the Edit text window. Transcription text will also be displayed here. Refer to page 137.

New Row

Adds a new blank row to the Timeline. Refer to page 107.

New Row +

Creates a new row from selected instances in the Timeline. Refer to page 107.

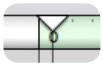
Transcription

Exports a single instance or any group of selected instances to a Transcription window

Labels

Takes you to the Labels Tree window. Refer to page 48.

The Playhead



Create a New Timeline

Timelines are always created during capture. However, there are times when you will want to link a new timeline to the movie so you can code a different aspect, or multiple users are coding the same movie and you want to keep the data separated.

1. Choose File > New > Timeline from the main menu bar.
2. Select the movie you wish to link the new timeline to.
3. Save the new timeline by pressing COMMAND+S or choose File > Save from the main menu bar.

You can now press the code mode button in your code window to code the movie. Alternatively you can create and modify instances manually.

Save a Timeline

To save a Timeline, open the Timeline and select File > Save As from the Main Menu bar.
Note: The link to the existing movie file will also be saved. The actual movie file will not be saved as a part of the Timeline. If this link is broken for any reason, when this Timeline is opened again, Studiocode will ask you to re-link the movie. (See page 76)

Editing Labels in an Instance in the Timeline

When you right click (Control + Click) on an instance in the Timeline, the Labels Tree for that Timeline will be displayed in a drop down panel. The labels and label groups which are available will be displayed. The groups will be indicated by an arrow marker, hover the cursor over the group name to display the labels in that group.

The labels which are attached to that instance are indicated by a blue diamond marker or a red arrow marker beside a group name if a label from that group is attached.

You may add or remove a single label in that instance by clicking on the label in the existing labels tree displayed. You may add or remove multiple labels from an instance by displaying the labels tree for that instance, then hover your cursor over each label and press the Command key

Exporting Instances to a Transcription Window

Any group of selected instances or a single instance can be exported to a Transcription window. Select the instances in the Timeline, then press the Transcription button in the Timeline tool bar. If a Transcription window is open the instances will be pasted below the last row of that window. If a transcription window is not open a new one will be created automatically with the instances. When multiple instances are exported at once, they will be pasted in the window chronologically. If the selection is across multiple rows, each row will be pasted in their respective sections in the window

Movie Packaging

We recommend always packaging movies. A package is really just a folder with files inside, Mac OS X simply recognizes it as a single file. This makes it very convenient to move around and not lose any necessary files. We use packages because it is solid way of protecting the source movie and handy to store timeline and edit list files inside.
A definite trend is for users to acquire video files over the internet. While this is a great convenience, the quality and creation process is largely unknown. What you download is what you get, in most situations there is no knowledge on how the video was created and what tools were used to compress, etc. Some of these movies will have different movie data containers that may be corrupted by Quicktime when there are attempts to write data back into the file. This is why it is best to always package the movies. The packaging process places the source movie in a movie data folder, then creates a reference movie that points to the source movie. Any changes to aspect ratio or text track information of the movie is saved in the reference movie and we never have to touch the actual source movie.

If a new timeline is linked to a free standing movie, a prompt will appear asking whether or not you wish to package the movie. We highly recommend answering yes to this question. The process is very quick, it simply wraps up the movie and timeline inside a package. It does not copy any data like the Save as standalone package does.

Place front movie and timeline inside a movie package

In previous versions of Studiocode, it was common practice to have a free standing movie and timeline file. If you have this situation, package them. Open the timeline and choose File > Place front movie and timeline inside a movie package. It will package them up together.

Note: Timeline files can still be free standing as long as the movie is packaged. You can have as many timelines pointing at a single package as you wish.

Timeline Backup Folder

The timeline is continually backed up inside the movie package. Up to 50 timeline backup files will be saved. The oldest one will be removed when a total of 50 files is reached. As coding or editing of instances is done in the timeline, a backup timeline file is saved in a folder called BACKUP folder. Each backup file is saved with a time stamp included in the name. If a gross error is made when editing, the system loses power or crashes while the file is open, a backup file can be used to replace existing timeline.

To replace an existing timeline with a backup timeline. Open the package, navigate into the BACKUP folder, then drag and drop the backup timeline next to the existing one in the folder above and delete the existing timeline. When you double click on the package, the backup timeline will open as the default timeline. The file name can be changed if desired.

The Timeline Timecode

This function is to help integrate specific time based imports, (such as METI data, SimMan data and XML transcription data,)into a Studiocode Timeline.

A new preference has been added in the Capture Preferences, "Use Timecode produced from capturing device". When this is ticked, a Timecode track will be created in the movie from the data that the device is outputting. Remember to set the correct time on the camera or device that is being used to capture from. The Timeline timecode can be altered by right clicking on the Timeline timecode counter situated above the row column in the Timeline window. Right clicking on the counter will reveal a Pop up menu, these are the options:

- **Use movie time**, this option displays standard movie time hh:mm:ss:hshs. The "hs" is hundredths of seconds.
- **Use Timecode**, this option displays the timecode in terms of 24 hour time as in the time of day. The numbers will be displayed in blue. This is useful for setting the time of day of an event, so the ability to when an instance occurred. NOTE: Changing the counter to display this might show the time at which the capture was done. This can be read from the camera or capture hardware that is connected. Be sure to set the camera time, so the correct time is captured. Presenting, breaking the timecode up segments along the timeline is not possible. The timecode will roll over to 00:00:00.00 when the playhead is dragged past 23:59:59.99. This means the playhead was dragged past midnight.
- **Set movie time to zero**, this option resets the movie time to 00:00:00.00 according to the location of the playhead. The time will be displayed in red when the numbers are "negative" or the playhead is set before the new zero point.
- **Set TimeCode**, this option reveals a menu from the timeline title bar. The time can be set here
- **Delete TimeCode track**, this option removes the Timecode track. It can be readded by using the Set TimeCode function, but the original one that may have been done during capture cannot be brought back.
- **Use frames for TimeCode**, this option will display the hundredths of seconds in frames.
- **Use seconds for TimeCode**, this option will display the Timecode to the hundredths of seconds.

The Labels Tree Window

The labels tree is a pop up menu system used to add or remove text labels for an instance in the timeline or the movie organizer. The term "Labels Tree" is derived from the concept that groupings of labels may resemble the branch of a tree because labels may be grouped into categories or branches.

The labels tree pop up menu is auto generated from the text labels in a code window or can be created manually using the Labels Tree window. When code mode is activated in the code window, the labels tree pop up menu is saved into the timeline and can be accessed by right clicking on an instance. All the labels found in the instances in the timeline are shown in cells of this spreadsheet style window.

The pop up menu will display in the order of the rows in the Labels Tree window. Labels can be sorted alphabetically in ascending or descending order. The Labels Tree window can configure the pop up menu layout to extend horizontally, so labels can be structured in logical and easy to navigate branches. A Labels Tree can be saved as a file and used similarly to a code window.

Many Labels Trees can be opened at one time. It is the front most Labels Tree window that will appear as the pop up menu when an instance is right clicked on. This is useful when coding enitirely different aspects of an event and can help avoid long lists of labels that make it difficult and time consuming to find a specific label.

A default Labels Tree window is created for the Timeline from using a code window in code mode. If multiple code windows are used, all the labels from each window will be added to the default labels tree in the Timeline.

Accessing and Creating a Labels Tree

There are many ways to access a Labels Tree. A Labels tree can be accessed from the Timeline, Sorter window and Movie Organiser window. The most common way is to press the labels button in the timeline window. This will open a Labels Tree with the labels that were used for coding the timeline. Once opened this window can be edited and the changes will be saved in the timeline. The window can also be saved like a code window and used to label other timelines and the new Labels Tree data will be saved in those timelines. Opening an existing Labels Tree is a good place to start when building separate Labels Trees for various coding work flows.

Labels Trees can be created from scratch too. Select File > New > Labels Tree. Then add a label in a cell of each row in the first column of the window. When this window is the front most Labels Tree window, it will be used to create the pop up menu that appears when an instance is right clicked. Save this window by pressing COMMAND+S.

In Studiocode, a Labels Tree can be created by right clicking on the Label mode 

button in a Code window. Select export labels from the pop up menu and all the labels will be exported into a new Labels Tree. The label button color will also be exported, making it easier to find label sections in the window.

Adding a New Text Label to The Labels Tree

Press the new row button in the tool bar of the Labels Tree window. This will create a new row under the currently selected row or at the bottom of the window if no cells are selected.

Deleting a Text Label in the Labels Tree

Right click on the row number and select delete row from the pop up menu.

Changing a Label

Click in the Labels Tree cell and edit the text.

Creating Branches for the Labels Tree Popup Menu

Adding columns to the labels tree will create branches for the the popup menu that appears when you right click on an instance to edit the labels in the instance. Creating branches spreads the lists of labels out horizontally and groups them, so labels can be more easily navigated and found.

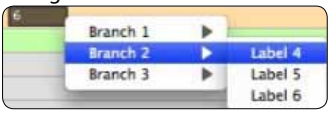
The root of the menu is the first column in the labels tree window. The second column creates a branch from the root and subsequent columns create sub-branches of the branches. The labels tree can have as many columns (branches) as is required. A branch ends when the last column and rows of that column end.

Here is how to create a simple one branch level menu.

1. Create a new labels tree window. File > New > Labels tree.
2. Add 1 column and 9 rows by pressing the add rows and add columns button in the tool bar.
3. Add the name for the first branch in cell (1,1). Then, add labels in cells (2,1), (2,2), and (2,3). This creates the first branch with 3 labels as options in the popup menu.

Use multiple Labels Tree Windows
Create multiple labels tree windows where each window has a specific set of label information in it. (Name the windows as to their purpose and the information contained) Open all the labels tree windows at once, press the small button in the upper right corner of each window, this will hide the window, leaving the window bar only showing. Click on the window bar for the labels tree that will display in the popup menu when an instance is right clicked on. The top most label tree window will display in the popup menu.

4. Add the name for the second branch in cell (1,4). Adding text into this cell ends the previous branch and starts a new one. Then, add labels in the cells (2,4), (2,5), and (2,6). This creates the second branch with 3 labels as options in the popup menu.



5. Add the name for the third branch in cell (1,7). Then, add labels in the cells (2,7), (2,8), and (2,9). Adding text into this cell ends the previous branch and starts a new one. This creates the third branch with 3 labels as options in the popup menu.
6. Save the labels tree, so it can be re-opened and used again to label instances in a timeline.
7. Test the labels tree by opening a timeline and right clicking on an instance. If the labels tree is the top most label tree window, the popup menu will appear as it has been structured

Editing Text Labels Using the Labels Tree Pop Up Menu

The labels tree is a pop up menu system used to add or remove text labels for an instance in the timeline, movie organizer, and the sorter window. The labels tree pop up menu is auto generated from the text labels in a code window or can be created manually using the Labels Tree window. When code mode is activated in the code window, the labels tree pop up menu is saved into the timeline and can be accessed by right clicking on an instance.

Strip Instance Contents

Sometimes it is necessary to remove any labels and instance notes from instances in a row of the timeline.
1. Select the instances in the timeline, press COMMAND+A to select all.
2. Choose Edit > Strip instance contents

Remove duplicate labels from Selected Instances

If data has been imported using one of the many imports, it can often contain duplicate labels that are not necessary. To clean up the duplicate labels, select the instances or all isntances and choose Edit > Remove duplicate labels from selected instances. Any duplicates will be stripped from the instances. This feature is helpful when cleaning up coded instances too, especially if label counting is important in the matrix or statistical window.

To Add or Remove a Text Label in an Instance

There are 2 ways to add or remove labels from an instance.
1.

Right click on an instance, the Labels Tree will open.

Hover over a text label and press COMMAND to add a label, a blue diamond will appear next to the label.

To remove a label, hover over the text label, press COMMAND.

To add or remove multiple copies of the same label, hold down COMMAND and click on all the labels you wish to add or remove. You may also select the option from the Edit Menu in the Main Menu Bar to remove duplicate Labels

2. Open the Edit labels window, COMMAND+E, then select an instance.

To add a label press the new label button, then double click on the new untitled text label row and add the text.

To remove a label, select the row, then press the scissors button and it will dissappear.

Leave the window open and click on instances click edit or view labels.

Importing Files

Studiocode can import a selection of third party textual data. If there is a problem please let Sportstec know as it is likely the third party data source has changed its data structure.

An important item to note about importing is movie and data synchronization, it is very likely that adjustments will have to made on the instances after the import. We recommend getting familiar with the Instance Adjustments and nudging features in the Edit menu.

Each import has a specific format and data structure. Only the Edit List and Studiocode XML will be explained in detail as we export both of these types of files. These are also commonly used in third party solutions to feed data into Studiocode. There are quite a few users generating or converting data from external sources beyond Studiocode.

Edit List

This import is mostly used in conjunction with a spreadsheet editor like Excel. Try exporting an edit list from Studiocode and look at its structure. Note that Excel might insert hidden characters, so use the export as tab delimited file if creating an edit list in excel.

The file to be imported must be tab delimited file with the following columns in order and included as the first line:

start time
end time
category
Nth instance
#descriptors
descriptors...

- The start time and end time must be in 00:00:00:00 format. These columns set the start and end time
- for the instance.
- The category column represents the timeline row.
- Nth instance is the number of the instance in the row.
- # descriptors indicates how labels are in the instance.
- descriptors... are the label names that are in the instances. The amount should match the # descriptors and each label should be separated by a tab.
- Each instance must be on a separate line.

Here is an example of some lines

Data lis

	A	B	C	D	E
1	start time	end time	category	Nth instance	# descriptors c
2	00:00:45:80	00:00:59:58	TRANSITION	1	0
3	00:00:49:00	00:00:59:00	CLASS ROOM	1	0
4	00:01:02:57	00:01:12:57	CLASS ROOM	2	0
5	00:01:08:98	00:01:18:30	TRANSITION	2	0
6	00:01:16:92	00:01:25:93	Self Defence	1	0

To use this import, open a Timeline and choose File > Import > Edit list... and select the Edit list file. The instances will be imported into the front-most timeline in your working window.

XML Edit List

Similar to the traditional Excel type Edit list file, an XML edit list file can be employed. The XML file format offers a bi-directional method to push and pull data though Studiocode. We recommend using the XML import over the Edit List because it is offers more options and is easily extended. Plus, this is the only format that Studiocode can import live during capture. When using the Studiocode capture window a time code track based from the computer's clock will be added to the movie.

The XML file can handle labels, label groups, instance notes, row colors, row sorting and time synchronisation where the traditional edit list does not offer this.

Note! Our XML file breaks strict XML standards, however the format follows the nested hierarchical nature (1 root element, elements and sub-elements) of standard XML structure. But, does not include special character handling in the element's contents. Some characters such ampersand should be represented as ampersand if used as content in code, label, label group, and instance note elements. Do not use the special XML character handling routines. We admit to a loose interruption to the standard and apologise for any inconveniences. It is likely in the future we will tighten this up like we have done in the Matrix web exports.

Here is a short example of an XML edit list to get you started. We have added indenting and styling to better display the nesting of the tags and make it more readable. Often XML files will not have this nice indentation making them a little more intimidating. Just know this is not a necessity.

You can try copying and pasting this example into TextEdit or some other text editor like Text Wrangler, then changing some of the content between the elements and importing it into Studiocode. For those not familiar with XML, remember, all open tags must also be closed, i.e. </TAGNAME>. If the file is not formatted perfectly in this way, it will not import.

```
<file>
        <SESSION_INFO>
                <start_time>2010-03-10 21:21:39.63 +1100</start_time>
        </SESSION_INFO>
        <SORT_INFO>
                <sort_type>sort order</sort_type>
        </SORT_INFO>
        <ALL_INSTANCES>
                <instance>
                        <ID>1</ID>
                        <start>4.9984074982</start>
                        <end>10.0046128241</end>
                        <code>Alexis Proctor</code>
                        <label>
                                <text>First Step</text>
                        </label>
                        label>
                                <group>Speed</group>
                                <text>Fast</text>
                        </label>
                        <free_text>This is a great example of a fast first step.</free_text>
```

```
                </instance>
                <instance>
                        <ID>2</ID>
                        <start>29.0119131044</start>
                        <end>59.2852137351</end>
                        <code>Alexis Proctor</code>
                        <label>
                                <text>First Step</text>
                        </label>
                        <label>
                                <group>Speed</group>
                                <text>Fast</text>
                        </label>
                        <free_text>This is another great example of a fast first step.</free_text>
                </instance>
        </ALL_INSTANCES>
        <ROWS>
                <row>
                        <sort_order>1</sort_order>
                                <code>Alexis Proctor</code>
                        <R>65535</R>
                        <G>4139</G>
                        <B>4139</B>
                </row>
        </ROWS>
</file>
```

Reading down the above example from top to bottom, below is a description for each element found in the file. For interest of saving space and paper, not all descriptions will include excerpts from this example. Please refer to the example above for elements that embody many sub-elements.

<file>

The XML must start with <file> and end with </file>. This is the root element. This sets the block of data for Studiocode to read.

<SESSION_INFO>

This is time stamp that indicates when the coding session commenced. The time stamp is used to calculate the offset between a Studiocode capture session and the incoming XML data session start time. This offset allows for seamless time synchronisation between the two separate systems. System time should be synchronised on any machines in the workflow. All instances must relate back to this time.

There are two supported date strings:

- yyyy-MM-dd HH:mm:ss.SS Z This is the preferred format.
- yyyy-MM-dd HH:mm:ss Z

Example:

```
<SESSION_INFO>
<start_time>2010-03-10 21:21:39.63 +1100</start_time>
</SESSION_INFO
```

<SORT_INFO>
Sorting order can be included in order for the timeline rows to be automatically sorted when they are imported. This is rather important for a better end user experience. So it should be highly considered especially when importing live XML data during captures.

The <SORT_INFO> element has a sub-element called <sort_type>. This element tells the timeline how it should sort the rows.

The options for sorting are:

- <sort_type>sort order</sort_type> - sort order indicates that a specific order must be followed during the import. The import routine will look in the <row> element to find a value to assign a priority for the sort.
- <sort_order>1<sort_order> - <sort_order> is set in the <row> element. Its contents should be represented by an integer or float: 1,2,3 or 1.1, 1.2, 1.3. The smaller the number, the higher priority the sort will be. The highest priority will be the first (top) row in the timeline. We recommend using integers, but floats can be handy if you need to insert something at a later date.
- <sort_type>color</sort_type> - color sorts the rows automatically by color using Studiocode's standard color sorting method.
- <sort_type>name</sort_type> - name sorts the rows by name alphabetically
- <sort_type>color then name</sort_type> - color then name sorts the rows by color then name alphabetically
- <sort_type>instance count</sort_type> - instance count sorts the rows according to the number of instances, greatest being first row.

Example:

```
<SORT_INFO>
<sort_type>sort order</sort_type>
</SORT_INFO>
```

The sorting methods are similar to those found under the Rows menu in the Main menu. Try opening an existing timeline and use the various sorting options to find out what will work best. We recommend experimenting using color and name. Color is a really good way to achieve nicely sorted and presentable timelines.

<ALL_INSTANCES>
This declares the parent element for all the <instance> sub-elements. This is where the real work begins, this element contains all the instances that appear in your timeline. See this in the short example at the beginning of this section of the manual. It follows the <SORT_INFO> element.

<instance>
The <instance> element represents a single instance in the timeline and all the sub-elements contained within will describe the instance to be represented in the timeline until closed with </instance>. It is a sub-element of <ALL_INSTANCES>.
Example:

```
<instance>
        <ID>1</ID>
        <start>4.9984074982</start>
        <end>10.0046128241</end>
```

```
        <code>Alexis Proctor</code>
        <label>
                <text>First Step</text>
        </label>
        <label>
                <group>Speed</group>
                        <text>Fast</text>
        </label>
        <free_text>This is a great example of a fast first step.</free_text>
</instance>
```

<ID>
<ID> is a unique identifier for the instance. Each instance must have a unique identifier, no two can be the same and there can only be one of these elements per <instance> element. This is a sub-element of <instance> and its content must be represented as an integer.
Example:
<ID>1</ID>

<start>
This sets the start time for the instance in the timeline. It's contents represent seconds. The contents can be an integer or float with precision up to 10 decimal places. This is a sub-element of <instance> and there can only be one of these elements per <instance> element.
Example:
<start>4.9984074982</start>

<start>
Like <start>, <end> sets the end time for the instance in the timeline. It's contents represent seconds. The contents can be an integer or float with precision up to 10 decimal places. This is a sub-element of <instance> and there can only be one of these elements per <instance> element.

<code>
The contents of the <code> element sets the row name in the timeline where the instance will be created. This is a sub-element of <instance> and there can only be one of these elements per <instance> element.
Example:
<code>Alexis Proctor</code>
The next part describes the labels that will be contained in the instance. In the example, the first <label> element does not have a <group> sub-element , the second does. To learn more about label groups, see this section of the manual at page 48. We recommend using label grouping as it has great benefits in the Matrix and without them the Sorter loses most of sorting power.

<label>
This element indicates that a label is contained in the instance. This is a sub-element of <instance> and there can be as many <label> elements as required.

<text>
This is a sub-element of <label>. Its content is the label that will appear in the contents of the instance in the timeline. There can be only one <text> sub-element per <label> element. See page 15 of this manual for a description of a label and how and where it is used in Studiocode.

Example:
<label>
<text>First Step</text>
</label>
Here is the second example with the <group> sub-element used within a <label> element.
<label>
<group>Speed</group>
<text>Fast</text>
</label>

<group>
The <group> sub-element indicates that the label described in its sibling <text> sub-element belongs to its contents (label group). There can be only one <group> sub-element per <instance> element.

<free_text>
The <free_text> sub-element's contents are the Transcription notes contained in an instance in the timeline. There can be only one <free_text> sub-element per <instance> element. To learn more about Transcription notes, see pages 130 - 137 in this manual.
Example:
<free_text>This is a great example of a fast first step.</free_text>
The last section of the example describes each rows color and sorting in the timeline.

<ROWS>
The <ROWS> element starts the section that tells Studiocode how to represent the code rows in the timeline. It is an element of the root element <file>. It contains sub-elements that indicate color for specific <code> sub-elements and provides sorting order information when the <sort_order> sub-element is used.
Example:

```
<ROWS>
        <row>
                <sort_order>1</sort_order>
                <code>Alexis Proctor</code>
                <R>65535</R>
                <G>4139</G>
                <B>4139</B>
        </row>
</ROWS>
```

<row>
The <row> sub-element represents information about a specific row's representation in the timeline. There can as many <row> sub-elements as required.

<sort_order>
As described above, the <sort_order> sub-element sets the sort priority when the <sort_type> sub-element contents of the <SORT_INFO> element are set to "sort order". There can be only one <sort_order> sub-element per <row> sub_element and it is a sub-element of <row>.

<code>
The <code> sub-element's contents tells the timeline which row it's data is referring to. This where the relationship between the <instance> sub-elements and the <row> sub-elements is made. There can be only one <code> sub-element per <row> sub_element and it is a sub-element of <row>.

<R>
The <R> sub-element's contents represent the color red in 16 bit RGB. It's contents must be an integer from 0 to 65535. It is a sub-element of <row> and there can only be one per <row> sub-element.

<G>
The <G> sub-element's contents represent the color green in 16 bit RGB. It's contents must be an integer from 0 to 65535. It is a sub-element of <row> and there can only be one per <row> sub-element.

<B>
The <B> sub-element's contents represent the color blue in 16 bit RGB. It's contents must be an integer from 0 to 65535. It is a sub-element of <row> and there can only be one per <row> sub-element.

A helpful tool for finding color values on your Mac, is to use DigitalColor Meter. It can be found in the /Applications/Utilities folder. Set it to display RGB As Actual Value, 16-bit.

Transcript Text File

The transcription window can export its contents into a tab delimited text file. This import option will create a new transcription window from the data. Some third party transcription applications use a similiar format, so this import can be used to import those files.
Here is an example of what the file should look like. There are tabs separating each column of data.

00:00:03:84 Matilda Alexis, quit taking all my toys! Angry
00:00:49:97 Alexis These are my toys, I had them first! Upset
00:01:25:85 Matilda No, you did not! On Fire

Note: If you are importing third party data, the time formatting is important. It is HH:MM:SS:00. 00 is hundredths of seconds and is separated by a colon not a dot. This does not comply with some spreadsheet editor's format like Excel. So, watch out for this convention and change the formatting before importing.

Transcriber XML File

The XML Transcript imports files that were created using Transcriber, the open-source transcription application. Since Transcriber is open-source and projects like this can change with very little documentation or announcements, we cannot guarantee that this import option will work as specified unless using Transcriber version 1.5.1 found on its official website. To learn more about Transcriber, visit the official website. At the time of this writing, the website is http://trans.sourceforge.net/en/presentation.php.

Tab Delimited Data into selected instances

There are occasions where data does not contain time stamp information. By creating a tab delimited file from the data and coding some corresponding instances, the data can be imported as labels into the coded or specifically selected instances. Each line will be imported into each instance respectively.

Here is a brief example on how this might be done.

1. Create a tab delimited file that looks like this. Remember that each label must have a tab in between each other. And each line must end in a carriage return, not a line feed.

Label 1 Label 2 Label 3
Label 3 Label 4 Label 1
Label 2 Label 1 Label 6

2. Code a timeline row with 3 instances.

3. Select the instances in the timeline.
4. Choose File > Import > Tab delimited data into selected instances...
5. Each line of the tab delimited file will be imported as labels in the corresponding instances.

Line 1 > Instance 1
Line 2 > Instance 2
Line 3 > Instance 3

Generic CSV

The generic csv import will import most comma separated value files that meet the following conditions:

1. The first line (row) in the file is the column header / value description.

2. There are columns/values for Mins,Secs,Frames and each line(row) has this data. Otherwise the data will be imported into the timeline.

Choose File > Import > Generic CSV file then select the file to import.

A window will appear where each column/value can be be configured as to how it will be imported into the timeline. By unchecking the tick box in the import column, the row will not be imported. The column heading name can be changed by double clicking in this cell of the column heading column. If the name is changed and the row is code, then this will be the timeline row name. If the row is desginated a label, then this will be the label group. Each row

can be imported as label or code row, click on Type cell in the column and set it to Label or Code. There must be at least one code selected in all the rows. When multiple items are code, the rows setup as labels will import into all instances for all code rows.

Paste METI Data

An event list from a METI system can be imported into the timeline using this option. To use this import:

1. Open the METI text file in a simple text editor like TextEdit. The file should look something like this:
   0:00:00 Patient Loaded: Untitled Adult Patient
   0:01:28 "Scenario Loaded: ""Cardiac Arrest"""
   0:01:28 "Scenario: ""Cardiac Arrest"" entered state: ""baseline"""
   0:01:40 "Scenario: ""Cardiac Arrest"" entered state: ""begin_Cardiac Arrest"""
2. Select the rows of data to be imported or select the entire document by pressing COMMAND+A.
3. Press COMMAND+C to copy the selection to the clipboard.
4. Open the timeline for which the data should be imported.
5. Choose File > Import > Paste METI data

The copied rows will be pasted into the timeline using the time references in the first column of the data file as the starting points for each instance created. The second column of data will dictate the code row that is created in the timeline. Its ending point will be the next row in the data where a matching code row is found. All other columns in the data file will be inserted labels for the instances.

Paste Laerdal Debrief Data

Similar to the METI Data import, the Laerdal Debrief Data import creates code rows and labels based on data in an event log. Use the same steps outlined in the METI import to import the data into the timeline. Rows and instances will be created for vital signs with their values being inserted as labels. A Laerdal event log should look something like this:

Debriefing
Date: 11.03.2008 Time: 16:17:24
Healthy patient 00:00:00 Scenario started: Healthy patient
00:00:00 HR: 80 BP = 126/ 84 SpO2: 98 PAP: 25/ 10 etCO2: 34 mmHg T blood: 37.2 ∞C etO2: 16
00:00:32 Left lung sound = Crackles
00:00:32 Right lung sound = Crackles
00:00:48 Pulse radialis/brachialis. Pulse absent
00:00:49 Central pulses. Pulse strength = normal
00:01:00 HR: 80 BP = 126/ 84 SpO2: 98 PAP: 25/ 10 etCO2: 34 mmHg T blood: 37.2 ∞C etO2: 16
00:02:00 HR: 80 BP = 126/ 84 SpO2: 98 PAP: 25/ 10 etCO2: 34 mmHg T blood: 37.2 ∞C etO2: 16
00:03:00 HR: 80 BP = 126/ 84 SpO2: 98 PAP: 25/ 10 etCO2: 34 mmHg T blood: 37.2 ∞C etO2: 16
00:03:22 Left lung sound = Pleural Rub

Set Directory for Auto XML Import

XML data can be automatically imported into a capturing timeline by selecting a folder for Studiocode to look for incoming data. The XML format must in the Studiocode format. See the XML Edit Import description for specifics on the data structure, particularly the session-info section. To make the time synchronization work really precisely, the computer clocks of the capturing and coding computers should be synchronized using network time. In order to synchronize properly, the movie must be captured using Studiocode.

When using this import option, the file name must have the tag <import> in the beginning of the file name otherwise Studiocode will not insert the data in the timeline. A file name might be "<import>MercyHospital.xml". Double underscores can be used in place of the angle brackets, so an alternate file name could be __import__MercyHospital.xml.

The import directory should be set prior to capture, but can be done at anytime during capture. The directory needs to be reset if the application is quitted.

The auto XML import will not update instances that have already been imported into the timeline for efficiency reasons as all XML data does not have to be reloaded from the start constantly. In the case where the XML data has been updated for existing (past) instances, the xml must be reloaded entirely. To do this: Choose File > Import > Reload auto XML import. The timeline will empty and all XML data will be reloaded.

Part 3 - Capture

Capture

We define capture as the process of recording a sequence of images from a video source such as a camera or digital convertor into a file on the internal hard disk of the computer or other storage device. The capture windows supports various PCI capture cards, firewire and USB cameras such as a webcam.

The capture window can be directly accessed in several ways:
1. By clicking on the camera icon in the main toolbar ..... 
2.Through the main menu: Capture > Open capture window.
3. A keyboard shortcut: ⌘R

In the Code window, by pressing the Capture icon..... 

Before opening the capture window, connect the camera or video source to your computer. When the capture window is opened, it will search for any connected video sources. If it does not find an attached source, it will default to the built-in iSight camera if available on the computer otherwise it will indicate none available. This is useful to know when testing connectivity between computer and video sources.
The cable used to connect a camera is likely to be a 9-pin to 4-pin or 6-pin to 4-pin Firewire cable. The 9-pin or 6-pin end of the cable connects to the computer and the 4-pin connects to the camera. Digital converters generally have a 6-pin connector, some have both 4-pin and 6-pin.

Making the connections

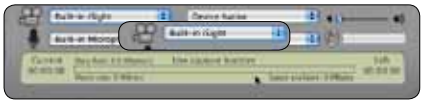
When connecting any video devices for capture, try to visualize the video signal flow. Drawing the signal flow on paper can be very helpful. Start by identifying the source and destination connectors physically on the devices, then map out how they are going to connect to each other, matching video out to video in accordingly. For instance, if you are sourcing the video from a satellite receiver, you are likely going to be using an analog to digital convertor as a bridge from the source to the capturing computer.

Signal Flow

Satellite Video Out > Convertor Video In > Convertor Firewire Out > Computer Firewire In
So, the signal flow will start at the video out connector of the satellite box, travel to the video in connector on the convertor using a rca cable, then travel to the computer using a firewire cable. Set the convertor settings to analog input if automatic detection is not enabled.

Setting Video and Audio Sources

The video and audio input sources can be set in the capture window below the video preview window. To change the video source, click on the drop down menu next to the camera icon.



Choose the source from the list. A camera or other device should appear in the menu if properly connected.

To change the audio source, click on the drop down menu next to the microphone icon.
If a camera or other external device is used for capture, this option will be greyed out.

Compression Options

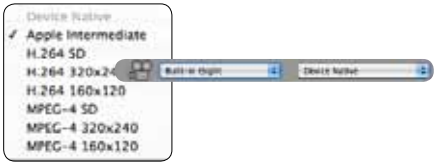
The capture window has options to change the encoding method that is used while capturing the movie. The encoding method is referred to as a codec. Codec stands for compression / decompression and is the way in which the data is stored (compressed) and presented (decompressed).

For many capture workflows, the native codec used by the source might not produce the optimal results, so a different codec might be chosen to use during capture. This is common to reduce the file size. For example, the DV codec produces very good quality video, but the file size is quite large. So, as a way of reducing the file size, capture using the H.264 or MPEG-4 codec option. While the quality is not as good, it is much easier to transfer and store the smaller files.

While choosing different codecs from the native ones is a great option, be aware that it requires more CPU to recompress the files on the fly. We recommend doing a lot of testing to guarantee that the options used during capture will work through the entire span of the video workflow. You might find that your computer is not powerful enough to handle capture, recompression and coding at the same time. You could also find that the chosen video codec will not work in some third party software involved in your workflow.

Video Codecs

There are 3 codec choices for the video component of capture, (apart from the device's native video codec.) These are designed by Apple to produce the best results possible. The video codec options can be accessed by clicking on the drop down menu to the right of the video source drop down.



Device Native - The capture will use the settings that are coming from the source. We recommend using this option in most cases as it reduces the load on the cpu and results in the highest quality possible. A common native codec is DV. DV files will be 13.76GB per hour.

Apple Intermediate - This is a codec designed by Apple to be an intermediate format in an HDV workflow. This codec produces very large and high quality video files while not requiring a lot of cpu work to do so. Files are roughly 20GB per hour. This is a great codec to use when you want a high quality master that will be used to create other videos such as for iPod or streaming over the internet.

H.264 - This option compresses the video into the H.264 codec, a derivative of MPEG- There are 3 options while using this codec, the options only change the frame size thus reducing the file size. We recommend using the H.264 SD option for most occasions. This creates a H.264 encoded movie with a frame size of 640x480. One hour of video will be approximately 2GB per hour. The data rate will fluctuate according to images being processed.
MPEG-4 - This option compresses into the MPEG-4 codec. Like H.264, there are 3 options, each one uses a different frame thus resulting in a smaller file. This has traditionally been the codec of choice for capturing good quality files with relatively small file sizes. Files will be roughly 2GB per hour. H.264 will supercede this codec in the future.

Audio Codecs

And there are 3 choices for the audio component of capture, (apart from the device's native audio codec.) Generally speaking, audio codec settings are largely ignored as when compared to video, mainly because the size of the audio component is insignificant to that of video. For the most part using the Device Native settings will be perfect. However to save a little space, using AAC High Quality is a good option.

Next to the audio source drop down menu are the compression options. By default, the menu selection is set to Device Native.

Device Native - This will capture using whatever the device is outputting.

AAC High Quality - This delivers a CD quality audio track at 128kbps.

AAC Voice Quality - This delivers a low quality audio track at 32kbps.

Apple Lossless - This delivers a very high quality audio track that is quite large in size depending on the audio that is being recorded. This is a good option to use if recording using external microphones and audio is really important to the video.

The Capture Window Toolbar

Capture /Stop Button

Press this button to start capture and to stop the capture. Click and holding down the mouse button will reveal a drop down menu of options.

Append Button

Allows you to stop a capture and then resume the capture at another time by appending the resumed capture to the initial capture reference movie file.

Pause / Resume Button

The Pause/Resume button allows you to pause the capture and then resume later. You cannot logout of the capture or perform another task in Studiocode while the capture is paused.

Update Button

Manually updates the reference movie. (See also the Hot Tip on page 71.)

Preferences Button

Takes you to the Preferences Window.

Customize Button

Opens the Capture Customization Window.

Current Time Display

Displays the current elapsed time of the capture.

Customize the Capture Window Toolbar

You may customize the toolbar of the Capture window by clicking the Customize icon.

This will open the Capture Customization window. Drag and drop the function icons either to or from the window into the toolbar

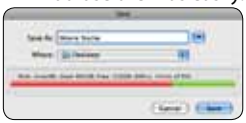
Capture Window Functions

Basic capture

Start to learn how to capture by stepping through the basics first.
Make sure the capture source, camera or convertor is connected and turned on. Or try using the Built-in iSight camera.

Open the capture window by clicking on the Capture icon in the main toolbar .  This will open the capture window and an image should appear in the window from the camera or convertor.
Press the red capture button to start capture .  This button will reveal a drop down menu if the click is held down while pressing the button.

Name the file and choose a destination folder. The desktop is a good place to start capturing files to as you will not lose them as easily.



Once capture has begun, a timeline window will pop up. This timeline allows live access to the capturing file, all the features of the timeline can be used live during capture. This timeline will continue to grow in length during the capture.

In the capture window, the status section in the bottom of the capture window will indicate: captured file length, size and data rate. It will also indicate disk information: available space and approximate capture length available according to remaining disk space.

At any time, the capture can be paused by clicking on the Pause button  . To continue capture after pausing press the Resume button . 

To stop the capture, press the stop button .  The capture window will disappear and the timeline and movie window will remain.

Quick Capture

The quick capture feature is used to initiate capture instantaneously forgoing any save options. By pressing CONTROL+COMMAND+R, capture will start immediately and the movie will be saved in the quick recording folder with a date stamp as the name. This feature can also be accessed in the drop down menu of the red capture button in the capture window toolbar. While this is a convenient feature for rapidly starting capture, it is mainly employed through the remote communications and iCal event captures.

Append Capture

This feature allows you to append a capture to an existing movie. Select Append in the Capture Window Toolbar, then select the movie file you wish to append the proposed capture to, then capture as normal. The new capture will be attached as a continuation of the existing movie.

Update Capture

During capture, a new file is written approximately every 5 seconds, then from these files a continuous reference movie is created on the fly. This automatic update process can be manually made to occur by pressing the update button in the capture toolbar. Pressing update will start a new file. This is useful when exporting movies through the matrix web export.

Note: Pressing the update button does not drop frames during capture.

Communicate

This is a local and remote way of initiating capture. ie. both Client and Server
For use with Remote Communication Coding and Capture only. Refer to the section on page 78 - 86 for details of this function.

Communicate Only

This is a remote only way of initiating capture. ie. Server only
For use with Remote Communication Coding and Capture only. Refer to the section on page 78 - 86 for details of this function.

Capture Preferences

The capture window has a number of preferences which can be set in the capture section of the main software preferences.

- Quick Recording Folder sets the folder where quick capture files will be saved.
- "Close window when recording stopped". This option either closes or leaves the capture window open after capture is stopped

Code Window functions during Capture

During capture, with a Code Window open, you may create instances in the Timeline using capture mode (live capture) or code mode (after capture) or add labels to an instance (after instance has been created). You may also add more buttons or labels to your code window or remove them. Thus you may toggle between capture mode, code mode ,label mode and edit mode without affecting the capture.

Update Code Button
A code button in the code window can be created to update the capture when it is pressed down.

1. Create a new code button in the code window.
2. Name the code button <capture_update>.
3. Set the code button with a lag time. The lag time amount depends on how long the update process should happen after the button is clicked.

A good approach to using the <capture_update> button is to have it activated by another code button with lag time. Set the lag time for the <capture_update> button 1 second longer that the code button that triggers it. When the code button ends its lag, the <capture_update> button will trigger the update process 1 second later.

Synchronizing Sound and Video

When using DV capture devices you may occasionally find inaccurate sound and video synchronization in captured movies.

Most Common Problems that Occur are:

1. The sound is offset by the same amount throughout the movie file.
2. When capturing a long movie, the sound and video synchronization can be good at the start of the video, but the further one goes, the more the sound and video synchronization becomes a problem. In this case the scale of the video and sound is different and is a known problem in Quicktime.

When Do Synchronization Problems Occur?

The problem of the gradual drift is most likely to occur when the pause/resume button in the capture window is not used for extended periods of capture. These buttons start a new video file each time they are used, so they can re-synchronize the video and sound. Using the procedures below may not be very useful in this situation, since there are variable length sections of video and sound and synchronization in one area may lead to slight misalignment in others. Fortunately, the contracting and expanding procedures work best for movies created when the pause/resume button are not used because any drift is constant across a single movie file.

1

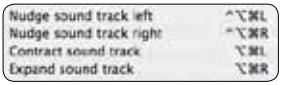
In preferences, under Capture, select "**Equalize video and sound tracks when capturing"**. This will equalize the length of the sound and video tracks during the movie capture process (even if the pause button is used). In general, the sound track tends to be shorter than the video track, so this function attempts to keep them the same length. This setting is turned on as a default.

2

In the main menu bar select Edit > Equalize track times. This can only be done after the movie capture. However, it is not as accurate as equalizing during capture if your movie is made from more than one file. You can choose to make the equalization permanent if your movie is attached to a timeline window. This procedure stretches or contracts the length of the sound track to equal the length of the video track. This feature is also useful for resetting the tracks when you have nudged, expanded, or contracted the sound track and lost a synchronization point altogether.

A. Synchronization of audio that is offset the same amount throughout a movie.

1. Move the timeline cursor to a section in the movie, near the start of the movie that can be used to evaluate the synchronization.
2. Zoom in the timeline, turn on movie loopining.   (in the main toolbar,) and play the timeline movie
3. If the sound is slightly ahead of the video, select Edit > Nudge sound track right (CONTROL+OPTION+COMMAND+R). This nudges the sound track one frame to the left. Hold down the keys to repeat the nudge continuously.
4. If the sound is slightly behind the video, select Edit > Nudge sound track left (CONTROL+OPTION+COMMAND+L). This nudges the sound track one frame to the right. Hold down the keys to repeat the nudge continuously.
5. When you use these features the video and sound will pause, move in



the direction specified and resume play. If the video is attached to a timeline then Studiocode will try to update the movie resource, so the change is permanent.

6. Save timeline.

B. Synchronization of audio that is gradually drifting throughout a movie.

1. Move the timeline cursor to a point near the end of the movie.
2. Zoom in the timeline, turn on movie  looping (in the main toolbar,) and play the timeline movie.
3. If the sound is slightly behind the video, select Edit > Contract sound track (OPTION+COMMAND+L).
4. If the sound is slightly ahead the video, select Edit > Expand sound track (OPTION+COMMAND+R).
5. When you use these features the video and sound will pause, move in the direction specified and resume play. If the video is attached to a timeline then Studiocode will try to update the movie resource, so the change is permanent.
6. Save timeline.

Add Capture Event to iCal

Movies can be captured using iCal events. Follow these steps to set up movie to be captured. This is useful when you are not going to be at your computer when the performance is happening and you want to setup a queue of movies to be captured consecutively.

1. Choose Capture > iCal Capture from the main menu bar to open the iCal Capture window.

2. In the iCal Capture window, choose a date for the event by clicking on the graphical calendar.
3. Set the start and end time using the appropriate controls.
   As a convenience, set the start time and use the slider to set the end time. If a longer end time is required, increase the end time manually.

4. Input a name in the File name text box to be used for the captured file.
5. Press the Add to iCal button in the toolbar.

iCal will launch and a new calendar will be created called Studiocode if one does not already exist.
An event will be added to the calendar using the settings from the iCal Capture window.
The event has a specific naming convention that must used.

`<capture>"MOVIE NAME"`

The movie file name will become the text inside the quotes. For instance, if the file name in the iCal Capture window was "Arrest Simulation", the iCal event will be named, <capture>"Arrest Simulation". The resulting captured file name will be Arrest Simulation.SCpkg. If this naming convention is not used, Studiocode will not capture properly. If you want to rename the event, change only the name between the quotes in the iCal event.
The event will trigger Studiocode to open 1 minute prior to the start of the event. Then using the start and end times set in the event of the Studiocode calendar, the capture will start and end.

Note: Simultaneous events cannot be captured at the same time. Also, if using MobileMe synching and mulitple capture computers, be careful not to sync the same calendars to all the machines.

Delete a Movie

Movie files are generally quite large, so space on your hard drive must be managed and organized especially if you do not have any external storage.

1. Drag the movie package to the trash can in the dock.
2. Make sure Finder is the active by clicking on the desktop.
3. Select Finder from the main menu bar and choose Empty Trash.
4. The Finder shortcut to trash a file is COMMAND+DELETE. To empty the trash, the shortcut is SHIFT+COMMAND+DELETE.

When you delete a movie file, we recommend saving the timeline file, so you can link it back to the movie. Timelines are very small data files, often no more than 20KB. It is a common practice to export the video to a dvd or tape for archiving purposes, then recapture the video and match the coded information back to movie. To do this, create a folder, call it Timelines, then open a movie, click on the timeline window and select File > Save as. Save the file in the Timelines folder. Now, you have your timeline data saved and it can be matched back up to the video at a later date.

Linking Movies

If you want to re-capture a movie and link it to a saved timeline, you need to re-establish the link between the two files.

Link a Re-Captured Movie to a timeline

1.Open a timeline file.

2.Studiocode will not be able to find the original linked movie.

3.Click OK.

4.Use the open dialogue box to locate the movie. This links the re-captured movie with the codes.

5.Save the timeline once the link has been established.

Link another Movie to a Timeline

You may also wish to link more than 1 movie to a timeline. With the timeline open :
1. From the Main Menu select File>Link movie to timeline window.
2. Follow the prompts to link the selected movie to your timeline.

Align Instances after Re-Capturing a Movie – Nudge Right Or Left

When you have re-captured a movie and re-linked it to a timeline, you may find the instances in the timeline don't line up with the relevant parts of the movie.

To correct this:
1. Press SHIFT+COMMAND+R to nudge the instances to the right. This moves all the instances one frame to the right. Hold the keys down to repeat the nudge continuously. The operation will accelerate the longer the keys are held down.

2. Press SHIFT+COMMAND+L to nudge the instances to the left. This moves all instances one frame to the right. Hold the keys down to repeat the nudge continuously. The operation will accelerate the longer the keys are held down.

Using the Mouse to slide and move instances in the Timeline

When importing data from external sources, it is almost always necessary to push the instances around to align them to the movie. There are 4 convenient mouse driven features to accomplish this.

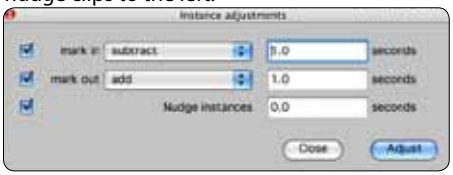
1. Set the playhead at the start point of an instance, hold down CTRL+COMMAND+Z, then click and drag the playhead to point in the video where the instance should start. All the instances in the timeline will move also. In most cases, this should synchronize all instances in the timeline.
2. Sometimes it is necessary to remove gaps between sections of instances in the timeline. This is common if all the movies captured were paused at breaks in the action and the coded data was time was not paused. To removed the gaps, set the playhead to the start time of the first

instance after the gap, hold down CTRL+COMMAND+X and drag the playhead to the left until the instance aligns with the movie.

3. Similar to CTRL+COMMAND+X, the playhead can be set at the last instance's end time preceding the gap, then choose Edit > Remove unused instance time to right of playhead (OPTION+SHIFT+COMMMAND+L)
4. If a mistake is made using "Remove unused instance time to right of playhead", the instances can be nudged back by holding down OPTION+SHIFT+COMMMAND+R. All the instances to the right of playhead will nudged to the right, creating a gap.

Adjust Placement of Selected Instances

Instance adjustments can add or subtract time to any selected instances in a timeline. In the main menu bar, choose Edit > Instance adjustments. Mark In, will add or subtract time from the beginning of an instance. Mark Out, will add or subtract time from the ending of instance. Nudge clips will move the selected instances. Use a minus sign in front of the number to nudge clips to the left.



Click on the adjust button once to make the adjustments that are ticked. The adjust button can be clicked on as many times as required to make the necessary adjustments. It will continuously apply the adjustments.

Remote Communications

A flexible network feature, Studiocode remote communications are designed to provide one or more computers the power to control information on, or share information with, multiple computers during the capture and coding process. It can start, pause, resume, and end capture on client computers over a local area network or even over the Internet.

Remote communications requires networking configuration. We recommend running this feature over a gigabit ethernet network. This will insure that the best possible network environment is in place. Wireless networks can be employed, but suffer from drop out and range problems especially in highly populated areas where there are a lot of mobile communication networks and active devices. For purposes of explaining this feature, we will assume an ethernet network configuration is in place and connected as described below.

Before attempting to network your computers, we strongly recommend consulting the IT department or Sportstec. The networking side of things can be quite tricky as every network is setup a little differently and might have some quirks that could present some real problems.

Server And Client

The key to setting up this feature is understanding the roles of the Server and Client as we define them.

A Server is a computer that sends commands to a Client.
A Client is a computer that executes the commands sent by a Server.
A computer can be both be a Server and a Client at the same time.

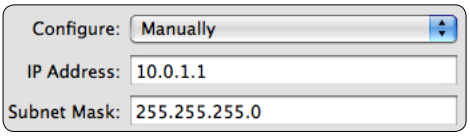
Setting Up a Basic Network

Each computer in the proposed network will need to be configured for this particular network. Each computer will be assigned a static IP address for this network. (If the computers are already part of a network, they will already have a unique IP address, which could be used. If the computer(s) is/are not part of a network, or a new computer is being added to an existing network, ***we strongly recommend*** you seek the assistance of your IT consultant or contact your Studiocode representative before attempting to progress any further.) The IP address can be found in the networking panel of the computer System Preferences.

1. Navigate to the Network Preferences panel:

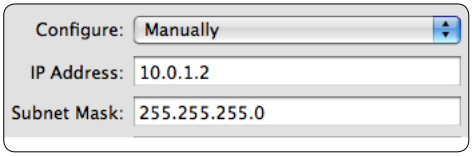
   a. Click on the apple in the upper left hand corner of the screen.
   b. Choose System Preferences... from the menu.
   c. Click on the Network icon in the System Preferences panel.
   d. Click on either "Ethernet" or "Airport" in the list of the Network Preferences panel depending on whether your connection is to be hardwired or wireless.
   Click the "Advanced" button

2. Configure the **Server** computer Ethernet or Airport port to a static ip address.



a. Configure = Manually
b. IP Address = 10.0.1.1
c. Subnet Mask = 255.255.255.0
d. Press the Apply button.
e.

3. Configure the **Client** computer(s) Ethernet or Airport port to a static ip address.



a. Configure = Manually
b. IP Address = 10.0.1.2
c. Subnet Mask = 255.255.255.0
d. Press the Apply button.

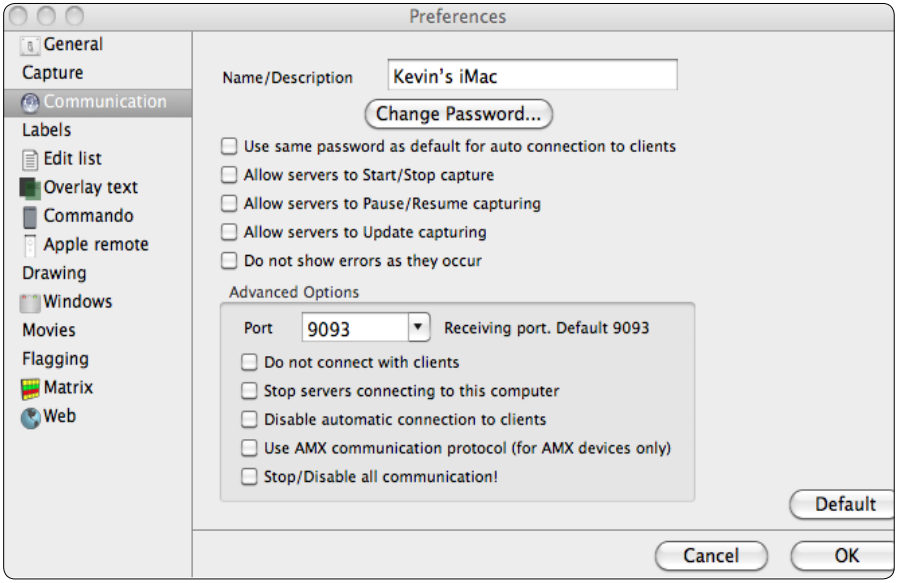
Connect the computers using an ethernet cable if Ethernet is configured.

Network Locations
A handy Mac OS feature is network locations. Locations can be switched quickly to configure the system from one network environment to another.
1. Open network preferences panel in System Preferences.
2. Click on the Location menu in the top of the panel and choose Edit Locations...
3. Add a new location and give it a name suitable for the network environment.

The newly created location will have all the settings that are currently set in network preferences panel. If any changes are made, the changes will be saved for this location.
To quickly switch locations, click on the apple in the upper left corner, choose Location and select the proper network environment.

Preferences for Remote Communication

Open the Communication Preferences by clicking on the Preferences button in the Communications window or by choosing Studiocode > Preferences then click on the Communication icon in the toolbar.



The "Stop/Disable all communications" checkbox option is a universal network security option. This preference is checked by default so when you access the Preference Window for the first time the Preference window will be unavailable. You will be required to uncheck the box and then either enter a password chosen for the network, (for a completely new network,) or enter the password of the existing network. You will now be able to set the remainder of the preferences for your network to operate. See the explanation below regarding this function, but **we recommend that this checkbox be activated when the network is inactive.**

Name/Description

Provide the computer with a name for the network. This is the name that will appear in the Communications window of other computers connected to the network, to indicate whether or not you are connected. Use a name that best describes how the computer will be used eg. Client computer 1 or Server computer. This will make it easier to identify computers in the list.

Password

Set the password and verification field for the computer for this network. NB. This is not a "system password" - it is a password for this Studiocode network only. It is common practice to set all computers in the network to the same password, so the auto connection feature can be used.

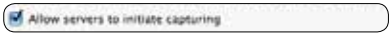
Port Settings

Port settings can be changed here. Studiocode uses 9093 which is a port left undefined by networking standards. When setting up for Internet remote communications, this may be changed to suit firewall rules. Be careful when changing this setting even on a local area network. Changing this could cause serious problems for a network where other services may be running over the same ports. Consult the IT department before changing this number.

Default Password for Auto Connection To Clients

Tick the box next to Use same password as default for auto connection to clients. This will try to connect with clients using the same password that is set above for the computer. A very convenient option to use when there are multiple clients to connect.

Allow Servers to Start/Stop Capturing



Tick this box to allow connected servers to start/stop capture on the computer.

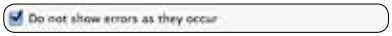
Allow Servers to Pause/Resume Capturing

Tick this box to allow connected servers to pause/resume capture on the computer

Allow Servers to Update Capturing

Tick this box to allow connected Servers to update capture

Do Not Show Errors As They Occur

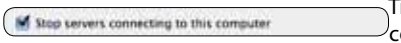


Tick this box to stop the error log from popping up during remote communications. Keep this option ticked unless trouble shooting is required.

Do Not Connect With Clients

Tick this box when the computer will be acting only as a client. The computer will not act as a server and send any commands to any clients. Commonly used when computer is acting as a client only. ***DO NOT CHECK THIS BOX*** if you are a Server computer in the network.

Stop Servers Connecting To This Computer

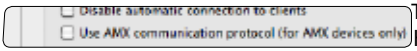


Tick the box to stop all servers from connecting to the computer. The computer cannot be a client when this ticked. Commonly used when the computer is acting as a server only.

Disable Automatic Connection To Clients

Tick this box to stop auto connecting to clients. This stops any attempt to find and connect with clients using Bonjour technology on the network. When this option is ticked, all clients must be added manually.

Use AMX Communication Protocol



The AMX communication is available to users that have an AMX system with the custom protocol code installed on the AMX control system

Remote Communication Security

Stop/Disable All Communication

Tick this box to stop all remote communications. We highly recommend that when remote communications are not being used that this box is ticked. Accidentally starting capture or code button pushing could be very problematic for other computers on the network.

The Communication Window

Open the Communication window by choosing File > Communication window.

Either enter a password chosen for the network, (for a completely new network,) or enter the password of the existing network in the dropdown panel.The function of the dropdown panel is for you to either set or change the communications password for your network.

The communication window is where Client computers can be added, suspended, removed and edited. Errors and logs can be accessed for trouble shooting or basic monitoring. You may also access the Preference panel from here too.

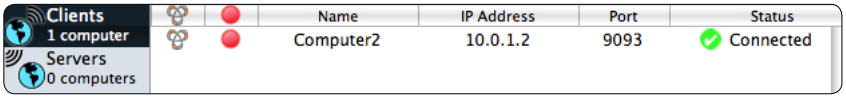
All available and connected Clients and Servers are shown in this window. The number of connected Clients and Servers are shown in the list on the left edge of this window.

NOTE: *If remote communications are required to be sent over the Internet, IT consultation will be a must. This will require a high level of network experience and is a very involved setup. Please contact Studiocode to get more information on setting up remote communications over the Internet.*

Connecting To Clients For Remote Communication

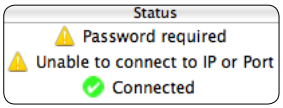
Clients can be added and connected in two ways. Automatically or Manually.

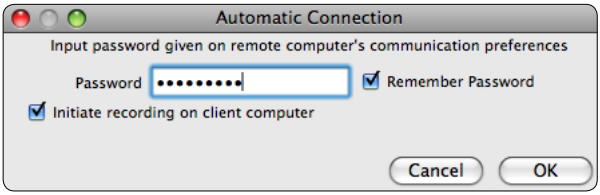
Automatic Connection



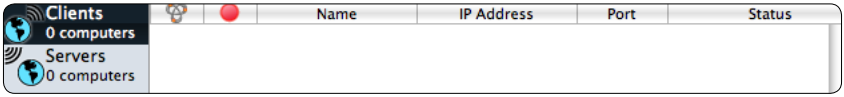
Click on the Clients button in the list on the left of the Communications window. Clients with remote communications enabled and servers with automatic connection to clients enabled will appear automatically in the main list of the communications window. If the default password for auto connect option is set, it will connect automatically too.

The Bonjour icon will appear if connected automatically. If this is not set, then double click on the computer name and set the password in the window. Tick the Initiate recording on client computer if capture needs to be started on the client. A red button will appear next to the computer name when initiate capture is configured. When the client is connected, the status column will report connected other wise it will report password required or unable to connect to IP or Port.

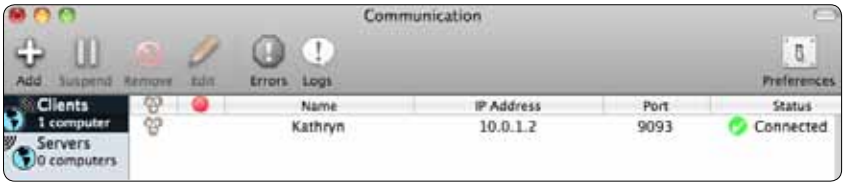




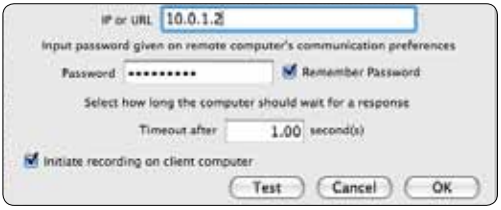
Manual Connection



Manually adding clients is used when no clients are readily available on the local area network or the client is being to connected to over the Internet via a public IP address or VLAN. This allows for all client configuration to take place before connecting to any network.



Click on the Clients button in the list on the left of the Communications window. Add the clients manually by clicking on the Add button in the window. Add the IP address or URL for the client, set the password, then press the Test button to check whether the client is ready to communicate. A timeout duration can be set to better synchronize communication. A longer timeout duration may need to be set if connecting over the Internet or there is heavy traffic over a slow network. When the password is set and the test checks out OK, press OK. If the test does not report back a positive result, the client can still be added. The client will be added in the list of clients. When a client is added in this fashion, the computer name will not appear in the list. Remember to set the initiate capture option if required.



Capturing Using Remote Communication

Once the clients and servers are connected in the Communications window, capture commands can be initiated through the Capture window. Open the Capture window to view or set up the necessary buttons in the Capture toolbar.

There are two capture remote communication buttons in the Capture window, Communicate and Communicate Only. These buttons are not a part of the default of the toolbar set and must be added by customizing the capture window toolbar, (see the capture window section on customizing the toolbar to add these buttons to the capture window.)

The Communicate capture button will initiate a quickstart capture locally (server) and remotely on the connected clients with the initiate recording option checked. All the capture functions in the local capture window: stop, pause and resume will both work on the local (server) capture and the remote (client) captures.

The Communicate Only capture button will only send capture commands to the clients and will not initiate the local capture. The captured files will be found in the preferred quickstart capture folder. They will be named using a date stamp according to the system date. To set the Quickstart capture folder choose Capture > Quickstart set folder from the main menu bar along the top of the screen.

Remote Communication Coding

The most powerful and simple feature of remote communications is the ability to send button push commands from a server's code window to a client's code window. This means that multiple people can be coding on different computers, all feeding information to each other's timeline or into a single timeline over a network. Using the Internet, capture and coding processes can literally be done across the globe.

The button push commands are sent from server computers to client computers automatically when code mode is activated in a code window. There are no configuration settings in the preferences for this feature of remote communications. The only things that are required are the connection to a client and the identical code windows on each computer.

There are a few items to note.

1. Use identical code windows on each server and client. Remote button pushing is when a server code window sends the push command to the matching client code window. The client computer locates the button to be pushed down and pushes it down. If the same code window is not open on the client computer, no buttons will be pushed down, so no instances will be created in the timeline of the client computer.
2. Multiple windows can be open at one time. It is a good practice to break down a single large code window into multiple smaller ones. This can make the coding process focused and accurate for the people coding.
3. Do not set the same hotkeys for multiple windows. When multiple code windows are open, the hotkeys may push down the wrong buttons if the same ones are set in the buttons of the windows.
4. Capturing does have to occur locally on a server computer. Connect to a capturing client with the same code window open, open the same code window on the server and activate code mode. The button pushes will start on the client even though the server is not capturing.

Imagine 20 or more people could be viewing the same event, coding on separate computers in different geographical locations while all the data is being pushed into one capturing client. The possibilities for this feature are endless...

Part 4 - Review / Analysis

Movie Playback

Playing a movie is easy, you can go to any part of the movie whenever you like with a click of the mouse. You'll be there instantly, no need to fast forward or rewind.

Playing any Movie

There are five ways to play a movie:

1	2	3	4	5
Click on the play icon on the main tool bar.	Double click on the movie window.	Press the SPACE BAR on the keyboard	Press the UP ARROW on the keyboard.	Press CONTROL+L on the keyboard.

Pause any Movie

There are five ways to pause a movie:

1	2	3	4	5
Click on the pause icon on the tool bar.	Click on the movie window.	Press the SPACE BAR on the keyboard.	Press the DOWN ARROW on the keyboard	Press CONTROL+K on the keyboard.

Note: With a roller mouse place your cursor over any movie window and roll up or down to play or pause movie playback. With two finger scrolling turned on, put two fingers on the track pad and push fingers up to play and pull fingers down to pause movie.
Change the playback speed of a movie by holding down COMMAND, place the mouse over the window and two finger scroll on the track pad or use the wheel mouse.
The state of play, whether the movie is paused or playing, will re-engage after any rewind or fast forward action.

View the Movie Frame by Frame

There are two ways to view a movie frame by frame:

1. With the movie paused, Press the LEFT or RIGHT ARROW keys to view the movie frame by frame.

2. Click on the Step Forward/Back Button on the main tool bar. 

Play a Movie in Slow or Fast Motion

1. The tool bar has a speed slider, click and drag the sliding indicator to the speed you require. All movies will be played at this speed. 

2. Press and hold the LEFT or RIGHT ARROW keys

Go to a Specific Part of the Movie

There are three ways to go to a specific part of the movie:

1.  Drag the playhead in the timeline to the required point in the movie.

2. Use the Fast Forward or Fast Rewind Buttons on the main tool bar. 

3. Press the RIGHT or LEFT ARROW keys to move the playhead though the movie.

Movie Playback Keyboard Control

Once a movie is created or linked to a timeline, you can use many key combinations to play it at different speeds.

- UP ARROW plays the movie.
- DOWN ARROW stops the movie.
- RIGHT ARROW moves the movie forwards by 1/10 sec frame by frame. Hold it down for continuous slow motion movement forward.
- LEFT ARROW moves the movie backwards by 1/10 sec frame by frame. Hold it down for a smooth rewind action.
- HOME moves the playhead to the beginning of the movie.
- END moves the playhead to the end of the movie.

Pressing the modifier keys; COMMAND, SHIFT, OPTION, & CONTROL plus LEFT OR RIGHT ARROW will move the playhead at different increasing speeds. Another way to move the playhead around is press CONTROL+L, CONTROL+K, or CONTROL+J. CONTROL+L will play the video forward, each time it is pressed the movie will play faster. CONTROL+J works the same way, but in reverse. CONTROL+K will pause the video.

Creating Instance Movies

You can create an instance movie in the timeline from:
· A single instance.
· All instances in a single row chronologically.
· Selected instances across multiple rows chronologically (Merge rows).
· Sequential rows in order of row number and the selected rows (Sequential rows).
· Selection order in a single row or across multiple rows (Selection order).

Play a Single Instance

1. Double click on the instance in the timeline or select an instance and press the Make movie button in the timeline tool bar.

Play All Instances in a Single Row

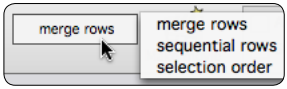
1. Select the row of instances by clicking on the row num
2. Click on the Make movie button in the timeline tool bar. All instances in the row will play in chronological order. Alternatively, after selecting the instances, press OPTION+COMMAND+M on the keyboard to create the instance movie.

To make it even easier, double click on the row number and an instance movie will be created from all the instances in the row.

Merge Rows, Sequential Rows, and Selection Order

There are 3 different ways to play instances across multiple rows by changing the make movie method in the timeline. By default, Merge rows is selected. To change, click on the square button in the upper left corner of the timeline window. Remember to press the Make movie button or use the shortcut OPTION+COMMAND+M.

Merge Rows



Merge row creates instance movies in chronological order of the timeline. When multiple instances are selected in different rows, the merge rows feature will merge the instances and create chapter markers where instances overlap.

1. Hold down COMMAND to select multiple rows. Select the row of instances by clicking on the row number.
2. Click on the Make movie button on the timeline tool bar. The instances will play in chronological order, alternatively use the shortcut OPTION+COMMAND+M.

Sequential Rows

Sequential rows creates instance movies in row order of the timeline for all selected instances. When multiple instances are selected in different rows, the sequential rows feature will start from the lowest row number and proceed to the highest row number. All instances in each row will be played in chronological order.

1. Organize the timeline rows by dragging on the row number.
2. Select the Sequential rows feature in the timeline.
3. Hold down the COMMAND key and click on the row number to select multiple rows.
4. Click on the Make movie button on the timeline tool bar. The instances will play according to their row order.

Selection Order

Selection order creates instance movies in the order that instances are selected in the timeline.

1. Select the Selection order feature in the timeline.
2. Hold down the COMMAND key and click on the instances in the order you want them to play in the instance movie. As each instance is selected, it is labeled with a number [1], [2], [3]...
3. Click on the Make movie button on the timeline tool bar. The instances will play according to their selected order.

Presenting Instance Movies

Any timeline movie or instance movie can be presented in full screen.

Present a Movie in Full Screen

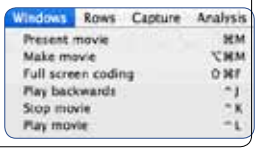
There are three ways to present a movie in full screen:

1. To play the movie in full screen presentation mode, select the movie window, and press the COMMAND+M keys on the keyboard.

2. On the main tool bar, click on Present movie button.

This will present the movie full screen.

3. Select Windows from the main menu bar and choose Present movie.



Stop Presenting a Movie in Full Screen

To stop presenting a movie in full screen press the ESC key on the keyboard.

Loop Instance Playback

Looping an instance repeats it continuously

1.On the main tool bar, select the Loop button. It will change from  to  .

2.Double click on the instance to play it. ..

NOTE: When the looping feature is turned on, the timeline movie will loop also. If the timeline is zoomed in, it will loop within the zoomed range.

Adjust the Movie Volume

1. On the main tool bar, click on the Volume button.  Drag the control button to the desired volume.

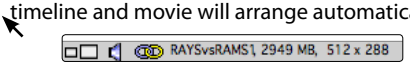
2. In an instance movie, click on the speaker icon in the bottom left of the movie window. Drag the control button to the desired volume.

1. Use the Function keys on the keyboard to increase or decrease volume.

Resize Movie Window

1. Select the movie window.
2. Choose Reduce movie size or Increase movie size from the Windows menu in the main menu bar, or use the shortcut keys, SHIFT+COMMAND+ <key , or SHIFT+COMMAND+ >key.

Note: A timeline movie has 2 rectangle icons in the bottom left of the window. These can be clicked to change the movie size also. If CONTROL is held down when these are clicked, the timeline and movie will arrange automatically.



Exporting Movies

DV Video Export

If a movie is in the DV format, then you can export using the DV export feature in the main tool bar. This will export the selected movie to a camera or an analog/digital convertor. If the movie is in a different format like MPEG-4, it will not export to the external devices.

1. Create the instance movie you wish to export.
2. Select the instance movie, so it is the active window.
3. Set your device to accept digital input.
4. Click on the Export to... button in the main tool bar. If the movie is exporting properly, the arrow in the icon will change from yellow to red. The video will appear in the camera or the device connected to the convertor.
5. Play your instance movie. If you are exporting to a tape recorder or DVD burner, queue the movie to the beginning on the computer, press record on the recorder or burner, then hit play on the computer. For presentation, you can use all the fast forward, fast rewind, frame by frame, and slow motion features. If you switch instance movies, press the "Export to" button again to begin exporting.

Video Out Export

When movies are not DV format, the only way to export full screen video to a recorder, burner, or projector/tv monitor is to use the video out port of the Apple computer. Plug in the external device using the DVI, Mini-DVI, or Video Out port on the computer. You may need to use a convertor cable to match the input of the external devices. With the hardware connected, follow these steps to enable the video to be exported.

1. Open the Display preferences in the System Preferences of the computer. Click on the blue apple in the upper left corner of the screen, choose System Preferences from the menu.
2. Click on the Displays icon in System Preferences.
3. In the Display preferences, click on the detect display button. This will export the desktop to the external device. The image will appear on the external device.
4. There are two ways to export using the display settings. The first is mirroring the desktop, so that what is on the main screen of the computer is presented. There is a check box in the display preferences that will turn mirroring off or on. The second is extended mode where a secondary monitor is available to use as another screen for video export. The secondary display position can be moved in relation to the primary screen in the display preferences.
5. If mirroring is enabled, the exact image on the computer will be displayed on the secondary monitor. This is a common way to set this up as users tend to lose the mouse on the secondary monitor and find it difficult to manage two monitors especially when they are not side by side. If extending the desktop to a secondary monitor is used, an instance movie when presented in full screen will be exported in full screen to that monitor.

Using Instance Movie Chapter Markers

When an instance movie is created from multiple instances in a timeline, each instance in the instance movie is marked by a chapter marker. There are two ways to jump through the chapter markers.

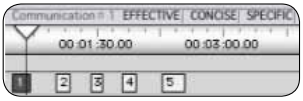
1. In the instance movie, press the TAB key to move forward to the next chapter marker. SHIFT+TAB moves backwards to the previous chapter marker.
2. Click and hold on the chapter menu in the bottom right corner of the instance movie. A drop down list of chapter markings will appear. Click on the instance you want to view.

NOTE: A similar feature is in the timeline. Select a row of instances, press CONTROL+TAB to jump to the beginning of each instance. SHIFT+CONTROL+TAB will move to the previous instances.

Viewing Text Labels In An Instance

Text labels within an instance can be viewed in two ways.

1. Hover the mouse cursor over the instance in the timeline, the text labels will appear in the strip above the playhead bar.



2. Open the Edit labels window by selecting Edit instance labels... from the Edit menu in main menu bar. Click on an instance and the labels will appear in the Edit labels window.

Manipulating Movies

Closing Movie Windows

The most basic movie operation aside from opening a movie is closing one. To close a movie window, press the red button in its window bar. However, a more convenient way to close movies is to use the shortcut, COMMAND+I. This shortcut closes all open instance movies instantly. When analysing instances from the timeline, a lot of instance movies can be open at one time; clicking on the red button to close them all can take awhile. Using this shortcut, makes this a lot quicker. This function can be found under the Windows menu, Close all instance movies.

Movie Window Sizes and Proportions

One of the more basic manipulations of a movie is to change the size. Studiocode changes the size based on halves of the original movie size. The change a movie window size, press COMMAND+SHIFT+ on the keyboard to increase and COMMAND+SHIFT+, to decrease. The same function can be found under the Windows menu: Reduce movie size and Increase movie size. In the menu, the shortcuts for this are COMMAND+> and COMMAND+<. > and < are inputted by holding down SHIFT+. and SHIFT+,.

To reset the movie window to its native size, choose Windows > Natural movie size menu item.

Movie proportions can be changed by using the: Movie proportions 16x9, Movie proportions 4x3 and Movie proportions - native. Using these features will either stretch or shrink the movie window according to the movies aspect ratio. It is usually very obvious when these settings should be used. If a movie's aspect ratio is 16x9 and the movie window is set to 4x3, objects in the movie will appear to be thinner that they naturally might appear to the human eye in real life. If the movie's aspect ratio is 4x3 and the movie window is set to 16x9, objects will appear wider than they might actually appear in realy life.

Overlay Two Movies

Using the overlay feature you can take two instances and put them on top of each other to analyse the differences in the movies.

1.Create two separate instance movies.

2.Choose Overlay instance movies from the Windows menu in the main menu bar or press the shortcut OPTION+COMMAND+Y.

Align Two Overlaid Movies

1.Create the overlaid movies as above.
2.Press the SHIFT+OPTION keys, click in the movie frame and drag the top movie to align the area of interest with that of the second (lower) movie.
3.When you play the movie the top and lower movies will stay in this aligned position.

Change Transparency Level of Movie Windows

Choose Reduce transparency or Increase transparency from the Windows menu in the main menu bar. Use the shortcut keys CONTROL+OPTION+9 or CONTROL+OPTION+0, by pressing these repeatedly you can vary levels.

Flip an Instance Movie

1.Create an instance movie.

2.Choose Flip movie horizontally from the Windows menu in the main menu bar. The movie frame will be flipped horizontally.

Stacking Instance Movies

"Stacking" is the process of projecting more than 1 movie in the movie window at the same time. Two or more instance movies can be stacked in various configurations in one movie window. The only limiting factors to how many movies can be stacked are the computer's screen size and speed. Each viewing angle in the stack movie can be moved around the stack. The stack configuration can be changed; 1x2, 2x2, 4x1, etc. Any viewing angle in the stack can be zoomed and the other movies in the stack are hidden from view.

1. Open a timeline with some coded instances. Find three similar instances to view and make 3 separate instance movies from each one.
2. Set the playhead on each movie to a point at which all three movies will be in sync. This might be one second prior to a particular event.
3. With all the sync points set in each instance movie, press COMMAND+Y or choose Stack instance movies from the Windows menu in the main menu bar.
4. A stacked movie will open up with all three instances in a 3x1 configuration.
5. To change the stack movie configuration, press CONTROL+COMMAND and click in the stack movie window. Select 1x3 or 3x1 from the pop up menu.
6. To move a viewing angle location in the configuration, press down COMMAND and click and drag the viewing angle to another location in the window.
7. To zoom an individual angle, press OPTION+COMMAND and double click on the angle in the movie window. Use the same procedure to zoom out to viewing all angles at once or press the stack movie button . The keystroke and mouse clicks work in full screen also.

To make viewing angles in the stack easier and avoiding constant rewinding of the movies, there are some playback features built in.

For an instance movie with chapter markers.
1. If the movie is playing and it is zoomed, the movie jumps back to the previous chapter marker.
2. If the movie is stopped and it is zoomed, the movie only changes views and does not jump.

For an instance movie without chapter markers or a timeline movie.
1. If the movie is playing and it is zoomed, the movie jumps back 10 seconds by default. This time can be adjusted in the movies preference panel.
2. If the movie is stopped and it is zoomed, the movie only changes views and does not jump.

NOTE: If you wish to use this feature, we recommend using the most powerful computer that is available. When stacking 4 or more DV movies together, plan on using a desktop computer not a portable. Playing multiple movies simultaneously is very cpu and hard disk use intensive.

Stacking Timeline Movies

Multiple timelines can be stacked to create a single timeline and linked stack movie. After capturing and coding multiple synchronous camera angles of an event, each timeline can be merged into a single stacked timeline.

Stacking timelines merges all the coded instances in the timelines that are being stacked. If the same rows exist in each timeline, the instances and rows will be merged into one in the new timeline.

Stacking timelines requires synchronous video. So, it is important that all captures are continuous through the whole event. Pausing and resuming capture will cause the movies to be out of sync. We recommend starting capture 1-2 minutes prior to the start of the event. It is also a good idea to capture audio.

Audio is a great way to find the synchronization point of a movie. If all cameras are not pointed at the same thing when the event starts, audio can provide solid clues to find a worthy sync point.

Stacking timelines is basically the same process as stacking instance movies.

1. Close all windows except for the timelines and movie windows that are going to be stacked.
2. Find the sync point in each timeline and position the playhead on each timeline to that point. It is a good idea to move the playhead back a couple of seconds by pressing OPTION+LEFT ARROW on each timeline after setting the sync point. This will give a little extra movie time prior to the first event that might need to be coded.
3. Choose File > Stack timeline movies.
4. Name the file and save it. Remember to check what type of package is being created when you save. Standalone, reference and compressed are all options. We recommend creating a reference package first, so the results can be checked quickly. Do not delete the original movies until you have saved it as a stand alone package.

When saving standalone packages, check the file size, stacked timelines can create some very large files.

Stack Movie Zooming

The stack can be zoomed in a Timeline, Instance, or full screen movie.

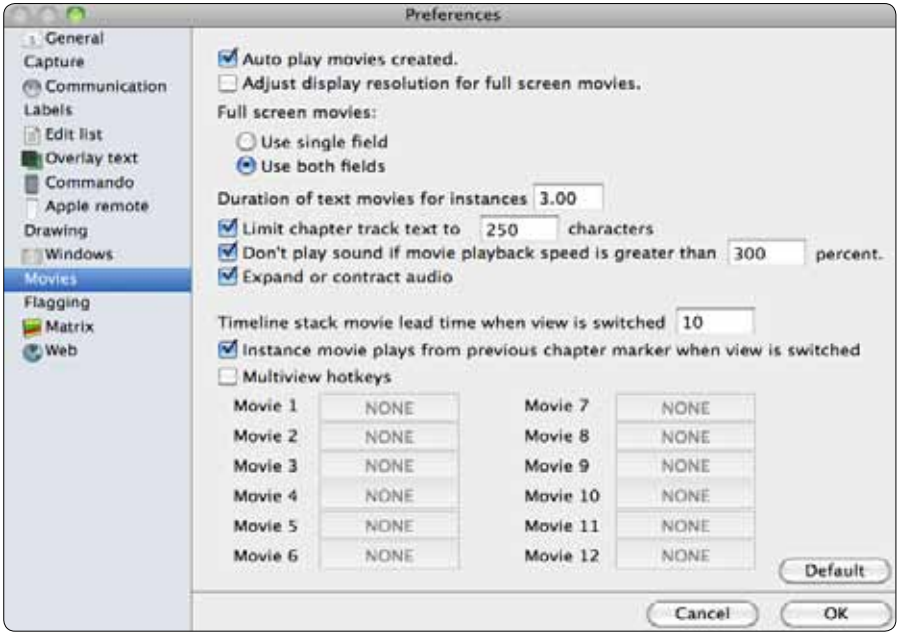
- Hold down OPTION+COMMAND and double click on the view you want to zoom in, all other views will be hidden until you zoom back out.
- To zoom out back to the stack, press OPTION+COMMAND and double click on the zoomed in view.

Multiview Hotkeys can be configured so the zooming can be done by pressing keys on the keyboard.

1. Access the Preferences for Multiview Hotkeys in the Movies panel of the Studiocode Preference. Choose Studiocode > Preferences, then press the Movies Icon In The Toolbar
2. Tick the Multiview hotkeys tick box to turn the feature on, then set the Hotkeys for the switching.

There are 12 possible views available for zooming using Hotkeys.

- Click in the empty buttons to the right of the Movie numbers. Then press a key on the keyboard to set the Hotkey.



When a stack movie is open and a multiview Hotkey is pressed the view will zoom. To unzoom back to the stack view, press the Hotkey again. This can also be done by clicking on the grid icon in the top of the movie. The movie views are numbered from left to right, top down in the grid.

Changing Stack movie view locations in the grid

Hold down COMMAND while clicking and dragging on the view. Drop the view in the approximate location of the grid to relocate.

Changing Stack movie grid layout.

Hold down CTRL+COMMAND and click on the Stack movie. Choose the grid layout from the popup menu. If using a right click mouse, hold down COMMAND, then right click on the stack movie and choose the grid layout from the popup menu.

Stack movie Playback Preferences.

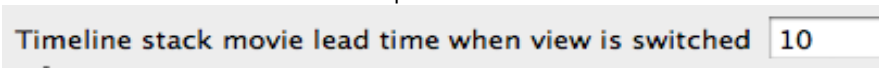
Refer to the Movie Preference Window section on pages 12 - 13.

For an Instance movie with Chapter Markers in a Stacked Movie View.

- If the movie is playing and it is selected. It will expand the view (zoom in) if the view is of all the movies in the stack. It will contract the view (zoom out), if the view is of an expanded view in the stack. The movie time will jump to the previous chapter marker at that beginning of the chapter for both of the view options described above.
- If the movie is stopped and it is selected, (for both an expanded or contracted view), the movie only changes view and does not jump to a chapter marker.

For an Instance movie without Chapter Markers or a Timeline movie.
Note: In the case of an Instance movie, this will be a movie made of a single instance only.

- If the movie is playing and it is zoomed in or out, the playhead will jump back by the number of seconds which have been specified in the Movie Preferences



- If the movie is stopped and it is zoomed in or out, the movie only changes view and the playhead does not jump back 10 seconds.

Making a Movie from a Folder of Movies

Studiocode captures in a series of movie segments, each segment contains a number in the file name: 00001, 00002, 00003, etc. This sequential numbering scheme is also used by tapeless video cameras. So, to make generating a single movie from a series of sequentially named movie files easy, the Make movie from a folder of movies can be used.

Place all the movie files in the same folder, the choose File > Make movie from a folder of movies and select the folder. A reference movie will be created with all the segments together in sequence according to the number in their file name. Save the movie as a standalone or convert it to another format.
This feature is handy if a movie package has been corrupted or when capture has ended unexpeditely. The movie parts can be quickly put back together to create a continuous movie.

Editing Instance Movies

Instance movies can be edited using delete, cut, copy and paste or drag & drop features. By selecting a segment of an instance movie, the segment can be deleted or copied and pasted into another instance movie. NOTE: Editing instance movies does not edit the timeline.

Delete a Segment in an Instance Movie

1. Select a segment in the instance by holding SHIFT and dragging the playhead in the instance movie. As the playhead is dragged, the timeline of the instance movie will fill in with a darker grey color. The darker grey area is the selected portion.

2. Press CONTROL+COMMAND+DELETE to clear the selected segment. Or choose Delete movie segment from the Edit menu in the main menu bar. An instance movie for presentation can be assembled from many different segments of other instance movies.

Copy, Cut and Paste Instance Movie Segments

When an instance movie is created from a timeline, the entire length of the movie is selected by default. If you move the playhead in the instance movie, you will lose the selection. To reselect the whole instance, move the playhead to the beginning, hold down SHIFT, and drag the playhead the entire length of the instance movie.

1. Open two instance movies from a timeline.
2. In the second instance movie, press CONTROL+COMMAND+C. This will copy the selection in the instance movie. If the playhead was not moved, it will copy the entire length of the instance movie. If it was moved, it will only copy the frame that is currently being displayed.
3. In the first instance movie, move the playhead to the end and press CONTROL+COMMAND+V. This will paste the second instance movie segment at the end of the first instance movie.
4. Repeat this process to continue adding segments to the end of the instance movie.

Note: Segments can be pasted into any part of an instance movie. Position the playhead where you want the segment to be inserted and when you copy and paste, it will be inserted at that point. The actions of the Keyboard Shortcuts referred to above may also be achieved from the Edit drop down in the Main Menu .

Drag and Drop Instance Movie Segments

To simplify the process, you can drag and drop movie segments from one instance movie to another.

1. Open two instance movies from a timeline.
2. Position the playhead in the beginning of the first instance.
3. Click and drag from the middle of the movie frame of the second instance and drop into the first instance movie. The first instance movie will highlight with zebra stripes around the movie frame.
4. The segment will insert at the location of the playhead. In this case, that is at the beginning of the first instance.

Combining Instance Movies

A simple way to combine instances in a specific order is to use the Combine instance movie feature. This feature creates a new instance movie from all open instance movies in the order that they are layered on the screen.

1. Open 2 or more instance movies in reverse order for which you want them combined. Create the second instance first, then the first one. This will layer them correctly without having to click on the movie windows to layer them.
2. Choose Windows > Combine instance movies in main menu bar. A third movie window will open that will have both instances in the movie in the order that they were layered on the screen.

NOTE: To add another instance to the beginning or end of the new combined movie, close the first 2 instance movies used to create the newly combined one. Do not close the newly combined instance movie. Open another instance from the timeline, layer it in front or behind the open combined instance movie, then choose Combine instance movies. If the new instance was in front of the combined one, it will be added to the beginning, if it was behind, it will be added to the end. Repeat this process to assemble a full length movie for presentation

Saving Instance Movies

Any instance movie can be saved as a file for presentation, archive, or distribution purposes. So, after editing a movie, you can save your work.

1. Click on the movie that you want to save so that it is the front most window. When saving, the front most window will be selected by the software as the window to save.
2. Choose Save from the File menu in the main menu bar. Alternatively, you can press COMMAND+S or click on the save button in the main tool bar.
3. Select the target save location and name the file.
4. Set the required movie format from the bottom of the save window.

Studiocode stand-alone or MoviePlayer stand alone movie formats create files that contain all the necessary data to view the movie independent of the original movie file. Since stand alone movies contain all the necessary data to be played on its own, they tend to be large files. Stand alone files are required when you wish to share the movie with other people on their computers.

Studiocode or MoviePlayer reference to original movie formats create reference files that point to original movies. Reference movies are very small in size and save very fast as they do not contain any raw video data and thus do not duplicate video data. However, the file must have access to it's original raw movies from which it was created. If you delete the original movie, a reference movie will not play. Use reference movies to quickly assemble an edit, then save it as a stand alone when you are done.

5. Click the Save button to save the movie.

Removing Extra Movie Tracks

There are many types of tracks inside a movie file besides video and audio. Studiocode uses text tracks to display transcription text in the movie window. There are situations where this data needs to be removed from the movie. To do this, open the movie and choose Edit > Remove tracks except video and audio. All tracks not video or audio will be removed from the movie. Save the movie after completing this operation. This cannot be undone, be careful if the data is important such as subtitles.

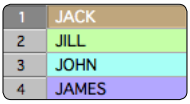
Removing extra tracks can help some third party applications open Studiocode movies files and the vice versa is true for Studiocode. So, if the movie has text appearing in unexpected places, use the feature to clean up the movie tracks.

Multiplying Audio

If the sound track for a movie is too low or high, it is possible to increase or decrease the track's volume. Open the movie that needs the sound track changed, then choose Edit > Multiply audio. A dialog will open where the percentage increase or decrease change can be set. Setting a value above 100% will increase the volume, values below 100% will reduce the volume. Press OK to commit the new setting and save the movie.

Working with Code Rows

Move a Row

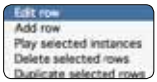


Click and drag from the row number in the timeline.

Select Multiple Rows

1. Press COMMAND and click on the row numbers  you want to select.
2. To select a range of rows, select the top row of the desired range, then select the bottom row while holding down SHIFT.

Duplicate a Row

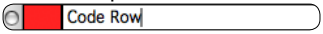


1. Press CONTROL and click (RIGHT CLICK) on the row number you want to duplicate.
2. Select Duplicate selected rows from the drop down menu.

Delete a Row

1. Press CONTROL and click (RIGHT CLICK) on the row number you want to delete.
2. Select Delete selected rows from the drop down menu.

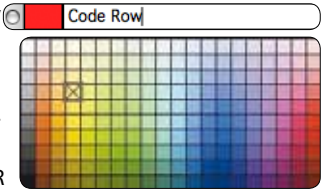
Edit Code Row Names

1. Press CONTROL and click (RIGHT CLICK) on the row number you want to edit.
2. Select Edit row from the drop down menu. This opens the row properties strip.
2. Type in the new name in the text area.
3. Use the arrow keys to move up and down rows or press ENTER to move down rows and SHIFT+ENTER to move up rows. 

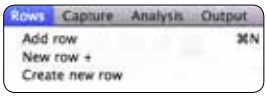
4. Press the ESC key when changes are complete to close the strip.

Change Code Name Colors

1. Press CONTROL and click (RIGHT CLICK) on the row number you want to edit.
2. Select Edit row from the drop down menu.
3. Click on the color chip to the left of the row name
4. Drag into the color palette and choose a new color
5. Use the arrow keys to move up and down rows or press ENTER to move down rows and SHIFT+ENTER to move up rows.
6. Press the ESC key when changes are complete to close the strip.



Add a New Blank Row to a Timeline



Choose Rows > Add row from the main menu bar. The new row will be created below the selected row in the timeline. Alternatively, you can press the New row  icon in the timeline tool bar or press COMMAND+N.

Create a New Row from Selected Instances using New Row +

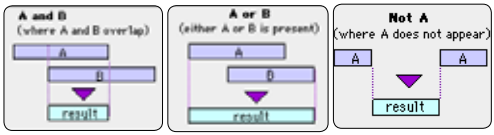
Select the instances that you wish to include in a new row, press COMMAND and select the instances one by one or click and drag in the timeline to select a group of instances.

You can also select rows of instances too. With the instances selected, click on the New row + icon in the timeline tool bar.

Create a Combination of Rows

1. Choose Rows > Create new row from the main menu bar. This opens the Add row window where you can select 2 rows to create a new one using different time intersection options.
2. Name the new row and select where in the timeline to insert it.
3. Click the Combine rows radio button to form new row.
4. In row A, choose the first row you want to use.
5. Choose the operation that will apply to the combination of rows. The type of operation is illustrated in the box at the left of the window.
6. In row B, choose the second row you want to use and click the Create row button.

AND, OR, or NOT can be used as operators. AND will create instances where A and B overlap. OR will create instances from both rows combining where overlaps occur. NOT creates instances where A does not exist.

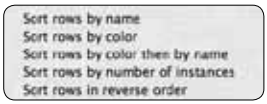


Create New Row Hints

1. For fast alternating dialogue between two people, code one person's half of the conversation, then use the NOT operator, to create the second person's timeline row.
2. When you want to use more than two rows, create a new row from the first 2 rows, then create another row from that row using it as row A and the third row as row B. Repeat this again and again to drill down further.

Sorting Code Rows

Rows can be sorted in a variety of ways, manual dragging up and down being the most common. However, using name and color can automate the process and make organizing the timeline a lot quicker.



Sort Rows by Name

Choose Rows > Sort rows by name from the main menu bar. All rows will sort by alphabetical order.

Sort Rows by Color

Choose Rows > Sort rows by color from the main menu bar. Colors are sorted in order of the palette from left to right descending from lighter to darker. The color palette has 600 colors and each color has an (X,Y) coordinate. White in the upper left most corner (1,20) and the darkest red in the lower right most corner (30,1) define the sorting pattern from left to right, top to bottom.

Sort Rows by Color then by Name

Choose Rows > Sort rows by color then by name from the main menu bar. All rows will sort by color and then within each color sort by name.

Sort Rows by Number of Instances

Choose Rows > Sort rows by number of instances from the main menu bar. All rows will sort according to how many instances are in each row. The row with the most amount of instances will move to the first row. The row with the second most amount of instances will move to the second row and so on.

Sort Rows in Reverse Order

Choose Rows > Sort rows in reverse order from the main menu bar. All rows will arrange in reverse order from top to bottom to bottom to top.

Code Button Colors and Sorting
A great way to make organizing the timeline a quick job is to consider your button colors and how they will affect sorting. Use colors with the X coordinates from 1-30 and same Y coordinates for similar code buttons categories. Then, use descending Y coordinates from 1-20 for grouping different categories. The code window will look like a rainbow, but you can quickly sort the timeline using the Sort rows by color feature. So, Teacher action buttons might range from (1,16) to (30,16) and Student action buttons might range from (1,7) to (30,7). In this example, the Teacher actions will sort to the top of the timeline and the Student actions will sort below them.

Editing Instances in the Timeline

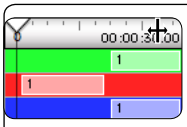
Manually Creating a New Instance

1. Highlight a row by clicking on the code row name or row number. (If there are no code rows, you will need to create a new row. Refer to page 107 "Add a New Blank Row to a Timeline")
2. Position the playhead at the point in the timeline where you want the instance to start or end.
3. Press down OPTION+COMMAND and drag the playhead in the timeline to the required end or starting point.

Note: Using a 2 button mouse, you can hold down OPTION+COMMAND+RIGHT CLICK and drag in any row to create an instance. Pressing CONTROL and clicking activates the right mouse click. So, you can press CONTROL+OPTION+COMMAND and click & drag in any row to create an instance too.

Adjust the Length of an Instance

1



Click and Drag
Press OPTION+COMMAND, position the mouse cursor over the beginning or ending of an instance. When the cursor changes to arrows pointing to the left & right, click and drag the instance to the required length.

2

Instance Edit
1. Select an instance in the timeline.
2. Choose Edit > Instance edit from the main menu bar or press CONTROL+E. A movie window will open with left & right arrows in each of its upper corners.
3. Press the arrows in the direction required to lengthen or shorten the clip. The upper left arrows will adjust the start of the instance and the upper right arrows will adjust the end. The instance will update in the timeline as adjustments are made.

3

Trim
The trim feature can be used to quickly adjust start and end times for a row of existing instances. It is a sequential process: trim start > end > start > end > start and so on. The process starts by setting the first point, if the playhead is set before the midpoint of the instance, it will begin by adjusting the start time to the playhead location. When it is set beyond the midpoint it will adjust the end time. Once the adjustment is made, it will jump to the end time of the selected instance or the start of the next instance.

1. Highlight the instance and position the playhead to the required start time of the instance, not beyond the midpoint or the end point will be trimmed.
2. Press CONTROL+T, the start time will be adjusted and the playhead will jump to the end time of the instance.
3. Position the playhead to where the adjustment of the end point should be made and press CONTROL +T. The playhead will jump to the next instance in the row.
4. Position the playhead for the new start time and press CONTROL+T. The playhead will jump to the end of the instance. Repeat, until all adjustments are made.

4

Instance Adjustments

1. Select an instance or range of instances by clicking and dragging over the instances in the timeline.
2. Select Edit > Instance adjustments... from the main menu bar.
3. Input the time in seconds for the amount to be adjusted.
4. Select whether the time will be added or subtracted from the instance marks.
5. Check the mark in or mark out check boxes to apply the adjustments to one or both.
6. Click the adjust button.

Note: If you make a mistake, simply make the opposite adjustment. If you added 3 seconds to the mark in time of an instance, change the add to a subtract and adjust it back. Adjustments can be made up to hundredths of seconds, so this can make some very finite adjustments to an instance, hardly possible with a mouse.

Delete an Instance

Highlight the instance by clicking on it, then press the DELETE key.

Copy an Instance from One Row to Another

1. Press OPTION and click & drag on the instance you want to copy.
2. Drag it to the new row.

Move an Instance from One Row to Another

1. Copy the instance to the new row by pressing the OPTION and click & drag the instance to the new row.
2. Delete the original instance by selecting it and pressing the DELETE key.

Instance Splitting

An instance in the timeline can split at the playhead intersection by dragging the playhead to point that the instance should be split into two, then choosing Edit > Instance split.

Combining Timelines

Two or more timelines can be combined back to back, so analysis over multiple movies can be performed very quickly. The combine timeline process creates a reference package. A reference package takes up very little space, but remember do not delete the original movies until the project is finished or saved as a stand alone package.

1. Choose Combine timeline movies from the File menu in the main menu bar.
2. Locate the timelines you want to combine.
3. Select and add each one in the order you want them to appear into the new timeline.
4. With all the timelines added, press the Combine button.
5. Name the file and save.

Merging Timelines

There are cases where multiple users have coded the same movie and they must merged together to either compare the results of the coding or combine the results of the coding into one timeline. To do this, use the merge timeline window feature. The key to using this feature is the coding should be done using the same video of an event or possibly another video angle of the same event. This way the codes will synchronize with the video correctly.

Here are steps to merge 2 timelines, however many timelines can be merged at once also.

1. Open 2 timelines that are linked to the same movie or copy of the same movie.
2. Select the rows to be merged in each timeline. Individual instances can also be selected, if there are instances that should not be included in the merged timeline.
3. Choose File > Merge timeline windows
4. A new timeline will appear with the merged rows of instances. This timeline will not be linked to a movie.
5. Choose File > Link movie to timeline window... and select the movie that the original timelines were linked to. The timeline should be saved either next to movie package that it is linked to or be saved inside the movie package.

Databasing Instances

Databasing provides an easy method to group specific coded instances into one timeline. Studiocode creates stand alone databases that hold all the coded information and video data for each instance that is exported to it. Databases are a great way to keep only the information that you code. A neat way to use databases is to create one for each student. As a research project progresses, instances from different movies can be exported into their personal database. By the end of the project, each student has a database of selected instances already made and ready for review.

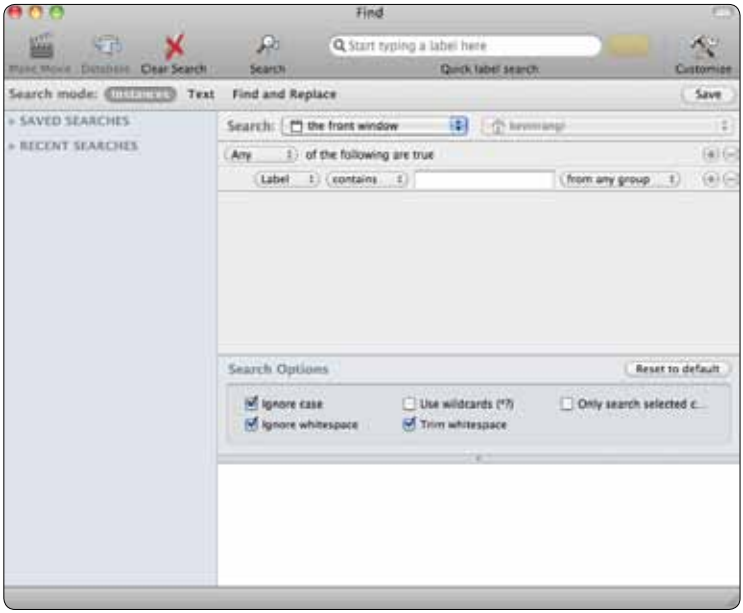
1. Create a new empty database by choosing Database from the File > New menu in the main menu bar.
2. Name the database and save it.
3. Open a timeline with the instances you want to export. Select all the instances to be exported, then press the database button 

in the timeline tool bar.
4. Target the database to export to, and hit the Export to button.
5. Open a second timeline, select instances, and export them into the same database. These instances will append to the database. Continue this process until complete.

The Find Window

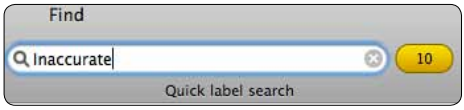
The Find Window provides the capacity to search for metadata in any open window, a folder on the hard drive containing Studiocode files or across a network to a shared location. When used effectively the Find Window will save countless amounts of time particularly in transcription and statistical scripting plus improve the analysis process when creating video based reports across extensive longitudinal data.

Find can be accessed by clicking on the Find button in the timeline toolbar or choosing Edit > Find in the main toolbar across the top of the screen.



Quick Label Searches

The most basic type of search is the Quick label search, just type in the label to be searched for and hit RETURN on the keyboard. This quick label search is conducted on all open timelines. The results of this search are displayed as a number in the yellow button to the right of the text that you have just typed in. Clicking on the yellow button will make a movie of the found instances. This is the quickest way of searching for a particular label.



Advanced Search

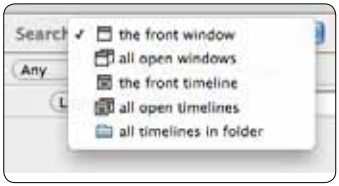
There are 3 search modes in the Find window: Instances, Text, and Find and Replace. These modes apply to specfic file types. Instances mode is designed to search for codes, labels, and transcription text in timelines, transcription windows or movie organisers. Text mode is designed to search through transcription and statistical windows. And Find and Replace works across all file types.

The Find window will open in Instances mode by default. This will likely be the most common mode used. Instances and Text modes work very similar in the way in which the search criteria is setup. Find and Replace work with direct text input while allowing specific windows to run against to be toggled on or off.

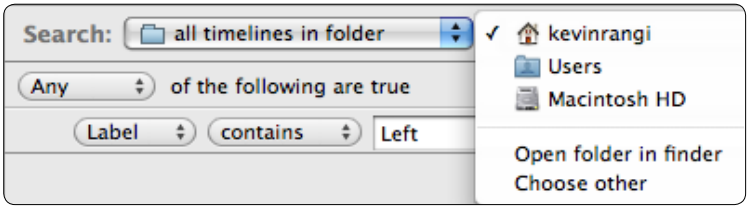
The following sub-sections will cover using the Find window in Instances mode. Following sub-sections will specifically describe the alternate features in the other modes.

Where to Search

The Find window can be targeted to search in specific windows or groups of windows. The search area target by default is the front window. This means the timeline, transcription window or movie organiser that is the top window, no other windows will be searched. Using the all open windows, will target all open windows and return anything found in these windows. The front timeline and all open timelines options will only search in timeline windows specfically.



When selecting all timelines in folder, the target folder that contains the timelines must be set. Click on the following drop down option to choose the folder



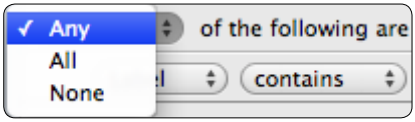
The ability to search across particular folders is incredibly powerful for analysis as it makes conducting longitudinal queries very easy.

Note: When searching across all timelines in a folder, the timelines are then opened behind the Find window based upon your search results. This search option can take a long time if there are hundreds of timelines to search.

Establishing Search Criteria

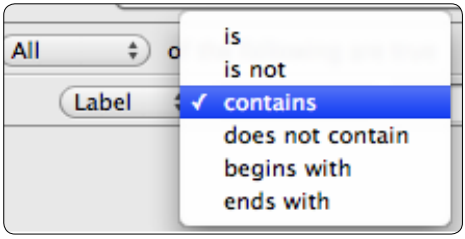
Once the search target has been determined the next step is establish the search criteria Establishing searching criteria for a label is created using the following steps:

1. Select Any, All or None of the following are true from the drop down menu. If any is chosen, each row with criteria set will return the found instances. When all is chosen, only instances that meet all rows of criteria combined will be returned. None will return any instances that do not match the criteria.



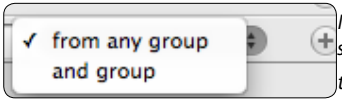
2. The first choice in setting the criteria is the data type. The data types that can be searched are Transcription, Label or Code. In the first drop down menu select Label to start to establish the initial criteria.

3. Establish the operator of the search criteria by selecting from the following drop down menu. As it relates to labels, these options mean:
Is will return labels that contain the exact characters inputted in the search string.
Is not will return labels that do not contain the exact characters inputted in the search string.
Contains will return the labels that have the search string in their names.
Does not contain will return labels that do not have the search string in their names.
Begins with will return labels that have the search string in the beginning of their name.
Ends with will return labels that have the search string in the ending of their name.



4. Input a search string. This is usually the label name or part of the label name. A string is made up of any amount of characters including puncuation and other character types.

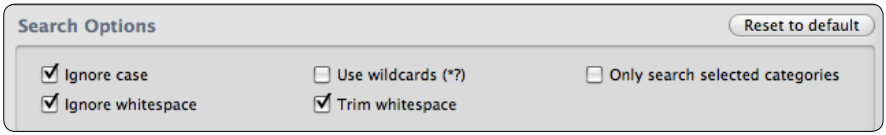
5. Establish the last element in the search criteria row by selecting from the following drop down menu.



Note: Grouping only applies to labels. Further criteria can be subtracted, added, or nested by using the buttons, respectively, to the right of the criteria row.

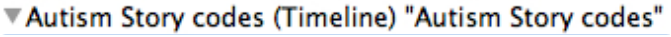
6.The last item to set is in the Search Options section below the rows of the criteria. These options apply to all search strings that was inputted in the rows of criteria.

Ignore case will ignore capitalization. So, Bob will be considered the same as bob.
Ignore white space will ignore spaces between characters. So, Bob Jumped will be same as BobJumped.
Use wildcards, this is a method of pattern seaching. If there were a certain amount of label names that started with B, an asterisk could be used to find these by using B* as the search string.
Trim whitespace will ignore spaces after names. This is helpful if names were inputted strangely.
Only search selected categories will search only selected code rows in a timeline.



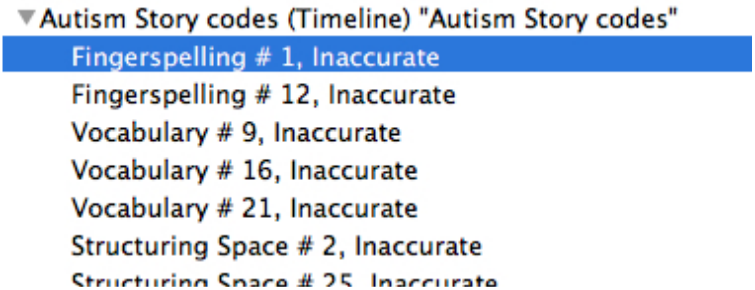
7. With the criteria in place, press the Search button 

in the Find window toolbar. If any instances are found, the results will be displayed in the lower portion of the window with a count of the found instances at the very bottom of the window. Click on the disclosure triangle to reveal all the found instances.



Making Movies From Found Instances

After a successful search, the results can be made into movies by selecting the Make Movie icon or by double clicking in the search results list that is displayed.



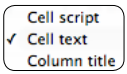
Databasing Found Instances

Searches results can be databased by selecting the instances in the results and clicking on the database icon found in the toolbar.

Text Mode

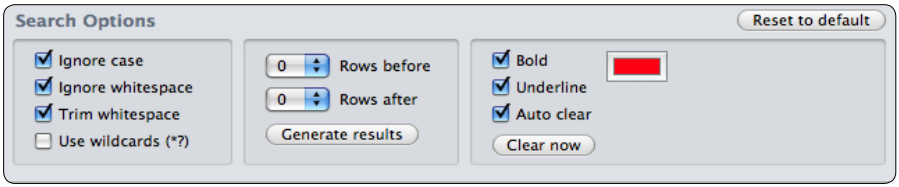
Using text mode is very similar in its way of building up the search criteria to that of instances mode. However, text mode is designed to be used with transcription, statistical windows and label trees, so there are a few different options.

The first difference is the search target, only the front window or all open windows can be searched. This mode will not search a folder of files like instance mode.



The second difference is the data type options; Cell text, Cell script and Column title. These are the onle types of data that can be searched for in this mode. Cell text will look for text that is contained a cell; this could be transcription or statistical output. Cell script will search the script that is attached to the cell. And Column title will search only in a given column name.

The last difference and most powerful aspect of text mode are the search options.

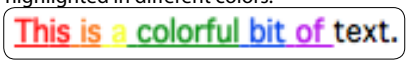


Like the instance mode; Ignore case, Ignore whitespace, Trim whitespace and Use wildcards are available. These are the heavy lifters for searching transcriptions particularly wildcards. Use the asterisk following or preceding a search string to find rows that might contain the data being hunted.

But, the real power of the text mode is the Generate results feature. By clicking the Generate results button, a window with the results will be generated. This work great for pulling out specific rows into a new window. To help keep transcription in context, rows before and after can be set to be included in the generate window. The proceeding and/or following rows will be included in the new window. It is often important in transcription analysis to find out what said before or after an utterance to better understand its meaning.

When simply finding text in a transcription window, any found text will be highlighted in the window using the color chosen in the color well, default is red. Options to Bold or Underline are also available.

To clean up the found text items, click on the Clear now button. All highlighted text will become unhighlighted. The Auto clear option can be ticked which will clean up previously found strings of text. Or, auto clear can be unticked and using the color well, multiple strings can be found and highlighted in different colors.



Find And Replace

The find and replace mode works as most find and replace features work in any word processing software. A string of text is chosen to find, then another is chosen to replace the found text. This window can help to replace misspelled text, change button names in the code window or change scripts in the statistical window. It covers all windows.

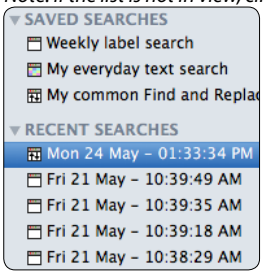
When making replacments to text, it is very important to be careful. Make sure to validate what is being replaced before it is replaced. We recommend following this usage pattern: Add the string to be searched for in the Find text input box, click on the search button in the toolbar and check the results in the bottom of the window, then click on the replace button.
Note: Sometimes a replacement is made and it is impossible to go back. For instance, if "this" is changed to "that", it cannot be changed back because all the existing "that"'s this will be changed to "this"'s.

The find and replacement strings can be swapped around by clicking on the  button. Again, be careful doing this as a lot more items could be changed than were originally intended.

It is very easy to replace something in the wrong window, so it is also suggested to choose the exact window and data type in the search options. Untick or tick the specific items.

Recent and Saved Searches

While searching timelines and other windows, every time a search is done, the criteria is saved in the Searches column on the left of the window. Any search can be easily referenced by clicking on the date-time row in Recent Searches section.
Note: If the list is not in view, click on the disclosure triangle to the left of the Recent Searches text.



When the date-time row is clicked on, the criteria will be loaded and the search can be done again. This does not load previously found data, only the criteria used in the search. This can be saved by clicking on the save button at the end of the Search mode selection row, the criteria will then be saved in the Saved Searches list. The saved search will be given a default name of Saved Search. To rename the search, double click on the name and input the new name.

Search criteria can be saved directly to be used again in the future. This is especially helpful when creating complicated searches. By clicking on the save button at the end of the Search mode selection row, the criteria will be saved in the Saved Searches list. Just as stated above, the saved search will be given a default name of Saved Search. To rename the search, double click on the name and input the new name.

A saved search is saved in the in the search mode context. So, when a find and replace search is saved, when it is selected in the Saved Searches list, the mode will be switched to find and replace. The mode is represented by the saved or recent icon; icon is Instance mode, icon is Text mode and icon is Find and Replace mode.

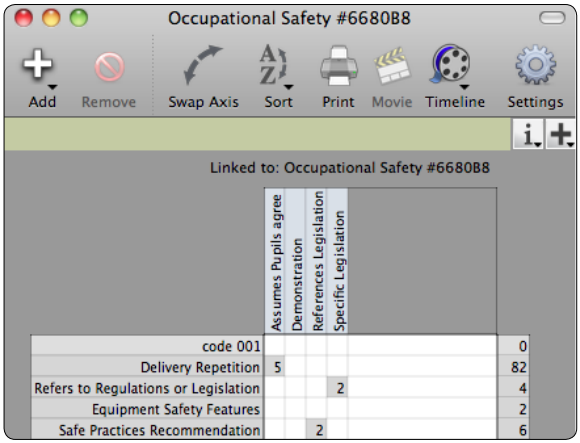
Code Matrix

The code matrix is a two dimensional grid representation of code rows and text labels in a timeline. The rows in a matrix are generated from the rows in a timeline. The columns are the text labels that are coded in the instances of the rows. The cells of the matrix display the instances that have the text label coded in them. The intersection cells can count the instances that have the text labels coded in them or count the amount of the label are found in the instances. By default, the matrix is an instance counter, not a text label counter.

Using The Code Matrix

1. Click on the Matrix button in a timeline or code window.
2. Double click on the row to create a movie for all in the row.
3. Double click on the column to create a movie for all with the text label.
4. Double click on a cell to movie of the intersection instance and label.

The cumulative totals of columns can also be highlighted and These totals represent the total in the timeline from which the was generated. Double click on totals to make a movie.

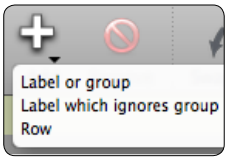


NOTE: When a row name, text label, cell or total is clicked on, the instances are selected in the timeline. The matrix can be used to select instances to paste into a movie organizer or sorter window.

The Code Matrix Toolbar

The code matrix can be easily customized to display specific in depth analysis. Rows and columns can be deleted or added, text labels can be put together using boolean operators: and, or, or not. After customizing a code matrix, it can be saved and opened at another time to use on another timeline.

Adding Columns and Rows



After removing a column or row, you may want to add it again. Add a label by doing the following:

- Deselect all columns and rows by clicking in a cell or in an empty area around the matrix.
- Click on the Add button in the matrix toolbar, this will reveal a menu to select the label or row to add.

- Select the column or row to add. It will be added at the end of the columns or rows.

Note: If a column is selected when you are adding, a combination will result, see the Combining Labels by Adding section below.

Removing Columns and Rows

Any row or column can be removed from the matrix view by selecting it and pressing the remove button on the matrix toolbar or pressing the DELETE key on the keyboard. The row or column can also be removed be right clicking on the name of the row or column and selecting remove from the drop down menu.

Swapping Axis

The matrix view can be swapped, so the columns and rows switch axis. By default text labels are displayed in the columns and timeline rows in the rows of the matrix. By clicking on the Swap Axis button in the matrix tool bar, the text labels will become the rows of the matrix and the timeline rows will become the columns.

Sorting Columns and Rows

Columns and rows can be sorted by ascending and descending names. Click on the Sort button in the matrix toolbar and select to sort by labels, groups or rows. Choosing ascending will sort alphabetically A to Z, descending will sort Z to A. Since rows have color, they can be sorted by color ascending and descending as well. See the Sort Code Rows section of this manual for an explanation of how the color sorting works.

Print The Code Matrix

Click on the print button in the matrix tool bar. Add a title to the matrix by editing the text box to the right of the print button.

Movie

Click on this button to make a movie of selected instances .... either by highlighting a column or row or by selecting specific instances.

Loading Timelines In The Code Matrix

A saved matrix can be used to run against different timelines other than the original one used to create it, this is especially handy when doing comparative or longitudinal analysis. Open the saved matrix and a timeline you wish to load into the matrix, then click on the Timeline button in the matrix toolbar and select the timeline from the list.

Note: If the saved matrix does not contain new labels in the new timeline they will not automatically show up. If you want to add new labels to a saved matrix. Open a new matrix by clicking on the matrix icon in the timeline toolbar, then copy and paste the new labels into the saved matrix. If you are planning on using the matrix to do longitudinal analysis, do not change your code window without updating a saved matrix.

Export

Besides copying the matrix as a table and pasting into another document, the matrix can export an Excel document and a tab-delimited text file. Click on the Export button in the matrix toolbar to access the various exports.

Exporting A Code Matrix To Microsoft Excel
The matrix can be exported as an Excel ready document. The export generates a table for the full matrix. Click on the Export button in the toolbar and select Excel from the menu. Name the file and save.

Exporting A Code Matrix As A Tab-delimited text file
To make using the matrix data available to more third party applications, the matrix can be exported as a tab-delimited text file. This is a common format and easily imported by other applications. Click on the Export button in the toolbar, select Text from the menu, name the file and save.

Matrix Settings

The matrix has 3 settings. These settings are accessed by clicking on the Settings button in the matrix tool bar.

Title

The Title text setting is used when the matrix is printed. This will be the title on the printed document.

Count labels inside of instances

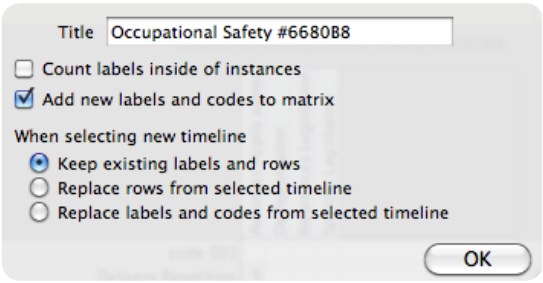
By default, the matrix displays a count of the instances that contain a text label or combination of text labels. It does not count the amount of labels found in the instances. For example, if an instance contains 2 duplicate labels, the matrix will return a count of one. Occasionally for statistical reasons, it is interesting to count the amount of duplicate labels contained within an instance. Counting the labels contained within an instance is done by ticking the "Count labels inside of instances". This will count duplicate labels. So, using the example above, the matrix will now report a count of two.

Add new labels and codes to matrix

By ticking this option, the matrix will dynamically add new rows and columns on the fly during the coding process. This is an important feature during live coding/capture as the matrix can be used to quickly provide counts and video. This process is also important for using the matrix web exports. The web export picks up the changes in the matrix and exports the movies automatically. If this is not ticked, new instances will not be exported.

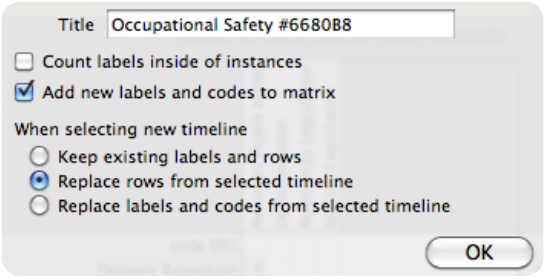
Keep existing labels and rows

Choosing this option will keep the matrix codes and labels static. If "Add new labels and code to matrix" is selected, the new labels and codes will be added to the existing rows and columns.



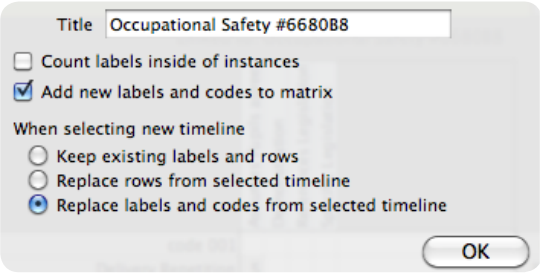
Replace rows from selected Timeline

When this option is selected and a new timeline is loaded in the matrix, the new timeline's code rows will replace the existing ones. This is similar to the matrix organizer behavior in previous versions.



Replace Labels and Codes from selected Timeline

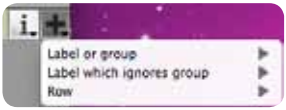
This option will empty the matrix completely and use the newly loaded timeline data. A very rarely used option, but there if needed.



Information Button

This button provides the ability to output an edited matrix it to a printer or to a web page, without the output affecting the original matrix table. Autoname contructs a default name using the combined labels eg. "LabelA and LabelB and Label ...." The naming convention can be disabled using this button and a custom name can be inputted in its place.

Add Button



This button has identical functions to the Add button in the Toolbar.

Refer to the instructions on page 120.

Organizing Rows and Columns

Move rows or columns by clicking on the name and dragging to a new location. Standard cut, copy and paste functions can be used, so you can select a column, press COMMAND+X to cut, select the column to paste after, then press COMMAND+V to paste.

Copy The Code Matrix As A Picture

Using the snapshot feature in Mac OS X, you can take a picture of any image that is displayed. Press SHIFT+CONTROL+COMMAND+4, drag the mouse cursor from of the upper left corner of the matrix window to the bottom right corner, then let go. A shutter sound will be heard indicating that the picture has been copied to the clipboard. Press COMMAND+V to paste the picture. A snapshot of the matrix can be pasted into a Word document or any other text editor that accepts images.

Copy The Code Matrix As A Table

A selection of cells or the whole matrix can be copied and pasted or dragged and dropped into an open spreadsheet or text editor. Select the rows and columns or cells by holding down COMMAND or select the whole matrix by pressing COMMAND+A. To copy and paste, press COMMAND+C to

copy the cells, then press COMMAND+V in the target document. To drag and drop, you must select the row and/or column name to drag from then drop in the open spreadsheet or text document.

Create A New Code Row In The Timeline From A Text Label

1. Select a column in the matrix by clicking on the text label column header.
2. A new row can be created from the matrix by pressing CTRL while clicking on the selected text label column header. Select Make Timeline row from selected cells. This will create a new row in the timeline with a row name of the text label.

Duplicating Columns

Columns can be duplicated by holding down OPTION and clicking and dragging on the column name, then drop into desired position. Another way to duplicate is to right click on the column and choose duplicate from the menu. Also, you can copy and paste to duplicate. Duplicating columns is most often used when creating label combination columns.

1

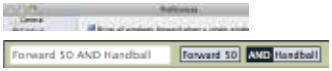
Select the label you want to combine with another label. Press the Add icon in the toolbar and select the label from the menu.

2

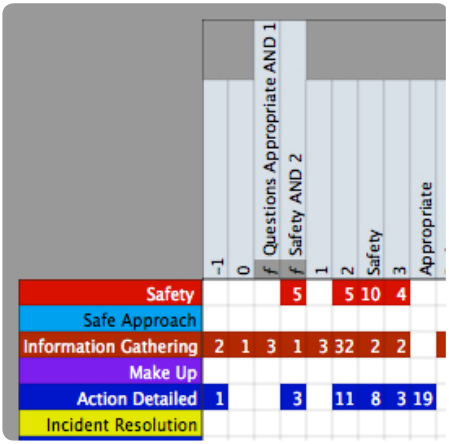
Select the label you want to combine with another label. Right click on the "Add " button and choose a label from Add > Label or Group menu.

3

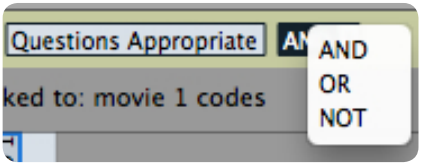
Select the label you want to combine with another label. Drag the label you want to combine with the selected label to the combination bar. The combination bar is located immediately below the toolbar.



Combining Labels



One of the most powerful features of the matrix is labels can be combined using boolean operators: AND, OR, and NOT to count different combinations of labels that may exist within an instance.



There are many ways to combine labels together. When labels are combined the label name will display *f* at the beginning of the label combination. The default boolean operator is AND when a label combination is made.

Changing the Boolean Operator

The default operator is AND while this is the most commonly used operator. There are times you will want to change this especially when trying to exclude certain labels. The operator can be changed by clicking on the operator between two labels in the combination bar below the toolbar. In most occasions the operator will be AND. After clicking on the operator to expose the menu, select AND, OR, or NOT.

AND will count those instances that contain the combination of labels.
OR will count those instances that contain either of the labels in the combination.
NOT will count those instances that contain the first label and not the following label.

Note: A good approach to using this feature is to duplicate a label several times, then add a different label to each duplicate to check for existence of the combination. This demonstrates the real analysis powers of the matrix and is what it was designed to do.

Saving The Code Matrix

Organizing the matrix and making various label combinations to produce the desired outcome is the key to using the matrix to the fullest. Once this work is done, it important to save it, so it can used to run against other timelines. Choose File>Save or press COMMAND+S to save the code matrix. This file can opened later and used to analyze the data in another timeline.

Resetting The Code Matrix

After organizing the matrix by deleting columns and rows and making new combinations, you may want to revert to the original matrix. To start from scratch, simply open another matrix by clicking on the matrix button in the timeline toolbar, all possible rows and columns will be loaded from the timeline into the matrix.

Movie Organizer

The Movie Organizer is a presentation creation tool designed to organize and edit instances. Instances can be dragged around to change the order or they can be trimmed using the instance edit window. A movie organizer can be saved and reopened for future presentation or editing. A movie organizer window can be opened in two ways.

The first is : Choose File > New > Movie Organizer.

The second is to use the shortcut keystroke, press COMMAND+OPTION+V to paste into an organizer. This will open a new movie organizer if one is not already open. If an organizer is open, then the instances will be pasted in the open movie organizer window.

Paste Instances Into The Organizer

1.Click, drag and drop selected instances into the movie organizer.
2.Select an instance or multiple instances, and press COMMAND+OPTION+V.

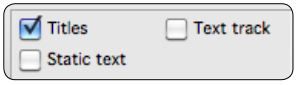
3.To place an entire row into the movie organizer, select the row by clicking on the row name, press COMMAND+OPTION+V. Hold down COMMAND and click on multiple row names to select multiple rows of instances.

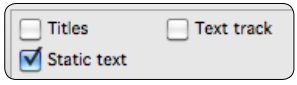
Playing Instances In The Movie Organizer

All Instances can be played by clicking on the Make Movie Button at the top of the movie organizer. All Instances associated with a row can be played by double clicking on the row name. An individual instance can be played by double clicking on it in the movie organizer window.

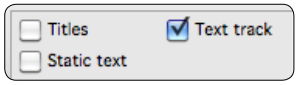
Make Movie Options In The Movie Organizer

By selecting Titles, the row name will appear as a title frame before the corresponding instances for the row are played. The number of instances are displayed diagonally with thumbnails in the title.





By selecting Static text, each instance's associated text descriptors will be displayed in a static title before each instance. A static movie will play for the default duration of text movies set in the Studiocode preferences.



By selecting Text track, a text track will be displayed at the bottom of the instance movie with the text showing in the text track.

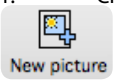
Changing Row Name In Movie Organizer

- Row characteristics such as row name and color can be edited by right clicking on the row name in the movie organizer and selecting edit row from the popup menu.
- Changing the row name for a title row will change the text in the title that is created.

Editing Instances And Movies In The Movie Organizer

- To move an instance to another row, click and drag instance to desired location.
- To create a new row click on the new row button in the movie organizer tool bar.
- To include or exclude rows from operations, select or deselect the tick box.
- To edit the in or the out point of an instance, select the instance and press the CONTROL+E keys. This will open the instance edit window. Make changes by pressing the arrows in the upper corners of the instance edit window.
- To delete any instance, highlight the instance and press the DELETE key.
- To drag and drop instances between movie organizer windows, select multiple instances in a movie organizer, hold down COMMAND+OPTION, click and drag from the selected instances and drop into another movie organizer window.

Paste A Picture From The Clipboard Into The Movie Organizer



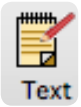
1. Click on the new picture button in the Movie Organizer tool bar, this will create a new picture row in your Movie Organizer.
2. In the new row click on the white box and paste in your picture.
3. Drag the picture row to the row above the clips you want it to show before.

Note: When a picture is pasted into the movie organizer it is scaled to the full movie size. Drag the bottom of any picture to resize the row. Pressing SHIFT+COMMAND and dragging the bottom of any picture will simultaneously alter the size of all picture rows.

Changing Labels with the Labels Tree Pop-up Menu

The labels tree pop-up menu can be accessed by right clicking on an instance. The labels tree pop-up menu is created from all the labels found in the movie organizer window. If new labels need to be added, open a new labels tree window, add the labels to the new window, then right click on the instances to add the new label or any timeline label tree or previously saved labels tree window can be opened and used.

Adding Text



Instance notes can be added to individual instances. Select the instance and press the Text button in the movie organizer tool bar. Type the text into the Text window. Close the window to save the text or select another instance to add text to.

Save A Movie Organizer

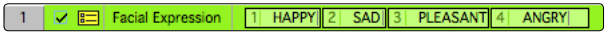
Choose File > Save, File > Save as..., or press COMMAND+S. The Movie Organizer will be saved as a file with this icon.

Database Instances from a Movie Organizer

Select the instances you want to export to a database and click on the database button in the movie organizer tool bar.

Instance Sequencer

The instance sequencer presents a list of the instances within a row of a movie organizer. The order of instances can be arranged by dragging the rows up or down. Instance labels and duration can also be edited.



Open the instance sequencer for a row by double clicking on the yellow sequencer icon to the left of the row name in the movie organizer.

Play and Edit Instances in the Instance Sequencer

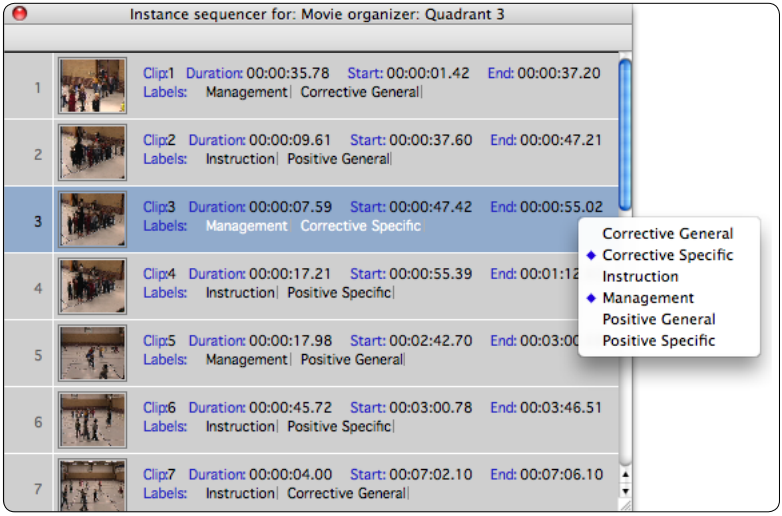
Double clicking on a row will open the edit instance window, the instance can be viewed or edited. To play or edit another row, single click on the row and the edit instance window will update the changes in the last row and move to the new selection. Close the edit instance window by clicking on the red button in upper left corner of the window.

Delete Instances from the Instance Sequencer

Select a row and press the DELETE key.

Editing Labels in the Instance Sequencer

The labels popup menu can be accessed by right clicking on a row. The labels in the pop menu that are displayed will only be those labels from the movie organizer row. Open a saved label tree to add new ones or open the timeline and press the labels button.



Transcription Window

The transcription window is a spreadsheet-style coding and analysis tool. It is a powerful combination of a code window, movie organizer, text window and even the statistical window. In the transcription window, spoken words and phrases can be coded and transcribed, instances can be trimmed, labels can be added or removed plus full presentations can be organized. Rows can be automatically sorted by movie time references, alpha-numerically, or frequency of occurrence according to data in the cells of the columns. And after all the transcription work is complete, presentations can be arranged and a movie can be created. It, also, includes powerful find, replace and generate results features.

Open a new transcription window by choosing File > New > Transcription window from the main menu.

Transcription Tool Bar

The print button will send the document to a printer or a pdf can be made.

The Column button inserts a new column after the selected one or creates a new one as the last column.

The Row button inserts a new row after the selected one or creates a new one as the last row.

The Bold, Italic, Color and Size buttons will change the selected font accordingly.

The Movie button will make a movie of all the rows in the window.

The Edit movie button opens the edit instance movie window where start and end times for a row can be adjusted using the arrow buttons in upper corners of the movie window.

By pressing the Populate button, selected rows in the transcription window be created in an open timeline window. This process will also update existing instances if changes have been made, and synchronise changes.

Click on the Play button to start the timeline movie playing.

The Stop button will stop the timeline movie playing.

 Moves the black looping markers back one loop. The shortcut key is F1.

 Moves the black looping markers forward one loop. The shortcut key is F2.

 Moves the red looping markers back one loop. The shortcut key is F3.

 Moves the red looping markers forward one loop. The shortcut key is F4.

 Moves the red and black looping markers back 0.5 seconds. The shortcut is F5.

 Moves the red and black looping markers forward 0.5 seconds. The shortcut is F6.

 Insert or update the start time for the current row.

 Insert or update the start time for the current row and jump down to next row moving loop by its duration.

Lines sets the the amount of lines to be displayed in the text track below the movie when the Movie button is pressed.

Loop sets the default loop duration during the transcription process.

Transcription Window Column Types

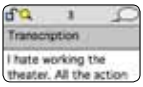
Time Reference

This column displays the start time, duration and the timeline for the instance.

Speaker

The speaker column relates to the row name in the timeline. It is the equivelant to a code button, meaning it is a category of marked time. Transcription. The transcription column is where the free text is inputted. The text in these cells will be displayed in the text track of a movie.

Transcription



Labels

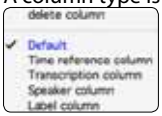
This column reflects the labels that have been inserted into the instances using a code window or label tree. Labels can be typed into this cell and populated back to the timeline.

Default

The default column is used for notes, observationsm, or or column separation. These will not be populated back in the timeline.

Transcription Window Column Type Settings

A column type is set by right clicking on the column setting bar above a column.



Transcription Window Column Settings Bar

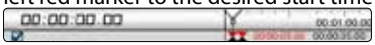
Clicking on the icons in the column settings bar of the sorter window will turn on and off the settings for locking content, searching, and text overlay.

	Unlocked Column	Cells in column can be edited.
	Locked Column	Cells in column cannot be edited.
	Searchable Column	Cells in column will be searchable.
	Unsearchable Column	Cells in column will not be searchable.
	Speaker Column	Text overlay will be displayed.
	Speaker Column	Text overlay will not be displayed.
	Text Label Column	Text overlay will be displayed.
	Text Label Column	Text overlay will not be displayed.
	Transcription Text Column	Instance note text track will be displayed.
	Transcription Text Column	Instance note text track will not be displayed.

Transcribing Video

Now that we are familiar with the all the buttons and tools in the transcription window, let's go through the process of transcribing from the beginning. Here are the steps using a timeline that has no coding:

1. Open a timeline with a linked movie.
2. Set the playhead to the desired start time in the timeline.
3. Choose File > New > Transcription. A transcription window will open. To aid in organizing the windows, hold down CTRL and click on the timeline movie resize buttons in the bottom corner of the timeline movie. They look like 2 different sized rectangles.
4. In the timeline, you should see the red and black looping markers at the start of the movie. If you do not, tick the check box below the movie time in the timeline. Drag, the left red marker to the desired start time if needed.



5. With everything in place, press the  button to insert a start time, the shortcut for this is CTRL+I. Now press the play button  . The shortcut for play is CTRL+L. The movie will start to play and loop around between the black markers.
6. Enter the speaker name by clicking in the speaker cell of the row or press TAB on the keyboard. Then, enter the utterance of the speaker in the transcription cell by clicking in the cell or using TAB to move into the cell.

7. It is likey that the utterance is longer than 5 seconds, so we want to advance the loop to continue entering the whole phrase or thought. Click on the  button or press F2 on the keyboard, F1 will move markers backward. The loop will jump forward 5 seconds and inputting can continue. Continue to advance the markers and transcribe until the loop is in the region you want to end the instance.
8. While looping around the desired end time, press the  button or CTRL+O at the moment you want the instance to end. After clicking on the button or keystroke, the end time will be set, the routine will jump down a line, set the start time for the new row using the previous end time and populate the speaker cell with the last speaker. So, all that needs to be inputted is a new speaker, the utterance and jump through the loops until desired end time. Repeat this pattern until transcription is complete.

Once you are comforable with this routine, we recommend really learning the keyboard shortcuts. This can drastically reduce transcription time. Using the keyboard, the pattern from the first instance is:
CTRL+L > CTRL+I > SPEAKER > UTTERANCE > F1 > MORE UTTERANCE > CTRL+O
The second instance:
SPEAKER or TAB > UTTERANCE > F1 > MORE UTTERANCE > CTRL+O

Keyboard Shortcuts	Function
CTRL+J	Play movie backward, press multiple times to increase speed.
CTRL+K	Stop movie playing.
CTRL+L	Play movie forward, press multiple times to increase speed.
OPTION+CTRL+J	Play a fraction of movie forward with audio.
OPTION+CTRL+L	Play a fraction of movie backward with audio.
CTRL+I	Set start time
CTRL+O	Set end time
F1	Move black markers backward
F2	Move black markers forward
F3	Move red markers backward
F4	Move red markers forward
F5	Move red and black markers 0.5 seconds backward
F6	Move red and black markers 0.5 seconds forward

If the function keys are controlling other aspects of the system like the sound or brightness, open System Preferences, click on Keyboard and tick the "Use all F1, F2, etc. keys as standard function keys". Once this setting is enabled, you will need to press the fn key and the Fkey to perform the system operation like increase the volume.

Exporting Instances to a Transcription Window

Any group of selected instances or a single instance can be exported to a Transcription window. Select the instances in the Timeline, then press the transcription button in the Timeline tool bar. If a Transcription window is open the instances will be pasted below the last row of that window. If a transcription window is not open a new one will be created automatically with the instances. When multiple instances are exported at once, they will be pasted in the window chronologically. If the selection is across multiple rows, each row will be pasted in their respective sections in the window.

Creating an Instance Movie in the Transcription Window

Double click on the row number or time reference cell for a row. To make a movie of multiple rows, select the rows using COMMAND or SHIFT and press the movie button in the transcription tool bar. If no rows are selected, the movie button will create an instance movie from all rows.

Viewing and Editing Instances in the Transcription Window

The edit instance movie can be used to view and trim instance rows in the transcription window. Click in a cell and press on the edit movie button in the transcription window tool bar to open the instance edit movie window. The start and end time of the instance can be edited using the arrow buttons in the corners of the edit instance movie. To change the instance being displayed in the movie window, click in any cell of a different row. The edit instance movie will update as the cells are clicked in different rows. Turn on movie looping mode to make the make the movie play continuously, saving a few keystrokes or mouse clicks.

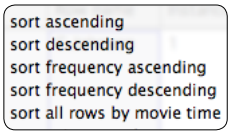
Editing Labels with the Label Tree Popup
Labels and instance notes can be edited, added, or removed in a cell. Click in the cell change the text, input new text, or delete the text. When adding text labels, care must be taken that the label is inputted correctly in the cell. If a label is misspelled or the capitalization is wrong, two different labels will be created that mean the same thing. To help this problem, the label tree popup menu can be accessed in any cell by holding down OPTION and clicking in a cell. The label tree popup menu will appear and the labels can be added or removed. Using the label tree is the best way to make sure that labels are consistently inputted in the transcription window.

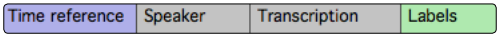
Using the Keyboard

To move around in the transcription window with the keyboard, begin by selecting a cell with the mouse. Press the TAB key to move to the next cell to the right of the active cell. When the last cell in the row is reached it will wrap to the next row down in the first cell. Pressing SHIFT+TAB will move in the reverse direction. Alternatively, hold down CTRL and use the arrow keys to move up, down, right, and left around the cells.

Sorting Rows

Columns in the transcription window can be automatically sorted in 5 different ways. To access the sorting options, right click on the column header name cells.





1. Sort Ascending sorts the rows in alphabetical order from A-Z according to the data found in the column. Numbers will be sorted from lowest to the greatest number.
2. Sort Descending sorts the rows in reverse alphabetical order from Z-A according to the data found in the column. Numbers will be sorted from the greatest to the lowest number.
3. Sort Frequency Ascending sorts the least frequent found text or number in the column and groups those at the top, the next least frequent found text or number is placed below this grouping. This pattern is followed through out the column of data.
4. Sort Frequency Descending sorts the most frequent found text or number in the column and groups those at the top, the next most frequent found text or number is placed below this grouping. This pattern is followed through out the column of data.
5. Sort All Rows by Movie Time sorts the rows according to the instance start time. This sorting option only works when clicking on the time reference column header.

Synchronizing Changes Back to the Timeline

After making changes to the duration of instances, speakers, transcription, and labels in the rows of a transcription window. The changes can be synchronized back to the original timeline. Select the specific rows in the window to be synchronized, then press the populate button in the tool bar.

To synchronize all the rows, press COMMAND+A to select all the rows, then press the populate button. When synchronizing data back into timelines, the original timelines must be open.

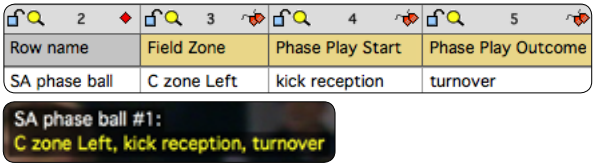
NOTE: The purpose of requiring the timelines to be open is to insure that accidental synchronization does not occur. Changes made through synchronization cannot be undone once the timeline is saved. By default, the auto save timeline data preference is turned on.

Overlay Text Display Options in the Transcription Window

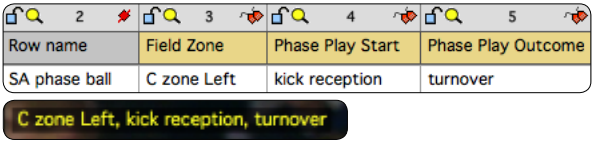
Each column of data in the Transcription window can be turned off for overlay text display. When the column type icon has cross through it, the data will not be shown as overlay text.

This is used to limit what is presented in the movie and attention can be brought to specific data. The examples below show how turning off columns displays less data.

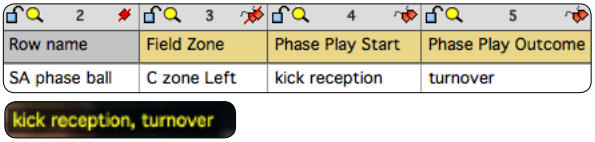
No columns turned off.



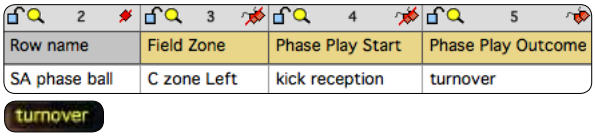
Row name column turned off.



Row name and Field Zone columns turned off.



Row name, Field Zone and Phase Play Start columns turned off.



Transcription in the Timeline

Transcription can be added directly to an instance in the timeline. This is designed to add information conveniently if the transcription window is not neccessary. It is a good way to quickly add content that speaks to those viewing the movie or as a method to record special information regarding the instance. The transcription will appear in the text track at the bottom of an instance movie when text tracks is checked in the timeline tool bar.

Adding a Transcription to an instance

1. Select the instance in the timeline to add text to.
2. Open the Edit transcription note window by pressing on the Text button in the timeline tool bar.

3. Add the text in the Edit instance window. When all the text is added, click on the red button to close the window and save the text.

The Edit instance window can be left open to easily add transcription text to an instance. Select any instance and the edit instance window will change to that instance. The text will be saved in the instance when the next instance is selected after adding the text. This makes adding text a quick job and saves on mouse clicks.

Viewing Transcription text in a movie

Enable transcription text in the timeline by checking the text tracks check box.
When a movie is made from instances in the timeline, a text track will appear at the bottom of the movie window.

Setting the amount of lines of text displayed

Click on the lines drop down menu in the timeline tool bar. Select the number of lines of text that will appear in the movie at the base of the movie window. If there is a lot of text that is required to display, set this to match the lines required to display the text. Otherwise, the transcription text will adjust to scroll evenly throughout the length of the movie.

The Drawing Window

The Drawing Window Toolbar

 Drawing visibility turned on.

 Drawing visibility turned off.

 Selection Tool – Select, move, or change drawing objects

 Trash

 Sets the color of the drawing objects.

 Type text directly into drawing or video window.

 Sets the size of the text when text tool is used.

 Draws a straight line from point to point.

 Draws a straight dashed line from point to point.

 Draws a straight line from point to point with an arrow head at the end of the line.

 Draws a straight dashed line from point to point with an arrow head at the end of the line.

 Draws a zig-zag line from point to point.

 Draws a zig-zag line from point to point with an arrow head at the end of the line.

 Draws freehand according to mouse position.

 Draws an angle between three points.

 Draws a rectangle with no fill color

 Draws a rectangle with fill color

 Draws an ellipse with no fill color

 Draws a dashed ellipse with no fill color

 Draws an ellipse with fill color

 Sets the thickness of the selected drawing tool or object.

Drawing Tools

1. Select the pencil from the Main Tool bar.
2. To draw a straight line, select . Click on the point of the movie frame where you want the line to start and drag the line to the desired end point.
4. To change the colour of the line click on the .
5. To change the width of the line click on the .

Changing a Drawing Object

1. Select a color from the Color palette.
2. Select the tool you wish to use by clicking on it. This tool will remain active until another tool is selected or the ESC key is pressed. When the ESC key is pressed the default selection tool will become active.
3. Click & drag to draw in a Movie with the active tool.
4. To resize or change a drawing object, click the selection tool then click & drag on the handles of the drawing object. (Handles are the squares at the ends of the line.)
5. To move a drawing object, click on the selection tool and click & drag on the object.
6. To change the color of an object select the object, then click on the Color Palette tool and select the desired color in the palette.
7. To change the thickness of an object, select the object and click the Line Thickness tool and select the desired thickness from the list.

Using the Text Tool

1. Select a color and font size for the text.
2. Click on the text tool , then click on the location in a movie where you want to type the text.
3. Type the text in the text box.
4. To edit the text, double click on the text using the selection tool.
5. To save and exit click the red button at the top left of the window

Note: The instance will be marked in the Timeline with a triangle in the top left corner of the instance marker to indicate that the instance contains either text or drawing marks.

Delete Drawing Items

To delete drawing items , select the Edit menu from the Main Menu bar or use the Keyboard Shortcut function ^⌘⌫

Customizing the Drawing Tool Bar

Most of the drawing tools you may find that you do not use and the wide tool bar can get in the way when presenting and drawing in full screen. To customize the appearance of the tool bar, click on the button in the upper right corner of the tool bar. This will reveal a check box below each tool. Uncheck any tools that you do not wish to see in the tool bar. Click on the button in the upper right corner to close and save customization.

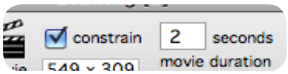
Create a Movie incorporating the Drawing Window

To create movies incorporating pictures of your analysis use the drawing window. The drawing window is able to create movies that can be combined with other instances.

1. Open up an instance by double clicking on it. Stop the instance movie at the point where you want to make a coaching note with drawing and text. (We shall call this "the original instance window")

2. Select "File> New> Drawing Window" from the Main Menu bar. A blank drawing window will open. Copy and paste the still frame from the original instance window across to the drawing window. (apple/command + c for copy and apple/command + v for paste).

3. Draw on the drawing window using tools. The arrow icon on the drawing toolbar will take you back to a cursor in order to move things around or make other selections. Hint: to make text stand out, put a square or rectangle on the page first and then write in an opposite colour on top.



4. Tick the Constrain box in the toolbar and nominate the length you'd like to freeze the frame and then press the movie icon to make the movie

Note: it will ask you to save the movie created. Click save to get to the next step but you don't need to keep this after the whole drawing movie has been created.

5. When the movie pops up, hold down shift and drag the bottom hour-glass shaped cursor all the way along. The darkened background indicates the whole movie is selected.

6. Click and hold on the movie and drag it back into the original instance window. This is called drag and drop editing and indicated by a pixelated frame. The original frame will now also have a darkened section within it's timeline

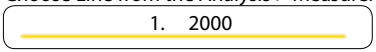
7. File> Save as> Format: Movie Player Standalone movie (on desktop). The movie is now ready to be distributed or presented in a Quicktime movie format (on either Mac or PC).

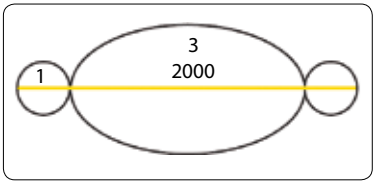
Create Angles and Measurement Lines

The measurement tools, line and angle, can be found under the Analysis > Measurement menu. By using known distances in a frame of video, you can accurately measure other distances relative to a known distance. Known distances that can used in a video frame are landmarks such as a goal or field marker. You can use the landmark to set the relative scale of the line tool.

Line Measurement Tool

Choose Line from the Analysis > Measurement menu in the main menu bar.





A line will appear in the middle of the screen. The measurement tool has a number of invisible handles on it. On the line measurement tool there are three handles to grab. Move the mouse pointer over the ends of the line tool, the cursor changes to a cross-hair (1+2). Click on these areas to move that end of the line. Move the mouse pointer over the center of the line tool, the cursor changes to a finger pointing (3). Click on this area to move the line tool.

Set the Line Parameters

Press CONTROL and click on one of the lines to set the Line Color, Line Thickness, Vertical Scale, Horizontal Scale, Make Vertical, Make Horizontal.

Setting the Scale Factor for the Line Length

You can use the vertical and horizontal scale option to scale the lines and angles to reflect real world values.

- To set the Vertical scale for a movie, move the line over a known measurement in the movie, select the "Vertical Scale Option" and type in the real world value.
- To set the horizontal scale for a movie, move the line over a known measurement in the movie, select the "Horizontal Scale Option" and type in the real world value.

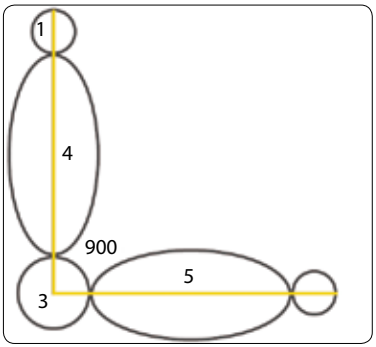
All angles and lines should be recalibrated accordingly.

The biomechanical measurement tool can be used either on the preview movies or in full screen mode – where greater precision of measurement is available, because of the larger picture size.

The line tool is most effective for movies where the camera is fixed and does not zoom in and out.

Angle Measurement Tool

Choose Angle from the Analysis > Measurement menu in the main menu bar.



An angle will appear in the middle of the screen. The measurement tool has a number of invisible handles on it. On the angle measurement tool there are five handles to grab. Move the mouse pointer over the ends of the line tool, the cursor changes to a cross-hair (1+2+3). Click on these areas to move the ends of the angles and the vertex. Move the mouse pointer over the middle of either arm, the cursor changes to a finger pointing (4+5). Click on this area to move the angle tool.

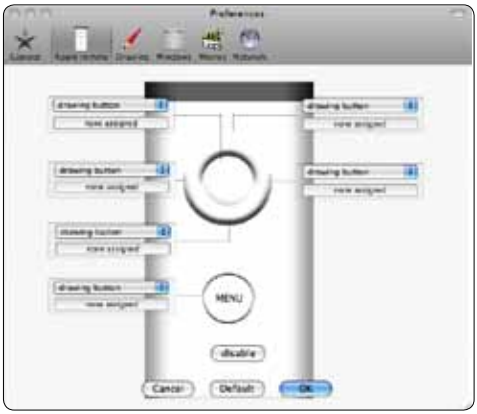
The Measurement tools can be cleared by right clicking on the tool and selecting delete or delete all.

Creating Title Movies
The drawing window is great for creating title movies that you can paste in front of an instance movie. This lets the viewing audience know what is coming up and helps keep them focused on the subject of the presentation.
Create a folder called Titles. Open a drawing window, paste your logo in the window, set the background color, add some drawing objects and color them to match your scheme. Add some large bold text in the middle of the window and save the drawing in the Titles folder.
Edit the bold text to match the subject of the instance movie, this might be the row name. Then, create the movie and save it in the Titles folder with the name of the bold text. Repeat this process for all the categories of instance movies you will be presenting. Since it is very common that you will need to use these titles over and over, they are now created and saved in the Titles folder for future use.

Using a Remote Control

The Apple Remote can be used in various ways. These peripheral products are great tools for boardroom presentations of coded video.

This remote can be customized in the software preferences.



Each button on the remote can be assigned a movie, drawing tool, or code button hot key function. Click on the button type drop down and select from Code, Movie, or Drawing button.

Code buttons can be assigned to match hot keys in a code window. When the button window is open and in code mode, the button can be pressed on the remote and it will push that button in the code window.

Movie buttons are the various playback features of the software that can be performed in a movie window using the keyboard shortcuts.

Drawing buttons will enable different drawing tools in the drawing tool bar. This is very handy when presenting in full screen.

Statistics Window

The statistics window is a spreadsheet style window with the ability to perform complex calculations based around instances in a timeline. The Statistics window must be built "from the ground up".

Mathematical and logical expressions can be built into scripts in each cell. The scripts are built into each cell individually. Each cell can hold text, show data, change background color, or text color according to actions from the scripts. You are not able to populate the cells automatically from any other window.

The statistics window scripts can be executed manually by pressing the execute button in the window or executed automatically upon a change in the timeline or with the click of a button in the code window.

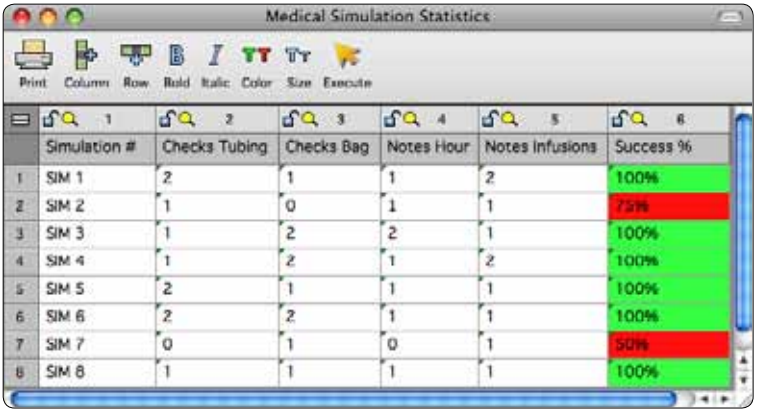
The statistics window can drive output from a script to a button in the code window. Scripts can be written to change button colors and push buttons up or down according to customized calculations. The statistics window is extremely flexible, rows and columns can be moved, added and deleted to present the output in hundreds of ways.

A Statistics window reads the front-most Timeline unless the "From" command is used in it's scripting

Create A Statistics Window

Choose File > New > Statistics window from the main menu bar.

The Statistics Window Toolbar



	1 Simulation #	2 Checks Tubing	3 Checks Bag	4 Notes Hour	5 Notes Infusions	6 Success %
1	SIM 1	2	1	1	2	100%
2	SIM 2	1	0	1	1	75%
3	SIM 3	1	2	2	1	100%
4	SIM 4	1	2	1	2	100%
5	SIM 5	2	1	1	1	100%
6	SIM 6	2	2	1	1	100%
7	SIM 7	0	1	0	1	50%
8	SIM 8	1	1	1	1	100%

Print

Prints the window contents

Column

A new column will be created to the right of the column where the cursor is located. If the cursor is not in a cell, then the column will be created to the right of the last column in the window.

Row

A new row will be created immediately below the row where the cursor is located. If the cursor is not in a cell, then the row will be created below the last row in the window.

Text Properties

For manipulating the text in the heading columns and rows.

Execute

Searches the Timeline open and executes the statistical commands in every cell in the window that has a statistical script.

Unlocked and Searchable Column Cells

Allows cells in the column to be edited.
Allows cells in the column to be searched with CNTRL+F

Locked and Unsearchable in Column Cells

Prevents cells in the column from being edited
Prevents cells in the column from being searched with CTRL+F

Moving around a Statistics Window

Moving from cell to cell can be done in two ways.

1. Pressing the TAB key will move the cursor from one cell to the next cell on the right. Pressing SHIFT+TAB will move the cursor from one cell to the next cell on the left.

2. Holding down the CTRL key and pressing the arrow keys will move the cursor in the direction of the arrow key that is pressed.

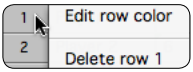
Moving A Column
Click and drag on the column information header where the column number is located, move the column to the new location.

Moving A Row
Click and drag on the row number, move the row to the new location.

Deleting A Column

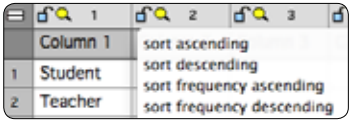
To delete a column, press CTRL and click on the column information header. Select Delete column from the popup menu.

Deleting A Row



To delete a row, press CTRL and click on the row number. Select Delete row from the popup menu.

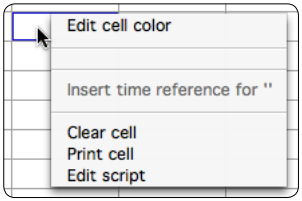
Sorting Rows By Column



Rows can be sorted by column by pressing CTRL and clicking on the column header name cell. This is useful when sorting rows alphabetically or numerically. Sorting options are explained further in the Sorter window section of this manual.

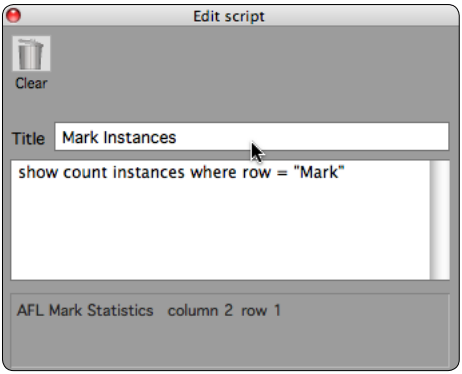
Opening The Edit Script Window

To add a script to a cell, press CTRL and click on a cell. Choose Edit script from the popup menu. This will open the script editor window.



After a script is added to a cell, the upper left corner of the cell will have a green triangle in it.

Adding A Script



The edit script window is a very basic text editor with copy and paste functionality.

The window consists of two parts: the title of the cell and the script for the cell.

The title of the cell can be set so it can be referenced in another cell's script.
The script for the cell is set in the area below the title.

The scripting language and commands are quite difficult to master, but extremely powerful. Each command is documented in this manual with examples. Work through these examples and email support@sportstec.com for further help.

Copy and Paste Rows with Scripts

Hold down OPTION and click and drag on the row number. This will create a duplicate row with all the scripts included. This is quite a time saver when creating rows that will have the the same columns of data in them like student statistics.

Use Cell References

Use a cell as a data place holder for script referencing. Setup a column where the student names are inputted, then reference this column by its name or coordinates in a script. This makes changing data very easy because it can be changed in the cell, not the script.
In the script, create a variable that reads the reference cell's data.
$studentname = cell("Student",$row)
show count "Outburts" where row = $studentname
This variable will look to the player column in the same row and use this data in the script. By typing A.McGrath into the Student column cell, the script finds how many Outburts labels there were in the A.McGrath timeline row.

Copy to Excel

	Teacher	Procedural
1	R Gersbach	5

Data being displayed in the cells of a statistical window can be copied into Excel or any other spreadsheet program. Hold down COMMAND and click in the cell, then press COMMAND+C to copy the data to the clipboard. COMMAND+V will paste the data in the other applicaiton. A group of cells can be selected by holding down COMMAND, click in top left cell, then click in the bottom right cell of the group of cells to be copied.

Statistical Commands Quick Glossary

$COLUMN	Returns the column the cell is in.
$ROW	Returns the row the cell is in.
ABS	Returns the absolute value of a number.
AND	If values are numbers: returns 1 if both values are not zero, otherwise returns If using text then it is assumed that you are referring to labels and the return result will be instances from the timeline that contain both labels. "AND" is commonly used inside other commands (see IF, COUNT...) and can be combined with "OR" and "NOT"
BUTTON STATE	Returns 1 if button is down and 0 if button is up, in the code input window.
CEILING	Returns a number which has the number rounded up to the specified number of digits from the decimal point. If you need to display a certain number of digits after the decimal point use the decimal command.
CELL	Grabs the output from another cell in the window.
CELL_COLOR	Changes the color of the cell.
COUNT	Counts the number of labels in the timeline (including multiple ones in the same instance).
DECIMAL	Returns a string which has the number to the specified number of digits from the decimal point. The number is always rounded down.
END	Gives the latest end time of the labels or instances in the timeline in seconds. Returns -1 if no instances.
END TIME	Returns all instances that have the correct end time condition.
EXIT	Stops the rest of the cell from being executed
FLOOR	Returns a number which has the number rounded down to the specified number of digits from the decimal point. Similar to DECIMAL excepts that it returns a number and not a string. If you need to display a certain number of digits after the decimal point use DECIMAL.
FROM	Will get instances from specified timelines. Not using this command will default to use front timeline
HH:MM:SS	Specifies the time in hours, minutes and seconds
IF	Executes the statement based on a condition.
INDEX	Finds the value from a range of cells with the given offset
INSTANCES	Returns all the instances in the timeline.
INSTANCES2	Will return all the instances in the timeline between the red markers.

INSTANCE[x]	Returns the 'x'th instance in the timeline based on start times.
LABEL	Returns a label in the timeline or row. If an instance has 3 matching labels it will return 3.
LABEL IN	LABEL IN Will return a label in the instances. If an instance has 3 labels it will return the instance 3 times.
LABELS	Returns all the labels in the timeline or row. If an instance has 6 labels overall it will return 6.
LABELS IN	Will return all the labels in the instances. If an instance has 3 labels it will return the instance 3 times.
LARGE	Finds the nth largest value in the cell group
LENGTH	Gives the length of labels in the timeline (including multiple ones in the same instance) in seconds.
LOOKUP	Finds a match for a given value in the first range, and then returns the value in the cell with the same relative position in the second range. Ranges cannot overlap or be of different sizes
LIMIT	Limits instances based on conditions.
NOT	If value is number: returns 1 if value is 0, otherwise returns If using text then it is assumed that you are referring to labels and the return result will be instances from the timeline that do not contain the label. "NOT" is commonly used inside other commands (see IF, COUNT...) and can be combined with "AND" and "OR".
OR	If values are numbers: returns 1 if either value is not zero, otherwise returns If using text then it is assumed that you are referring to labels and the return result will be instances from the timeline that contain either label. "OR" is commonly used inside other commands (see IF, COUNT...) and can be combined with "AND" and "NOT".
OVERLAP	Returns instances from the given arguments that overlap for any part of the timeline. Opposite of UNIQUE.
PUSH BUTTON	Pushes the button up/down in the code window. If this is a label button then you only need to use DOWN.
RANK	Finds the rank of the value in the range
ROUND	Returns a number which has the number rounded to the specified number of digits from the decimal point. It will round up or down depending on which is the closest digit. If you need to display a certain number of digits after the decimal point use DECIMAL.
ROW_COLOR	Changes the color of the row.
SMALL	Finds the nth smallest value in the cell group

SEND	Changes the value of the button in the code window with that button name.
SEND BUTTON COLOR	Changes the background color of the button in the code window with that button name.
SEND TEXT COLOR	Changes the text color of the button in the code window with that button name.
SHOW	Outputs the number or text to the cell.
START	Gives the earliest start time of the labels or instances in the timeline in seconds. Returns -1 if no instances found.
START TIME	Returns all instances meeting the correct start time condition
SUM	Adds all the values in the cell group.
TIME	Returns all instances meeting the instance length condition
TIMER	Converts the input in seconds to a timer string with a given precision
UNIQUE	Returns instances from the given arguments that do not overlap for any part of the timeline. Opposite of OVERLAP.
UNIQUE RANK	Finds the rank of the value in the range making sure it is unique
WHERE	Selects certain instances based on conditions.

Display Commands

These commands change the display of the cell that the script is in.

CELL_COLOR

Changes the color of the cell. The color ranges are 0 to 100 percent of red, green, and blue. Different percentages of each color will result in different colors.

Format:
CELL_COLOR (red , green , blue)

Arguments:
red: a number 0 to 100
green: a number 0 to 100
blue: a number 0 to 100

Example:
cell_color (100,0,0) turns the background color of the cell red.
cell_color (100,100,0) turns the background color of the cell yellow.

ROW_COLOR

Changes the color of the row. The color ranges are 0 to 100 percent of red, green, and blue. Different percentages of each color will result in different colors.

Format:
ROW_COLOR (red , green , blue)

Arguments:
red: a number 0 to 100
green: a number 0 to 100
blue: a number 0 to 100

Example:
row_color (0,0,100) turns the row background color blue.
row_color (100,50,0) turns the row background color orange.

SHOW

Outputs the number or text to the cell.

Format:
SHOW value

Arguments:
value: numerical expression or quoted text

Example:
show "Hello" displays Hello in the cell when the scripts are executed.

Information Commands

Information commands return information about timelines and statistical windows.

CELL

Grabs the output from another cell in the window. This command is useful in calling on another cell's output to be used in an expression or variable.

Format:
CELL reference

Arguments:
reference: (column number or column title , row number), quoted text representing a cell or the column title.

Example:
show cell (2,1) returns the output from the cell in column 2, row 1
show cell "my cell title" returns the output from the cell which has a title "my cell title"
show cell "my column title" returns the cell which has a column title of "my column title" on this cell's row
show cell ("Column 1",3) return the cell which has a column title of "Column 1" on row 3
show cell ($column-1,$row+2) returns the contents of the cell 1 row to the left and 2 rows down
show cell ("Column 2",$row-2) returns the contents of the cell which has a column title of " Column 2" and 2 rows up from this cell

COUNT

Will count the number of labels in the timeline including multiple ones in the same instance.

Format:
COUNT labels

Arguments:
labels: quoted text specifying label you wish to count in the front timeline or instances(which can be grouped using OR, AND, NOT) optional WHERE conditions
conditions: ROW = quoted text or ROW != quoted text (which can be grouped using OR, AND, NOT)

Example:
count "Outburst" returns a count of all the "Outburst" labels in the front timeline.
count "Outburst" and "Elated" where row = "Miller" returns the total number of "Outburst" and "Elated" labels in the row "Miller"
count "Outburst" where row != "Miller" returns the total number of "Outburst" labels which are not in row "Miller"
$a = not ("Outburst" or "Elated")
show count $a
This example uses a variable and shows the total number of labels in the front timeline which do not have "Outburst" or "Elated" labels in them. Variables are handy to use in long expressions or scripts saving a lot of time in retyping or changing conditions.

END

Will give the latest end time of the labels or instances in the timeline in seconds. It will return -1 if no instances are found.

Format:
END instances

Arguments:
instances: instances or quoted text specifying label you wish to get the latest end time

Example:
end "Outburst" returns the end time of the latest instance which has the label "Outburst" in seconds
end "Outburst" and "Elated" where row = "Miller" returns the latest end time of "Outburst" and "Elated" labels in the row "Miller"
end instances returns the end time of the last instance. i.e. The latest overall end time
show end instance[-1] shows the end time of the last instance (based on start time). This might not be the latest overall end time

END TIME

Will return all instances that have the correct end time condition that meets the criteria in the argument.

Format:
instances WHERE END TIME operator value

Arguments:
instances: quoted text specifying label you wish to count in the front timeline or instances which can be grouped using OR, AND, NOT
operator: < <= > >= =
value: the end time you wish to test (in seconds)

Example:
count instances where end time > 20 will count the number of instances that have an end time after 20 seconds
count "a" or "b" where row = "row1" and end time > 20 will count the instances that have "a" or "b" in them in row "row1" ending after the first 20 seconds
count instances where (start time <4 or end time >20) and time<4 will count all the instances which are smaller than 4 seconds, and have a start time in the first 4 seconds or an end time after the last 20 seconds.

HH:MM:SS

Specify the time in hours, minutes and seconds

Format:
HH:MM:SS

Arguments:

HH: hours
MM: minutes
SS: seconds

Example:
show count instances where start time > 00:01:01.45 show a count of all the instances that have a start time greater than 1 minute, 1.45 seconds

INDEX

Finds the value from a range of cells with the given offset

Format:
INDEX (offset IN reference..reference)

Arguments:
offset: an offset number (1 is the first cell) or column offset (1 is the first column), row offset (1 is the first row). If the offset is just a number, it will count the offset in the columns first

Reference:
column number or column title , row number

Example:
index (2 in 3,4..3,8) returns the 2nd cell in the range. This will be the cell in column 3, row 5.

index (4,2 in 2,5..9,9) returns the 4th column and 2nd row starting from column 2, row 5. This will be the value in column 5, row 6

INSTANCES

Will return all the instances in the timeline.

Format:
INSTANCES

Example:
length instances returns the total length of the instances in the timeline.
count instances returns the total number of instances in the timeline.
Use in conjunction with WHERE to select particular rows.

INSTANCES2

Will return all the instances in the timeline between the red markers.

Format:
INSTANCES2

Example:
length instances2 returns the total length of the instances in the timeline between the red markers.

count "a" and instances2 returns the total number of instances with "a" in them between the red markers in the timeline.

I

INSTANCE[x]

Will return the x'th instance in the timeline based on start times.

Format:

INSTANCE[index]

Arguments:

index: a number less than or greater than 0. if index is greater than 0 then it will count from the beginning. eg. 1 represents the first instance in the timeline, 2 the second instance etc. If index is less than 0 it will count from the end. eg. -1 represents the instance with the latest start time, -2 the second latest start time etc.

Example:

length instance[2] returns the length of the second instance in the timeline.
length instance[-3] returns the length of the third last instance in the timeline.
If you wish to have more control then the LIMIT command should be used

LABEL

Will return a label in the timeline or row. If an instance has 3 matching labels it will return 3.

Format:
LABEL

Example:

count label "Good" returns the total number of "Good" labels in the timeline.

Use in conjunction with WHERE to select particular rows.

count label "Rob" and "Good" where row = "Effort" returns the total number of "Rob" labels where "Good" was also found in the instance in the row named "Effort".

count label "Good" and "Rob" where row = "Effort" returns the total number of "Good" labels where "Rob" was also found in the instance in the row named "Effort".

LABEL IN

Will return a label in the instances. If an instance has 3 labels it will return the instance 3 times.

Format:
LABEL string IN instances

Arguments:
string: a label name
instances: any command that returns instances

Example:
show count label "a" in instances limit 1 returns the total number of labels in the 1st instance in the timeline with "a" in it.

LABELS IN

Will return all the labels in the instances. If an instance has 3 labels it will return the instance 3 times.

Format:
LABELS IN instances

Arguments:
instances: any command that returns instances

Example:
show count labels in instances limit 1,1 returns the total number of labels in the second instance in the timeline.

LABELS

Will return all the labels in the timeline. If an instance has 3 labels it will return the instance 3 times.
Format:
LABELS
Example:
count labels returns the total number of labels in the timeline.
Use in conjunction with WHERE to select particular rows

LARGE

Finds the nth largest value in the cell group

Format:
LARGE (reference .. reference RANKED ranking)

Arguments:
reference: column number or column title, row number or quoted text representing a cell title.
ranking: a number representing the nth largest value. 1 being the largest.

Example:
large (2,1..4,3 ranked 2) returns the 2nd largest value of all cells between column 2, row 1 and column 4, row 3

large ("cell1".."cell2" ranked 1) returns the largest value from all cells between cells with titles "cell1" and "cell2"

large (2,1.."column1",4 ranked 3) returns the 3rd largest value of all cells between column 2, row 1 and the column with the title "column1" on row 4

large ($column+1,$row..$column+2,$row+1 ranked 1) returns the largest value of all cells 1 column right of current cell to 2 columns right, 1 row down

LENGTH

Will give the length of labels in the timeline (including multiple ones in the same instance) in seconds

Format:
LENGTH labels

Arguments:
labels: quoted text specifying label you wish to get the length of in the front timeline or instances(which can be grouped using OR, AND, NOT) optional WHERE conditions
conditions: ROW = quoted text or ROW != quoted text (which can be grouped using OR, AND, NOT)

Example:
length "Outburst" returns the total length in seconds of all the "Outburst" labels in the front timeline
length "Outburst" and "Elated" where row = "Miller" returns the total length of "Outburst" and "Elated" labels in the row "Miller"
length "Outburst" where row != "Miller" returns the total length of "Outburst" labels which are not in row "Miller"
length "Outburst" where row != "Miller" or row != "Smith" returns the total length of Outburst labels in the front timeline which are not in row "Miller" or row "Smith"
show length instance[1] shows the length in seconds of the first instance in the timeline instances(which can be grouped using OR, AND, NOT)

LIMIT

Will limit instances based on conditions that meet the criteria in the argument.

Format:
instances LIMIT offset,select
instances LIMIT select

Arguments:
instances: quoted text specifying label you wish to count in the front timeline or instances(which can be grouped using OR, AND, NOT)
offset: the offset to start counting. eg. 1 = will skip the first instance etc. If offset < 0 then will count from end. eg. -1=last instance. Can be left out if offset is 0.
select: how many instances to select. If select < 0 it will select up to the end value (-1=last, -2=2nd last etc...)

Example:
instances limit 2 will grab the first 2 instances
instances limit 4,2 will offset 4 instances and select the next 2. That makes it the 5th and 6th instance.

instances limit 4,-1 will grab the 5th to the last instance.
instances limit -3,-2 will grab the 3rd and 2nd last instance.
length "a" or "b" where row = "row 1" or row = "row 2" limit 3,2 returns the total length of the 4th and 5th labels in the timeline with a or b in them and the row = 'row 1' or 'row 2'

LOOKUP

Finds a match for a given value in the first range, and then returns the value in the cell with the same relative position in the second range. Ranges cannot overlap or be of different sizes

Format:
LOOKUP (value IN reference .. reference USING reference..reference)

Arguments:
reference: column number or column title, row number
value: a number, string, or instances you want to search the first range with. A range is specified by reference..reference

Example:
show lookup ("w" in $column-2,1..$column-1,8 using $column-4,1..$column-3,8) shows the value in the cell 3 to 4 columns to the left of the current cell, if it finds "w" in the cell 1 to 2 columns to the left of the current cell
lookup(cell "data" in "sorted",1.."sorted",8 using "rank",1.."rank",8) using the cell on the same row in column "data" search the column "sorted" and if it finds it return the value from the column "rank" at the same row

OVERLAP

Will return instances from the given arguments that overlap for any part of the timeline. (This is opposite of the unique command.)
Format:
OVERLAP (instances , instances)
Arguments:
instances: labels or instances
Example:
overlap ("label 1","labels 2") returns all instances which have label 1 in them and overlap with any instance containing label2 in them. It will also return all instances which have label 2 in them and overlap with any instance containing label 1. It will also return instances with both labels in them but only once.
overlap (instances,instances) will return all the instances as every instance will overlap itself
overlap (instance[1], instance[2]) returns both the first and second instance in the timeline provided they overlap. Otherwise it will return nothing
show start overlap ("label 1" where row = "row 1","label 2" where row = "row 2") will show the start time of the first instance that overlaps where label 1 is in row 1 and label 2 is in row 2

RANK

Finds the rank of the value in the range.

Format:
RANK (value IN reference..reference order)

Arguments:
reference: column number or column title, row number
value: a number to search reference..reference for
order: LARGEST or SMALLEST depending on what you want the rank to represent. The value is optional and will default to LARGEST

Example:
rank (2 in 2,1..4,3 largest) returns the 2nd largest value of all cells between column 2, row 1 and column 4, row 3

rank (1, "column1",1.."ccolumn1",5) returns the largest value from all cells between row 1 and 5 in column "column1"

rank (2, "column1",4.."column2",9 smallest) returns the 2nd smallest value of all cells between "column1", row 4 and "column2", row 9.

SMALL

Finds the nth smallest value in the cell group

Format:
SMALL (reference .. reference RANKED ranking)

Arguments:
reference: column number or column title, row number or quoted text representing a cell title
ranking: a number representing the nth smallest value. 1 being the smallest.

Example:
small (2,1..4,3 ranked 2) returns the 2nd smallest value of all cells between column 2, row 1 and column 4, row 3

small ("cell1".."cell2" ranked 1) returns the smallest value from all cells between cells with titles "cell1" and "cell2"

small (2,1.."column1",4 ranked 3) returns the 3rd smallest value of all cells between column 2, row 1 and the column with the title "column1" on row 4

small ($column+1,$row..$column+2,$row+1 ranked 1) returns the smallest value of all cells 1 column right of current cell to 2 columns right, 1 row down

START

Will give the earliest start time of the labels or instances in the timeline in seconds. It will return -1 if no instances are found.

Format:
START instances

Arguments:
instances: instances or quoted text specifying label you wish to get the earliest start time

Example:
start "Outburst" returns the start time of the earliest instance which has the label "Outburst" in seconds
start "Outburst" and "Elateds" where row = "Miller" returns the earliest start time of "Outburst" and "Elated" labels in the row "Miller"
start instances returns the start time of the first instance
show start instance[-1] shows the start time of the last instance (based on start time)

START TIME

Will return all instances that have the correct start time condition that meets the criteria in the argument.

Format:
instances WHERE START TIME operator value

Arguments:
instances: quoted text specifying label you wish to count in the front timeline or instances which can be grouped using OR, AND, NOT
operator: < <= > >= =
value: the start time you wish to test (in seconds)

Example:
count instances where start time < 20 will count the number of instances that have a start time in the first 20 seconds
count "a" or "b" where row = "row1" and start time < 20 will count the instances that have "a" or "b" in them in row "row1" starting in the first 20 seconds
count instances where (start time <4 or end time >20) and time<4 will count all the instances which are smaller than 4 seconds, and have a start time in the first 4 seconds or an end time after the last 20 seconds.

TIME

Will return all instances that have the instance length condition that meets the criteria in the argument.

Format:
instances WHERE TIME operator value

Arguments:
instances: quoted text specifying label you wish to count in the front timeline or instances which can be grouped using OR, AND, NOT
operator: < <= > >= =
value: the instance length you wish to test (in seconds)

Example:
count instances where time < 20 will count the number of instances that are shorter than 20 seconds in length

count "a" or "b" where row = "row1" and time < 20 will count the instances that have "a" or "b" in them in row "row1" and are shorter than 20 seconds
count instances where (start time <4 or end time >20) and time<4 will count all the instances which are smaller than 4 seconds, and have a start time in the first 4 seconds or an end time after the last 20 seconds.

TIMER

Converts the input in seconds to a timer string with a given precision

Format:
TIMER (seconds , precision)

Arguments:
seconds: the time in seconds you wish to convert to hours:mins:seconds
precision: the number of decimal places to show. A value <= 0 will show no decimal places

Example:
TIMER (3601.123,0) will return 1:00:01

TIMER (3601.123,2) will return 1:00:01.12

UNIQUE

Will return instances from the given arguments that do not overlap for any part of the timeline. (Opposite of the overlap command.)

Format:
UNIQUE (instances , instances)

Arguments:
instances: labels or instances

Example:
unique ("label 1","labels 2") returns all instances which have label1 in them and do not overlap with any instance containing label2 in them. It will also return all instances which have label2 in them and do not overlap with any instance containing label1
unique (instances,instances) will do nothing as there will be no unique instance as it will overlap with itself
unique (instance[1],instance[2]) returns both the first and second instance in the timeline provided they do not overlap. Otherwise it will return nothing
show start unique ("label 1" where row = "row 1","label 2" where row = "row 2") will show the start time of the first instance that does not overlap where label 1 is in row 1 and label 2 is in row 2

UNIQUE RANK

Finds the rank of the value in the range making sure it is unique

Format:
UNIQUE RANK (value IN reference..reference UNIQUE reference..reference order)

Arguments:
reference: column number or column title, row number
value: a number to search reference..reference for
order: LARGEST or SMALLEST depending on what you want the rank to represent. The value is optional and will default to LARGEST

Example:
show unique rank(cell"points" in "points",1.."points",9 unique "position",1.."position", $row-1)
Placing this script in all of the cells in "position" column between rows 2 and 9 will produce a ladder position based on points. It works because it does a normal RANK command and then checks the values above it. If it finds there is another team on equal points it will return the next number not used in the unique range. The cell in row 1 of the "position" column would only need the RANK command.

WHERE

Will select certain instances based on conditions that meet the arguments.

Format:
labels WHERE conditions

Arguments:
labels: quoted text specifying label you wish to count in the front timeline or instances which can be grouped using OR, AND, NOT
conditions: ROW = quoted text or ROW != quoted text (which can be grouped using OR, AND, NOT)

Example:
count "a" or "b" where row = "row 1" or row = "row 2" returns the total number of labels in the timeline with a or b in them and the row = 'row 1' or 'row 2'
count instances where row != "row 1" returns the total number of instances in the timeline not counting those in 'row 1'.

Logical Commands...

Logical commands are used to create boolean operations in an expression to help narrow down specific searches and arguments.

AND

Used to combine arguments in order to specify a search more directly. If values are numbers: returns 1 if both values are not zero, otherwise returns 0. If using text then it is assumed that you are referring to labels and the return result will be instances from the timeline that contain both labels. "AND" is commonly used inside other commands (see IF, COUNT...) and can be combined with "OR" and "NOT"

Format:
labels AND labels
number AND number

Arguments:
labels: quoted text representing labels in the timeline
number: numerical expression

Example:
show count "Handshape" and "Inaccurate" shows the number of instances with labels "Handshape" and "Inaccurate" in them
show count not ("a" or "b" and "c") counts the number of instances that do not have "a" or have "b" and "c" as labels in them. AND will be calulated first before the OR as it has higher priority. Use brackets to force logic.

EXIT

Stops the rest of the cell from being executed

Format:
EXIT

Example:
if ($a<5,exit) if $a is less than 5 then stop executing the cell

FROM

Will get instances from specified timelines. Not using this command will default to use front timeline

Format:
labels FROM timelines OR labels FROM ALL TIMELINES

Arguments:
labels: quoted text specifying label you wish to count in the front timeline or instances which can be grouped using OR, AND, NOT) timelines: A set of timeline names separated by comma or the key words ALL TIMELINES

Example:
Show count "a" or "b" from "timeline1","timeline2" where row="row 1" or row="row 2" shows the total number of labels in "timeline1" and "timeline2" with a or b in them and the row = 'row 1' or 'row 2' count instances from all timelines where row!="row 1" returns the total number of

instances from all open timelines not counting those in 'row 1'

IF

Executes the statement based on a condition

Format:
IF (condition, true statement, false statement)
IF (condition,true statement)

Arguments:
condition: if this numeric value is 0 it is considered false and will execute the false statement otherwise any nonzero result is considered true and will execute the true statement. You can use any relational operators <,<=,>,>=,=,!= on numbers or quoted text and logical operators AND, OR, NOT on numbers. When an empty string is compared to a number with = or !=, the string will be consdiered as 0.
statement: any normal command including another "IF"

Example:
if (5<6, show "true", show "false") shows true. You can change the result by changing the condition to 6<5

$a = cell(1,0)
if ($a < 0, show "cell is negative", show "cell is positive")
Using a variable, this example shows whether cell in column 1, row 0 is positive or negative number

$a = cell(1,0)
if ($a != 0, show 5/$a, show "N/A")
Again using a variable to set the cell location, this example shows 5 divided by the contents of cell in column 1, row 0. If that cell is 0 or blank then show "N/A"
if ("tom" < "tot" and 4<5, show "true", show "false") shows true
if ("tom" < "tot" and 6<5, show "true") will do nothing as the condition is false and there is no false statement

NOT

Used to exclude criteria in arguments in order to specify a search more directly. If value is number: returns 1 if value is 0, otherwise returns 0. If using text then it is assumed that you are referring to labels and the return result will be instances from the timeline that do not contain the label. "NOT" is commonly used inside other commands (see IF, COUNT...) and can be combined with "AND" and "OR"

Format:
NOT labels
NOT number

Arguments:
labels: quoted text representing instances labels in the timeline
number: numerical expression

Example:
$a = not "Inaccurate"
show count $a
This example shows the number of instances that do not have "Inaccurate" in them.
show count not ("a" or "b" and "c") counts the number of instances that do not have "a" or have "b" and "c" as labels in them. AND will be calulated first before the OR as it has higher priority. Use brackets to force logic.

OR

Used to combine criteria in arguments in order to specify a search more directly.
If values are numbers: returns 1 if either value is not zero, otherwise returns 0. If using text then it is assumed that you are referring to labels and the return result will be instances from the timeline that contain either label. "OR" is commonly used inside other commands (see IF, COUNT...) and can be combined with "AND" and "NOT"

Format:
labels OR labels
number OR number

Arguments:
labels: quoted text representing labels in the timeline
number: numerical expression

Example:
$a = "Handshape" or "Inaccurate"
show count $a
This example shows the number of instances with either "Handshape" or "Inaccurate" in them
show count not ("a" or "b" and "c") counts the number of instances that do not have "a" or have "b" and "c" as labels in them. AND will be calulated first before the OR as it has higher priority. Use brackets to force logic.

Numeric Commands

These commands perform numeric calculations. All standard mathematical functions +,-,*,/,(),^ can be used. eg. show 7+8

ABS

Returns the absolute value of a number.

Format:
ABS (number)

Arguments:
number: numerical expression

Example:
show abs(-5*2) returns 10.

CEILING

Returns a number which has the number rounded up to the specified number of digits from the decimal point. If you need to display a certain number of digits after the decimal point use the decimal command.

Format:
FLOOR (number ,number of digits)

Arguments:
number: numerical expression
number of digits: if positive the number of digits to show at the right of the decimal point. If negative, the number of digits to the left of the decimal point starting at tens. If 0 no decimal placing will be left

Example:
show ceiling (34.23001, 2) returns 34.24
show ceiling (3423.456, -2) shows 3500
show decimal (ceiling(0.1,0) ,2) shows 1.00

DECIMAL

Returns a string which has the number to the specified number of digits from the decimal point. The number is always rounded down.

Format:
DECIMAL (number ,number of digits)

Arguments:
number: numerical expression
number of digits: if positive the number of digits to show at the right of the decimal point. If negative, the number of digits to the left of the decimal point starting at tens. If 0 no decimal placing will be left.

Example:
show decimal (34.235, 2) shows 34.23
show decimal (3423.456, -2) shows 3400
show decimal (round(0.499,0) ,2) shows 0.00

FLOOR

Returns a number which has the number rounded down to the specified number of digits from the decimal point. This is similar to the deimal command excepts that it returns a number and not a string. If you need to display a certain number of digits after the decimal point use the decimal command.

Format:
FLOOR (number ,number of digits)

Arguments:
number: numerical expression
number of digits: if positive the number of digits to show at the right of the decimal point. If negative the number of digits to the left of the decimal point starting at tens. If 0 no decimal placing will be left

Example:
show floor (34.235, 2) returns 34.23
show floor (3423.456, -2) shows 3400
show decimal (floor(0.999,0) ,2) shows 0.00

ROUND

Returns a number which has the number rounded to the specified number of digits from the decimal point. It will round up or down depending on which is the closest digit. If you need to display a certain number of digits after the decimal point use the decimal command.

Format:
ROUND (number ,number of digits)

Arguments:
number: numerical expression
number of digits: if positive the number of digits to show at the right of the decimal point. If negative the number of digits to the left of the decimal point starting at tens. If 0 no decimal placing will be left

Example:
show round (34.235, 2) returns 34.24
show round (3423.456, -2) returns 3400
show decimal (round(0.499,0) ,2) shows 0.00

Statistical Commands

These commands perform statistical calculations performed on cell ranges.

SUM

Adds all the values in the cell group.

Format:
SUM (reference .. reference)

Arguments:
reference: column number or column title, row number or quoted text representing a cell title.

Example:
sum (2,1..4,3) returns the sum of all cells between column 2, row 1 and column 4, row 3
sum ("cell1".."cell2") returns the sum of all cells between cells with titles "cell1" and "cell2"
sum (2,1.."column1",4) returns the sum of all cells between column 2, row 1 and the column with the title "column1" on row 4
sum ($column+1,$row..$column+2,$row+1) returns the sum of all cells 1 column right of current cell to 2 columns right, 1 row down

Text Commands

These commands manipulate text. To join text you simply use the + operator.

Example:
Show "Hello." + "How " + "are you?" displays "Hello. How are you?" in the cell.
Show count "Outburst" + " student outbursts" displays how many times "Outburst" is found, then followed by " student outbursts. So, if there were 30 Outburst's in the timeline, it would display "30 student outbursts" in the cell.

Variable Commands

Variables are specified using the dollar sign and a name. eg. $message = "hello". In that example $message holds the text "hello" which can be used later on in the script. Variables only hold their value for the cell in the statistical window. A variable can hold a number, text or even instances in the timeline. Numbers cannot be used as the first character after the $ sign.

Example:
$outbursts = count "Elated" or "Angry"
show $outburst
This will display the total count of "Elated" or "Angry" labels found in the front timeline. As the script gets larger and more complex, variables make it easier to make changes because the variable only has to be edited in one spot. It will not need to be changed in every part of the script where it is called.

$COLUMN

Returns the column where the cell is located.

Format:
$COLUMN

Example:
show "My current column is "+$column will show a message what the column is for that cell in the statistical window.

$ROW

Returns the row where the cell is located.

Format:
$ROW

Example:
show "My current row is "+$row will show a message what the row is for that cell in the statistical window.

Output Commands

These commands will output or effect another parts of the program like buttons in the code window.

BUTTON STATE

Returns 1 if button is down and 0 if button is up, in the code input window.

Format:
BUTTON button_name STATEOR
BUTTON button_name STATE IN WINDOW window_name

Arguments:
button_name: a string with the name of a button in the code input window window_name: the name of the code input window

Example:
SHOW BUTTON "name1" STATE shows 0 or 1 depending on if the button is up or down

IF (BUTTON "name1" STATE IN WINDOW "window1", SHOW "DOWN", SHOW "UP") show up/down depending on if the button "name1" is up or down in the code input window with title "window1"

PUSH BUTTON

Pushes the button up/down in the code input window. If this is a label button then you only need to use DOWN.

Format:
PUSH BUTTON button_name DOWN
PUSH BUTTON button_name UP

Arguments:
button_name: a string with the name of a button in the code input window. The button name must be in quotes.

Example:
push button "Poor Behavior " down pushes the button "Poor Behavior" down in the front code input window.

$elatedOutburst = count "Elated" where row = "Student"
$angryOutburst = count "Angry" where row = "Student"
If ($angryOutburst > $elatedOutburst, push button "Poor Behavior" down, push button "Poor Behavior" up)
This script uses an if statement, when the student's Angry Outbursts are greater than their Elated Outbursts, the "Poor Behavior" button is pushed down and it starts to code the timeline. When the Elated Outbursts and Angry Outburts are equal or the Elated Outbursts are greater than Angry Outbursts it pushes the "Poor Behavior" button up and stops coding

SEND

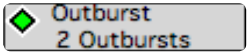
Changes the output value of the button in the code window with that button name. In order to display output in a code button, the display output option must be checked in the button properties for that button.

Format:
SEND value TO BUTTON "button_name"

Arguments:
value: a string or a number
button_name: a string with the name of a button in the code window. The button name must be in quotes.

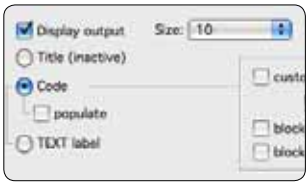
Example:
send 37.4 to button "Button 1" changes the output value displayed in "Button 1" button in the front code window to 37.4.

$outburst = count "Outburst"
send $outburst to button "Outburst"



This script changes the output value displayed in the "Outburst" button in the front code window to the variables $outburst value. $outburst counts the amount of "outbursts" found in the timeline.

The SEND command can send output value to any type of button whether it is a code, text label, or title. Graphical buttons can display output too.



The font size of the output can be changed by selecting the size next to the display output check box in the edit button properties window. When the display output option is checked, a question mark will appear below the button name on the face of the button. It will change value when the statistical window scripts are executed.

Information rich code windows can be created and used during live capture and code. The code window can be printed and used as a report or in a presentation.

SEND BUTTON COLOR

Changes the background color of the button in the code window with that button name.

Format:
SEND BUTTON COLOR (red_color , green_color , blue_color) TO BUTTON button_name

Arguments:
color: a red, green or blue color value 0->100
button_name: a string with the name of a button in the code window

Example:
send button color (100,0,0) to button "Teacher" changes the background color of "Teacher" in the front code window to red.

if ($a < 1, send button color (0,100,0) to button "Teacher", send button color (100,100,100) to button "Offense")
If $a < 1 then the button will be green otherwise it will be white.

SEND TEXT COLOR

Changes the text color of the button in the code window with that button name.

Format:
SEND TEXT COLOR (red_color , green_color , blue_color) TO BUTTON button_name
Arguments:
color: a red, green or blue color value 0->100
button_name: a string with the name of a button in the code window
Example:
send text color (100,0,0) to button "Teacher" changes the text color of "Teacher" in the front code input window to red.

if ($a < 1, send text color (0,100,0) to button "Teacher", send text color (0,0,100) to button "Teacher")
If $a < 1 then the button's text color will be green otherwise it will be blue.


Part 5 - Distribute

Exporting Data Files

Timeline data can be easily exported and used in other applications such as Excel and Final Cut Pro.

Export an Edit List

An edit list generates a complete list of events in play order. It creates a tab delimited file that is easy to manipulate in a spreadsheet editor like Excel. Using the edit list data, graphs, functions and macros can create some very informative reports.

The export is simple to perform. Open a timeline and choose File > Export > XML edit list... The file that is exported will likely have an excel icon and can be opened by Excel immediately. Since this is a tab delimited file, it can also be opened by many simple text editors or can be used as a data source for other workflows.

The export will appear like this in Excel.

For more information, see the Import section of this manual. There is a more in depth explanation of the data structure of the file. Also, see the Export Preferences section, this file type can be exported during capture and coding.

Export an XML Edit List

Like the Edit List, the XML edit list generates a list of events in play order, but in an XML structure. The XML edit list is generally used for transferring timeline information from timeline to timeline. However, since it is common file structure, it can be used in hundreds of ways.

To export an XML edit list, open a timeline with coded data and choose File > Export > XML edit list... The file will contain all the descriptions of the instances including: start and end times, row names and colors, label groupings, text labels, and instance notes. A file will look this in a simple text editor.

<file>
<ALL_INSTANCES>
<instance>
<ID>1</ID>
<start>279.5398520953</start>
<end>616.7625308135</end>
<code>Alexis Proctor</code>
<label>
<text>Great Work</text>
</label>
<label>
<group>Effort</group>

<text>Solid</text>
</label>
<free_text>Excellent example of good footwork.</free_text>
</instance>
</ALL_INSTANCES>
<ROWS>
<row>
<code>Alexis Proctor</code>
<R>64083</R>
<G>65535</G>
<B>23454</B>
</row>
</ROWS>
</file>

For more information, see the Import section of this manual. There is a more in depth explanation of the data structure of the file. Also, see the Export Preferences section, this file type can be exported during capture and coding.

Export Transcript Text File

Using the transcript text file export will create a tab delimited text file based on the data in the transcription window. This export only works if a transcription window is selected and will export all the transcribed rows in the transcription window, separating each column by a tab character.

To use, open an existing transcription window with data, choose File > Export > Transcript text file... Name and choose the location to save the file.

This format is very common when dealing with transcriptions. A tab delimited file can be easily imported into most spreadsheet programs like Microsoft Excel or other third party applications.

The first column is the time stamp for the start of the instance or utterance, the second column is code name or speaker, the third column is the text or utterance itself and the remaining columns are used for labels or notes.

Here is an example:

00:00:03:84	*Matilda*	*Alexis, quit taking all my toys!*	*Angry*	
00:00:49:97	*Alexis*	*These are my toys, I had them first!*		*Upset*
00:01:25:85	*Matilda*	*No, you did not!*	*Fired up*	

Export Transcriber XML File

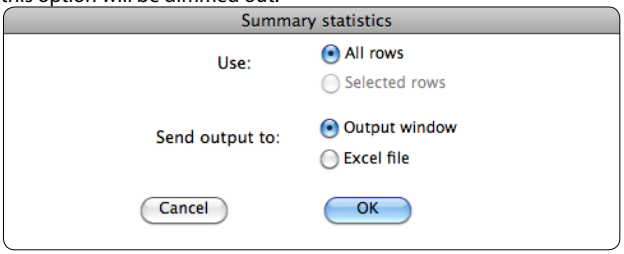
This export generates a Transcriber 1.5.1 compatible XML file from a transcription window. The format is very specific to this open-source project. To learn more about Transcriber, visit the official website. At the time of this writing, the website is http://trans.sourceforge.net/en/presentation.php.

Instance Frequency Reports

While one of the most basic exports, the instance frequency report is a very effective gauge for finding percentages and overall lengths of coded instance rows. It also shows instance count and calculates mean time. The export can be quickly viewed in an Output window or saved to an Excel file.

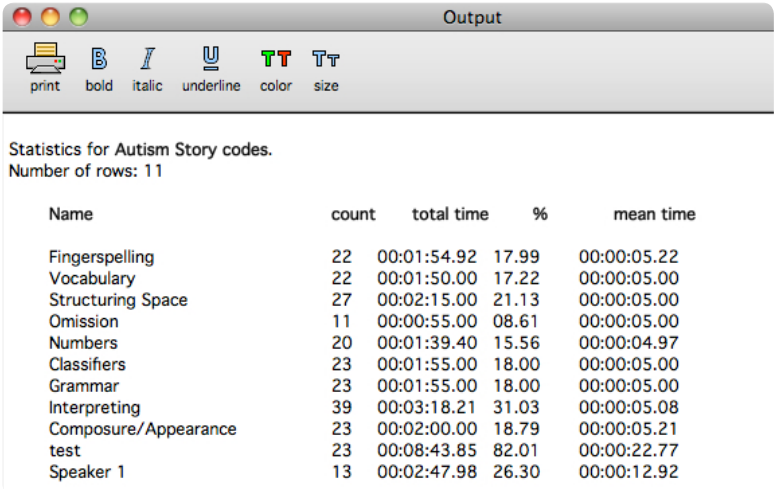
The following is a simple example on how to use this export.

1. Open a timeline with some coded instances, the more the better.
2. Select some specific rows or a range of rows in the timeline.
3. Choose File > Export Instance frequency report...
4. Set the Summary statistics window to use Selected rows. If no rows are selected in the timeline, this option will be dimmed out.



5. Set the Send output to: option to Output window.
6. Press OK.

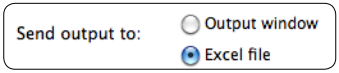
The results show a quick summary of each of the selected rows from the timeline. This export while very simple is really quite powerful if the instances are accurately coded.



Name	count	total time	%	mean time
Fingerspelling	22	00:01:54.92	17.99	00:00:05.22
Vocabulary	22	00:01:50.00	17.22	00:00:05.00
Structuring Space	27	00:02:15.00	21.13	00:00:05.00
Omission	11	00:00:55.00	08.61	00:00:05.00
Numbers	20	00:01:39.40	15.56	00:00:04.97
Classifiers	23	00:01:55.00	18.00	00:00:05.00
Grammar	23	00:01:55.00	18.00	00:00:05.00
Interpreting	39	00:03:18.21	31.03	00:00:05.08
Composure/Appearance	23	00:02:00.00	18.79	00:00:05.21
test	23	00:08:43.85	82.01	00:00:22.77
Speaker 1	13	00:02:47.98	26.30	00:00:12.92

This feature allows you to view:

- The number of times each code was used in the timeline.
- How much time those actions took.
- The percentage of the total time those codes were used in relationship to full length of the movie.
- The mean time of the instances in each row.

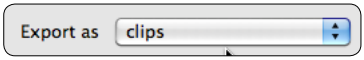


Using the Send output to Excel option, graphs and other meaningful calculations can be done very quickly. This is a truly powerful little feature.

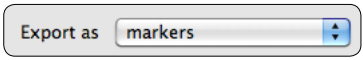
Export Final Cut XML

The Final Cut XML export creates a XML file with instance information that can be imported into Final Cut Pro 6.0 or greater.

To use this export, select some instances in a timeline, choose File > Export > Final Cut XML... There are two export type options in the save dialog at the bottom: Clips & Markers.



The Clips option will export each instance as a clip in the project bin. So, each instance will be row in the clip bin and treated individually.



Markers is the other option. The instance movie start and end times will be imported into Final Cut as Markers to the timeline movie. Instance information such as labels is included in the marker making it convenient to see data about the marker. See the Final Cut documentation for more information.

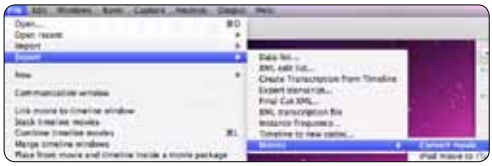
Both formats of the file that is created will have all the clip information including row, instance number and transcription information. The row name and instance number will appear as the name of the clip or marker in Final Cut. The timeline file name will appear in the master comment 1 section of the bin and the transcription notes will appear in the clip comment section of the bin.

Note: The XML file references the movie data which is likely a reference movie, moving the source movies will disconnect the media and the clips will have to be relinked in Final Cut. There are some situations that can cause Final Cut troubles when resolving the movie references that are based on other movie references and so on. It is best to try not have a lot of movie references built on top of each other. The closer the source movie is in the data referenced in the XML file, the better the chances everything will work consistently.

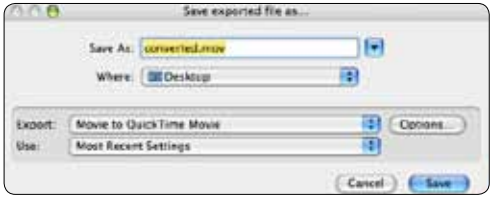
Converting Movies

Any movie can be converted to another format using the convert movies features in this software. If Studiocode can view the file, it can be converted in some way to another format using this system.
The standard format for captured movies is DV. The DV format creates very large files, approximately 13.8GB of hard disc storage per hour of video. These files will fill up an internal hard disk very quickly. To save space, we recommend converting the files into an alternate format. Follow these instructions for a simple and fast method of converting any movie to a MPEG-4 format that is suitable for coding, editing, analysis, and presentation.
NOTE: Converting is commonly referred to as compressing since the purpose in most cases is to reduce (compress) the size of the file. Converting the movie creates a stand alone movie.

1.Open an instance movie from a timeline that has a video linked to it. Set the video window size to half of its natural size. So, if your video is 720x480, set the movie size to 360x240.



2.Choose Convert movie from the File > Export >Movies menu in the main menu bar. This opens the Save exported file as... window where you can set-up all the options for the conversion.



3.Choose Movie to Quicktime Movie from the Export drop down menu in the window. Then, press the Options button to configure the specific movie conversion settings. The Movie Settings window will open and the Video, Audio, and Internet settings can be changed.

4.In the Video area of the Movie Settings window, click on the Settings button. The Standard Video Compressor Settings window will open. In this window, configure the following: Frame Rate = Current Key Frames = All Compressor Quality = Medium Data Rate = Automatic

NOTE: Frame rate will be the same as the original. Every frame will be a key frame which converts a file that can be easily edited. Compressor quality at medium and the data rate at automatic will produce an acceptable movie where the algorithm will determine how to best convert the movie from various frame samples from the entire movie.

5.Click OK to save the settings.

Next, configure the Audio settings.

6.In the Audio area of the Movie Settings window, click on the Settings button. This will open the Sound Settings window.

7. Set the Format to AAC, the Channels to Stereo (L R), the Rate to 48,000khz, Render Settings to Normal, and Target Bit Rate to 128kbps.

NOTE: These audio settings will create a CD quality audio track in the converted movie. If audio is not important, uncheck this option in the Movie Settings window and no audio will be exported. This will make the resulting file smaller, but when compared to video tracks, audio tracks are extremely small in size. So, in the long run, not choosing to use audio saves negligible hard disk space.

8.The last area in the Movie Settings window are the internet streaming options. If you are going to use the movie to stream from a file server on the internet, then you should select the appropriate settings as defined by the host of the server. For this example, uncheck Prepare for Internet Streaming options. For general use these settings should be turned off.

9. With the Video and Audio check boxes checked and the Prepare for Internet Streaming unchecked click the OK button in the Movie Settings window.

10. In the Save exported file as window, type in a name and target location to export the file.
11. Click OK to start the conversion process.

After the conversion is complete, these settings will be saved as the default settings. So, in most cases, they do not need to be set up again.

Permanent custom options in the movie format drop down menu can be configured for individual users. Contact Sportstec for help doing do this

This movie conversion example is very basic and does not fully explore all the options that are available. This is a very complex topic and for the purposes of this manual, we will not offer an explanation for every compressor and its various options.

Using the settings described, you will likely find varying results over time. Some movies will be smaller in file size even though they are similar in length. Other times you will see quality differences in two similar movies. Because each movie is different in shot, composition and length, you will have varying results when translated by the compressor's algorithm automatic settings. But using automatic settings is a good way to start understanding how to convert movies.

Here are a few tips to experiment and find what will work for you best for your particular purpose.

1. Use a short instance to experiment with different settings. Waiting for long conversions is tedious and you will not always get the desired results.
2. Set the frame size of the movie first. In most situations, 360x240 NTSC or 360x288 PAL is the right frame size to use. Studiocode will use the instance movies window size for the conversion size. There is a great difference in time to convert a movie that is twice that frame size.
3. If file size is most important, try setting manual data rates. This will guarantee the file size and forces the conversion to use the same amount of data per frame. Start with 6400 kbps. Automatic settings will find the best data rate which can vary greatly from movie to movie.
4. Try using different compressors. Use H.264 or Sorenson Video to convert a small clip and compare the results. Some compressors are better for different types of video. MPEG-4, H.264 and Sorenson are popular compressors, so sharing these formats will be compatible with any system running Quicktime 7.0 or greater.
5. Adjusting the key frame intervals can make a big difference when video quality and size are concerned. Try setting the keyframes to 25 instead of all or 1 frame. Key frame settings greater than one every frame creates movies that will not be suitable for coding, editing, and slow motion analysis. Spreading out the key frame intervals, is recommended when the video will be distributed for playback only via internet or email.
6. Video acquisition is probably the most important aspect to converting movies. If the video is poor quality to begin with, converting it will not make it better. Try to get the best copy of the video possible or get proper training on how to use your camera. Fast panning or zooming can cause conversion results to look very pixelated. To achieve the best results, avoid quick camera motions.

Drag and Drop Reference Movies
A quick and easy way to create reference movies for batch converting is to drag from the video in the movie window and drop onto the desktop. This will create a movie clipping on the desktop. As you drag and drop, rename the movies, so you don't forget what video is in each one. Remember to select the segment of the movie in the instance movie timeline for which you want to create a movie clipping.

Direct Movie Exports

Beyond the standard Convert Movie export, there are 4 direct movie export features found in the File > Export > Movies menu. To export a movie using one of these options, create an instance movie and select the export from the menu. The export will automatically take place. Each of these direct exports do not have any customizable options.

iPhone movie to iTunes

This export converts the instance movie to an iPod ready format and sends it to the iTunes library. Depending on the iTunes preferences, it could be added to the library or be copied into the library.

AppleTV movie to Desktop

If you use an Apple TV device, this export will create an Apple TV ready file that can be synchronized to the device. When chosen, the file will be automatically exported to the desktop. This export also produces very high quality video.

Selected instances by row to iPhone movie to iTunes

Upon export, each row will be exported as an individual movie with the selected instances in time sequence, selection order cannot be used. The movie name will be the row name. Once the export is complete the movies are sent to the iTunes library.

A trick to using this feature, is to duplicate rows and change their names, the movie will take the name of row and will appear nicely organized in iTunes. Another clever way of using this feature is to make new timeline rows from label columns in the matrix.

Flatten movie

The flatten movie export is used when you wish to have the overlay text burned into the movie. The overlay text is a SportsCode feature only and will not be recognized by any other editors or players. Use this feature when creating content that will be distributed to an audience that do not have SportsCode or if you want to use it in a DVD project or other editing software.

The movie is compressed using the identical codec of the source movie. Some codecs will work better than others when rendering the text. It is possible that when using MPEG-4 or H.264, the text may not look as good as the original.

Convert movie package...

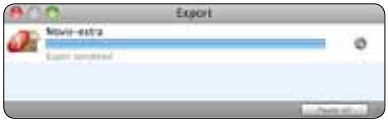
A movie package can be easily converted to another format using the convert movie package... feature. The feature creates a copy of the package with the timeline file included, converts all the movie parts in package into the new format, creates a new reference movie for the timeline based on the newly formatted files and links this movie to the timeline.

To use this feature, open an existing timeline to be converted, choose File > Export > Convert movie package..., set the desired compression settings and name plus location for the new package.

An additional option to this, is to have the process flatten the movie once the export is complete. This will create a single file from all the movie parts inside the package. It is recommended to do this as it makes the package void of file references. A definite plus in terms of file portability, also it allows the file to be extracted from the package and directly uploaded to Sportstec Stream or used more easily in some other workflow.

When the options are set and the Save button is pressed, the export movie window will appear.

Each movie part in the package will be converted until all are converted. The export will continue converting all the parts in the package until it is finished or the application is quitted. If the application is quitted while there are still movie parts left to convert it will start up again when the original movie package is opened again. Once the export is complete, a movie package with same will be found in the same folder as the original capture.

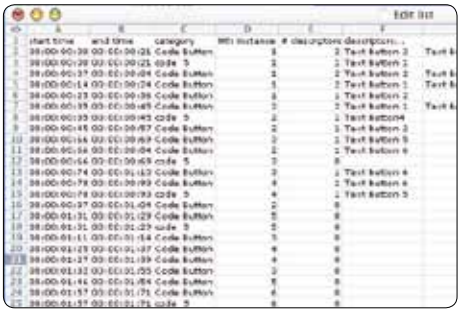


An export can be paused, cancelled or deleted anytime. To pause press the pause icon in the row to the right of the progress bar. To cancel press the x icon to the right of the progress bar. To delete a row in the queue, select the row and press DELETE on the keyboard.

The export window supports multiple items in the list. It is based on a first in first out queuing system. To add more items to the queue during capture, say for converting multiple packages over night, open a timeline package, select the timeline window, then choose File > Export > Movies > Convert movie package..., select the movie format and destination and add it to the queue. All items in the queue will be handled when the previous item above it in the queue is completed. This is especially useful for archiving and hard disk space saving purposes.

Create an Edit List

An Edit list provides you with a complete list of events in play order. Edit lists are great for creating customized reports in Excel. Using Excels graphs, functions and macros you can create some very informative reports from the timeline data.



1.Open a timeline with the data to be exported.
2.Choose Edit list from the File > Export menu in the main menu bar.
2.Save the Edit list to a file name related to the performance you are analysing and choose a target location for the file.
3. Click on Save.

To Copy a Movie Frame to Output

If you want to take a movie frame and transfer it to another application such as Word or PowerPoint, find the frame of video you want to use in a movie window, Choose Copy movie frame to output from the Analysis menu in the main menu bar. The frame/picture you've selected will be copied to the output Window. You can now drag a box around the picture and copy it to the clipboard, from there you can paste it into another application or print it.

Text Window

The text window is a simple text editor. It is commonly used as a notepad or paste board. A clever way to use the window is as a paste board. Movie frames can be copied from an instance movie and pasted in this window where they can be collected, then later pasted into another application like Word. The text window can be saved just like any other text document.

Mac OS X Snapshot Features
Here are some shortcuts built in Mac OS X for creating snapshots of the screen or specific windows.
SHIFT+COMMAND+3 will save a picture of the screen to the desktop.
SHIFT+CONTROL+COMMAND+3 will turn the mouse cursor into cross hairs where you can click and drag a selector on the image you want to take a snapshot of. It saves the image as picture on the desktop.
SHIFT+COMMAND+4 will save a picture of the screen to memory, so it can be pasted into another open window.
SHIFT+CONTROL+COMMAND+4 will turn the mouse cursor into cross hairs where you can click and drag a selector on the image you want to take a snapshot of. It saves the image to memory, so it can be pasted into another open window.

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iCODA

Designed as the perfect complement to CODA for portability, iCODA runs on iPhone, iPod Touch and iPad for truly mobile data capture. Code anywhere, any place then download your data to CODA to analyse what you have captured, and even ,(by transfering the file to Studiocode,) link your coding to video.

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