



User Manual

v. 4.0.1, April 2024
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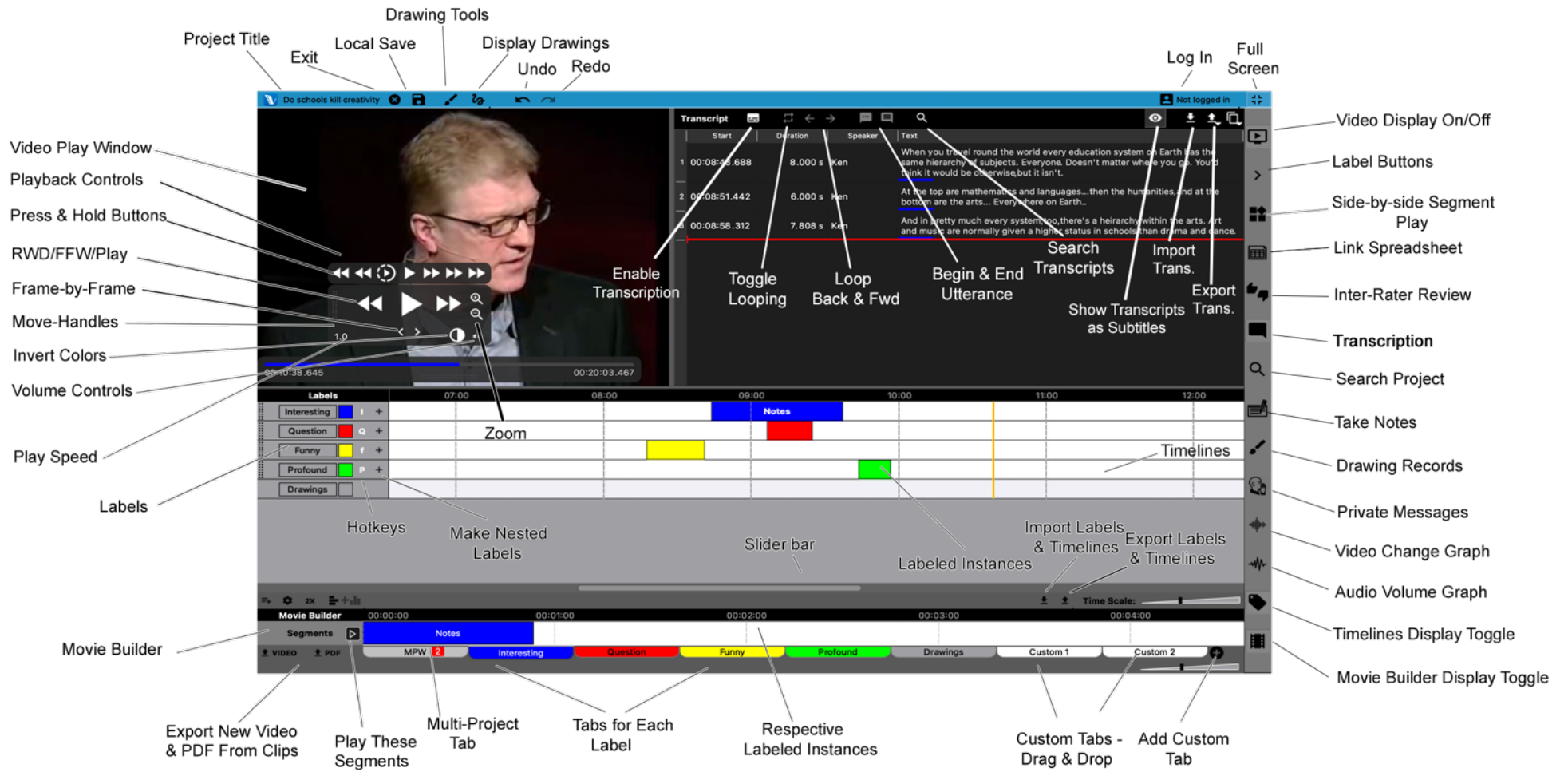
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You can find short tutorial videos on V-Note here:

<http://bit.ly/2cqBRxM>



Overview Diagram



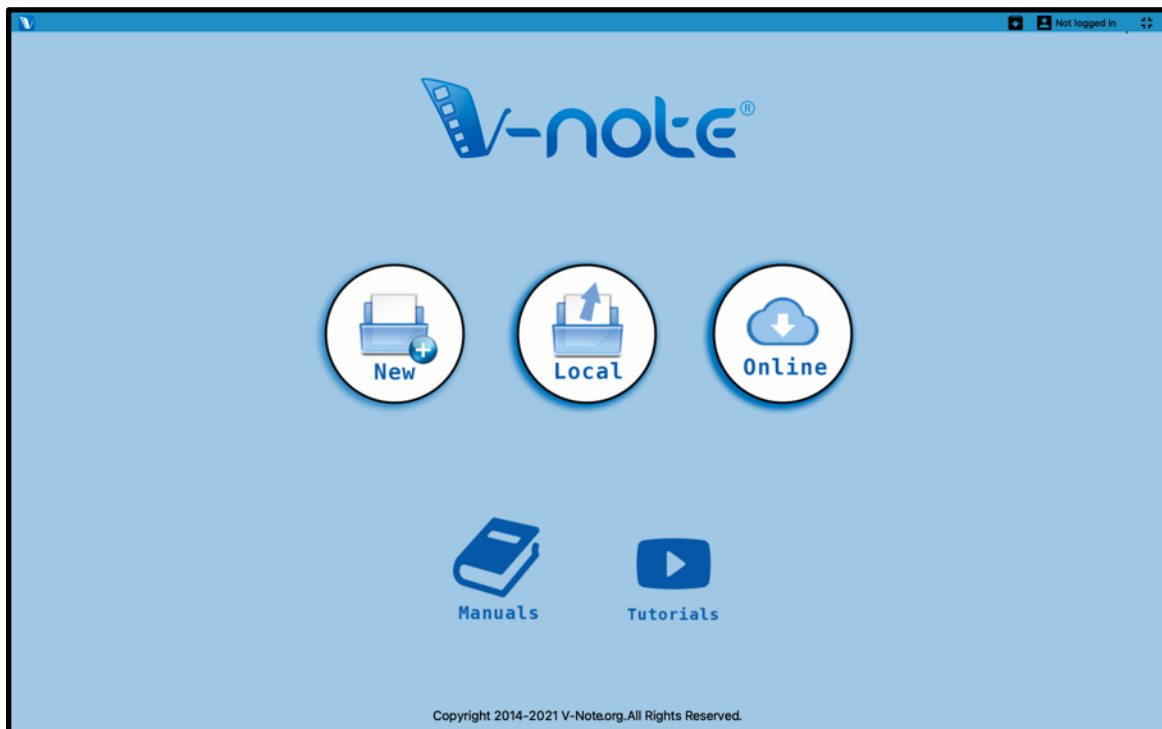
Chapter 1: Getting Started

An Overview of V-Note

V-Note is designed for those of us who work with videos. Using multiple timelines, hot keys, online sharing and collaboration, transcripts, drawing, raw data output, and numerous other features, V-Note can offer a video analysis experience like no other.

Opening V-Note

When you first open V-Note, you will see the opening screen. From there, you can choose to open (left to right): a new project; a locally saved project; or an online project.



At the bottom, you can also click on Manuals or Tutorials to view these. Note: your web browser will be opened and directed to up-to-date resources.

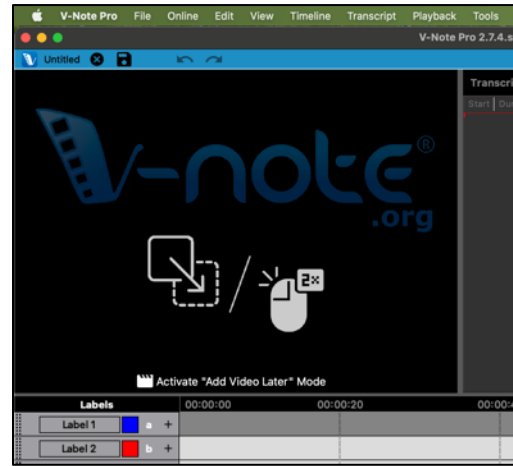
Mouse to the top to view menu options.

We will click “New” to begin.

Bringing Videos into V-Note

Once you click “New” on the blue splash screen, the first thing you may want to do is bring a video into your V-Note project (V-Note’s main file format which maintains and associates all of your media, transcripts, timeline data, etc). You can do this by opening a folder on your desktop and **dragging in a media file** in the following formats: .mp4, WebM (VP8), H.264, .mov, *.wmv, or .mp3.

Alternatively, you can **double click** the video play window (black space) **to browse** to a video file.



Multiple videos can also be added by dragging them into the player window or by clicking, on the top menu: > File > Edit Playback Sources.

*.wmv files are only supported in a Windows® environment

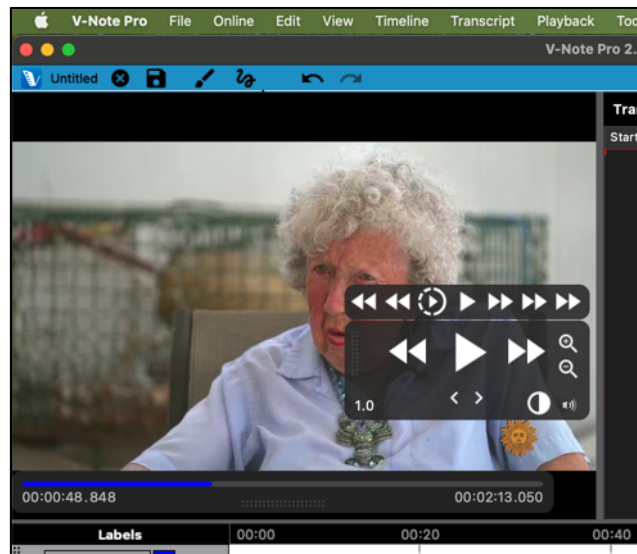
Playing and Navigating a Video

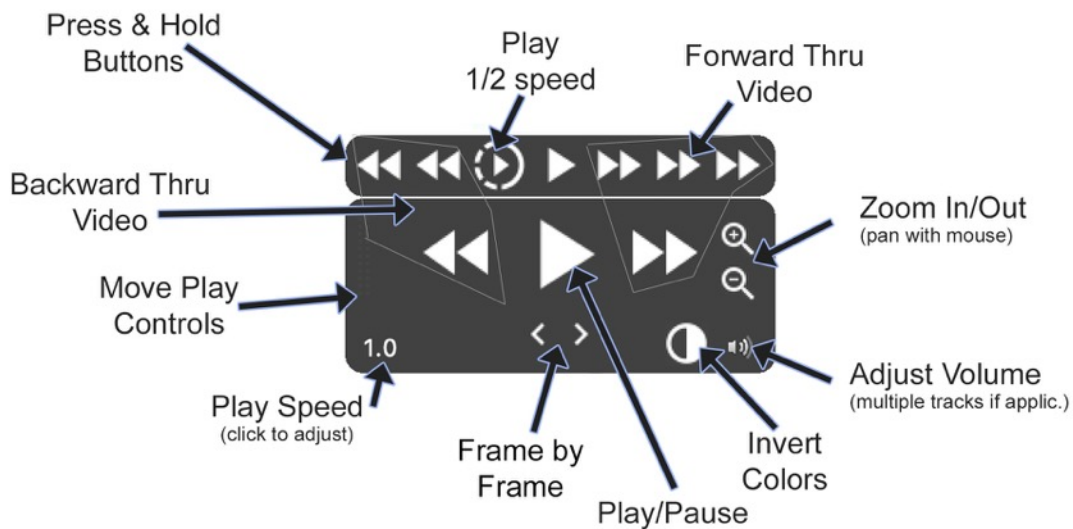
To show the player controls, move your mouse over the video. The controls will appear. They will then disappear after a few seconds of no mouse movement, to allow better viewing.

To **start or stop play**, click on the large **triangle** representing “play.”

The bar below the video play window will provide a **preview thumbnail of the video** when you hover over it. This can help you to rapidly locate parts of a video.

To change the play head position you can single-click on the timeline you can click anywhere on the blue bar below the video or double-click on the timelines. You can also drag the play-head left or right to ‘scrub’ through the video.





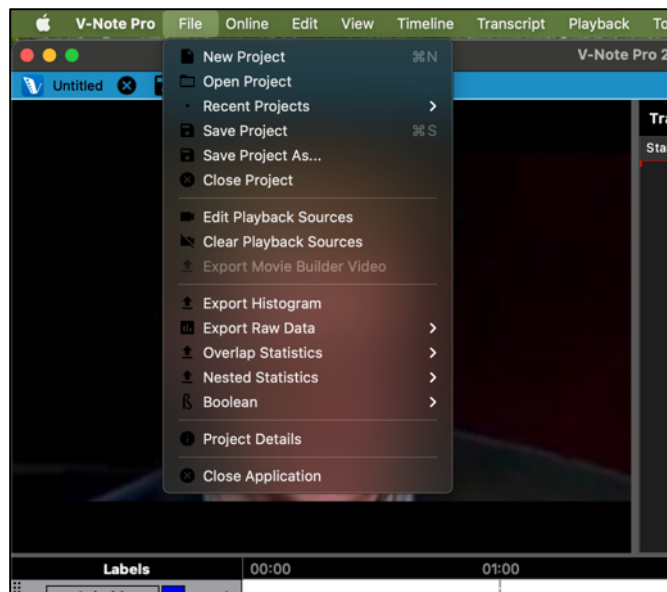
Note: all buttons' speeds can be adjusted in >Preferences > Playback Settings

Removing a Video from V-Note

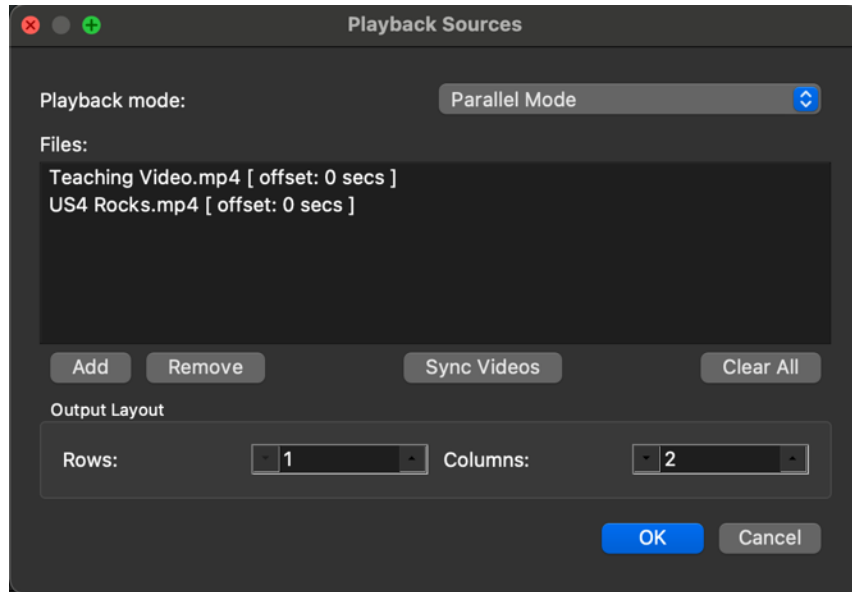
To remove a video or audio file from your V-Note project you can click on the File menu on top. Choose **“Edit Playback Sources.”** Next, select the media file you wish to remove and choose **“Remove Audio or Video.”**

Note: you cannot remove a video from a file that has already been saved to or downloaded from the cloud. Instead, start a new project.

If you want to **locate the video file from the earlier-saved project**, you can browse to it by clicking: File Menu > Edit Playback Sources. Then, Right-Click the video. This will allow you to browse to the file.



If a project has been saved from a shared project on our cloud-based streaming services, the related video will be saved only as a temp file or it may not be saved locally at all, depending on their chosen security settings. Please contact the original owner to obtain the original.



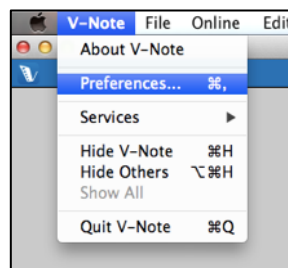
Custom Settings

V-Note allows you to make functional changes such as: function-key assignments (e.g., shortcut keys for: save project, advance looping, etc.), languages and the default font used by the program.

This functionality is accessed via the “Preferences” or “Settings” menu. This is **accessed differently depending on platform**. It is the only difference between Mac® and Windows® with V-Note, as it is a function of its respective operating system.

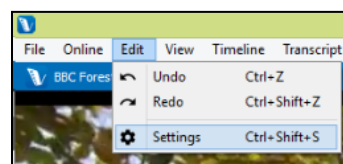
On a Mac:

Choose top menu: **V-Note > Preferences**



On Windows:

Choose top menu: **Edit > Preferences**

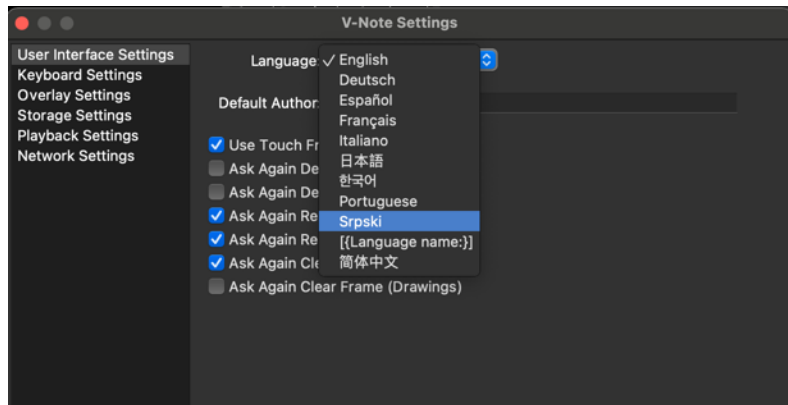


Changing V-Note's Language

To change the language in which V-Note is displayed, choose “Preferences” or “Settings” per the previous page’s instructions. Then Choose: “User Interface Settings” and then: “Language.” Next, select your preferred language.

V-Note can be displayed in: **English (US), German, French (FR), Spanish (MX), Italian, Portuguese, Mandarin, Japanese, Korean, and Serbian.**

You can also **contribute a translation** in your language which we can usually add in a few days. Click: Tools > Translation Editor > Add New Translation. Please note that translations must be complete and in one complete file before they can be accepted. You may

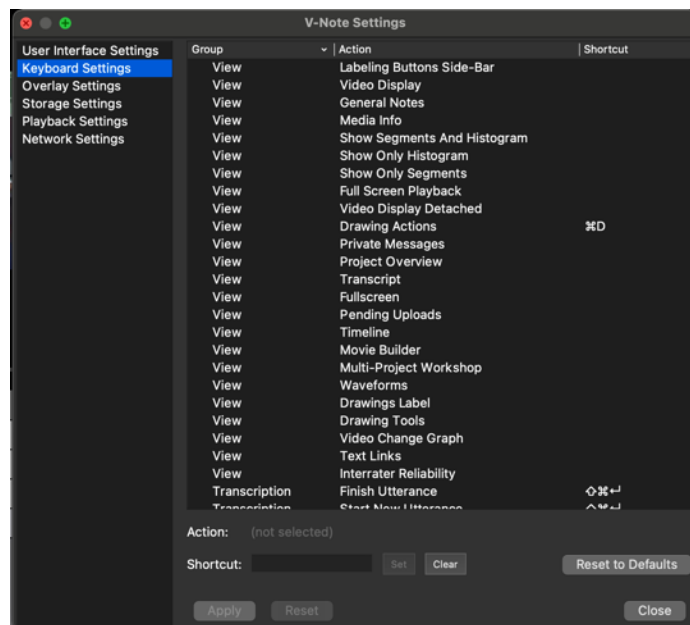


also request us to add a new language here: info@v-note.org

Changing Shortcut Keys

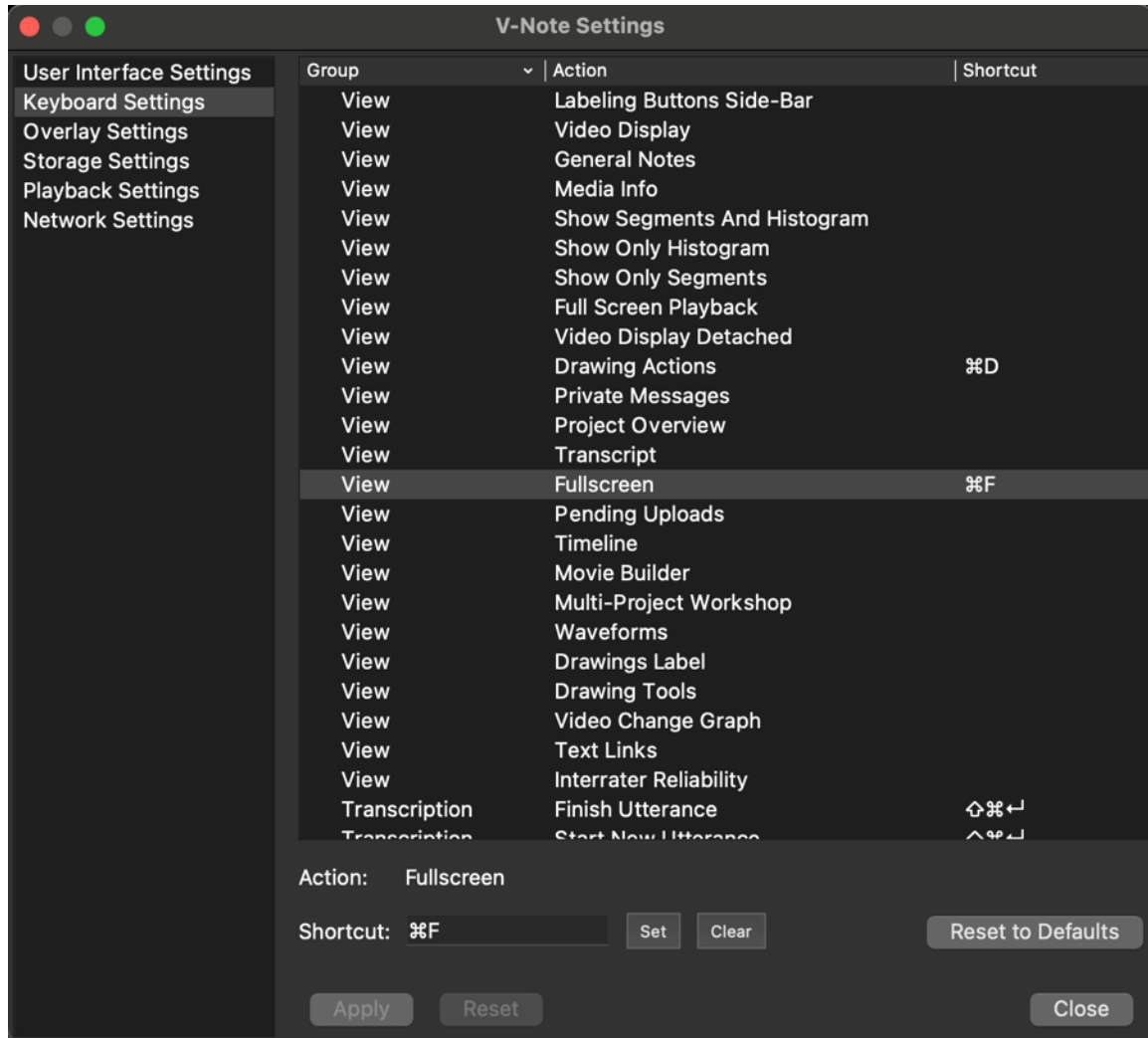
You can change the keys used to control certain functions in V-Note. When viewing “Preferences,” accessed as described above, select “Keyboard Settings.”

For example, saving a project (CTRL + S; ⌘ + S in MacOS); beginning and ending an utterance when transcribing (CTRL + Shift + Enter; ⌘ + Shift + Enter in MacOS), etc., can all be given new key combinations. Note, however, that single alpha-numeric keys must be avoided, as these may be used when typing words in transcriptions, for example.



Changing Shortcut Keys: An Example

If you wanted to change “View - Full Screen” (see image below) from unassigned (default) to CTRL + F (⌘ + F on Mac OS), then select “View - Full Screen” with the mouse so that it becomes highlighted. Next, **type the key combination of your choice** into the text bar below the list next to the word “Shortcut.” Next, click on the “Set” button; and finally, click “Apply.”



Once the change is made, CTRL + F (or, ⌘ + F on Mac OS), when pressed together, will toggle full screen on and off.

Overlay Settings – Adjusting Subtitles

Overlay settings allow you to select a font, a font color, and font size for your subtitles, which display over top of the video. Subtitles can be imported from .srt, .csv, .xlsx; or they can be made within V-Note by transcribing.

Adjusting the Size of Parts of V-Note

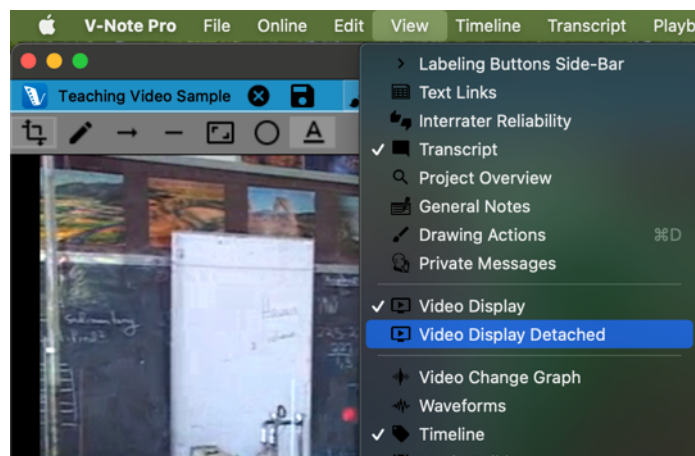
You can adjust the size of your video play window, the transcription window, and the timeline window, etc., by **simply placing your mouse's cursor between any two windows, clicking, and dragging** in the direction you choose. The Movie Builder window is not able to be reduced in size.

This allows you to emphasize the function of your choice at any given time. For example, you can make the video play window or transcript window nearly full screen if you desire.

You can even make the transcription and timeline windows disappear by continuing to drag the video window's edge all the way through the other windows. You can still continue to use hotkeys even if the timeline window is shrunk from view, for example. These can be useful when using an audio-only project for example. Example screen setups are shown below.

To make the video **play window as fullscreen**, double-click it.

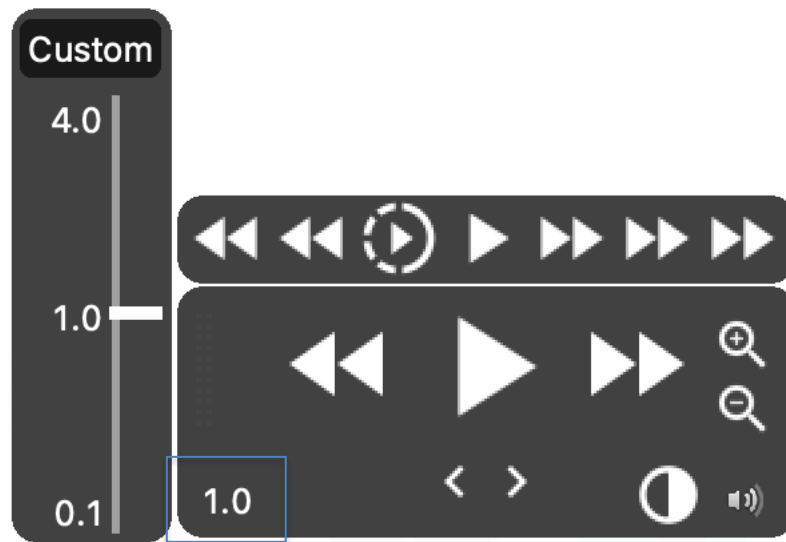
To **detach the play window**, click top menu: > View > Video Display Detached. This will permit you to drag around and resize the play window separately from the timelines or other element of V-Note, for example, onto a second screen. This can also furnish more vertical space for timelines.



Adjusting Playback Speed

Playback speed can be adjusted to be made **faster or slower**. Simply, **click on the 1.0** button in the lower right of the video player controls and adjust the slider up for faster play or down for slower play. 1.0, in the middle, is normal play speed.

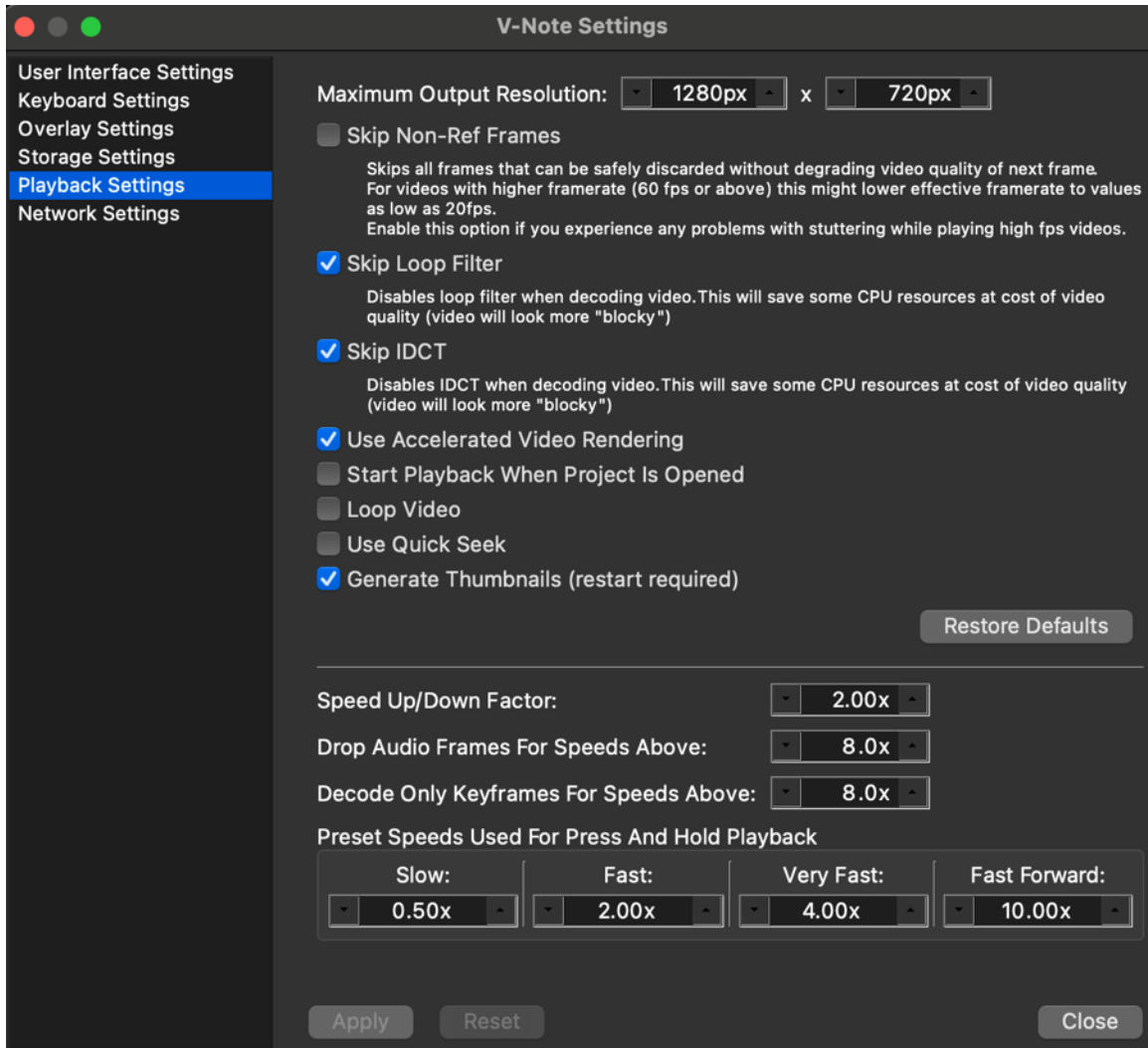
Clicking “Custom” allows you to input via the keyboard an exact speed for playback.



Note that sound will play sped up until 10X speed, after which, the sound will not be reproduced, this is in part to reduce processing load and in part to avoid unintelligible and potentially uncomfortable high-pitched sounds.

Adjusted speed will apply anytime the play button, press-and-hold play button and half speed buttons are used. It must be changed again to revert to a normal (i.e., 1.0) play speed.

You can change the preset values for the FFW and RWD buttons via the menus for preferences / settings on page 9. Then, choose “Playback Settings.” See image on next page.



Chapter 2: Timelines and Labels

What are Timelines, Labels?

When V-Note first opens, there are four timelines with four labels that are open by default. The default labels, shown in the image to the right, are “Label 1,” “Label 2,” “Label 3,” and “Label 4.”

These are just to the left of their corresponding hotkeys and timelines, which are white and punctuated by times above on the black bar (i.e., 00:01:00).

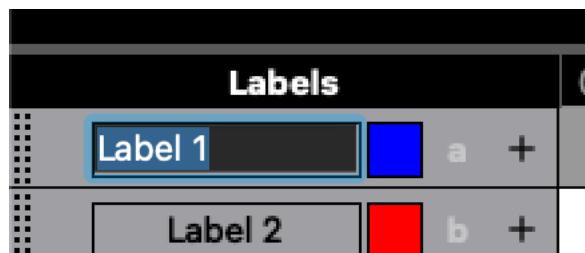


If you want to bring the play head to 01:00, a double click at this point on the timelines (anywhere outside of a labeled instance) will bring the play head to this position. You can also scrub the video by dragging the playhead.


The drawings label can be toggled on/off under the “View” menu on top.

Creating, Changing, and Deleting Labels

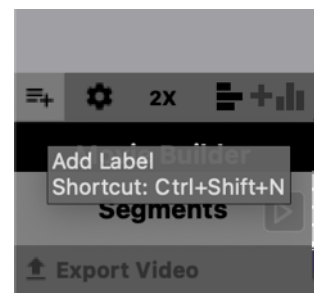
Labels, including the default ones, can be changed, deleted or added. **To modify a label**, click on the text to edit and type in a new label, as shown. This could be anything you might wish to mark in the video (e.g., a name of a person, questions, “interesting,” etc.).



You can also **change a “hot key”** – the key that is pressed to begin and end coding (i.e., marking a labeled instance) by clicking on the “hot key” (e.g., A, B, C, etc.). Similarly, clicking on the color square allows you to **change the color of the label**.

To add a new label, click on the  button. New labels will appear below existing labels. These can be changed in label, color, hot key, in the same way shown above.

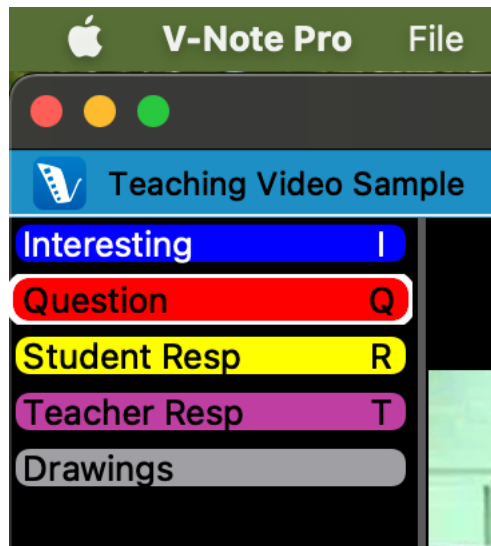
To delete a label (including the default ones), a right click over the label (or Control + Click on a Mac) provides the option to Delete Label.



Note: you can create **as many labels as you would like**. Use the “Shift” key to increase the number of labels. “A” is different than “a” as a label, then.

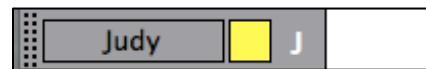
Even if you run out of keys, you can make more buttons. You will then want to display the clickable buttons to the left of the screen. Display these by toggling on the “>” button on the top right of the screen on the gray bar. The buttons display as shown in the image below, to the left of the video play window.

Unlike the timeline labels below, these are clickable and can be displayed in the hundreds, as they will shrink to accommodate large numbers of labels.

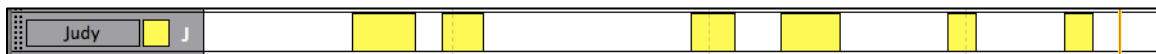


Labeling Instances of Video

To label an instance of video – for example, parts of the video where Judy is talking – first create a label for Judy with the hot key “J,” for example.

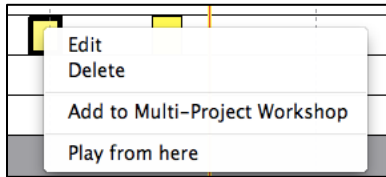


Next, watch the video. Whenever Judy speaks, simply press the “J” key to start and stop the label on the time line for Judy. The resulting labeled instances on the timeline will look something like this:



Changing, Editing, and Deleting Labeled Instances

Labeled instances (i.e., coded instances) can be changed, edited, or deleted. Also notes can be made on them.



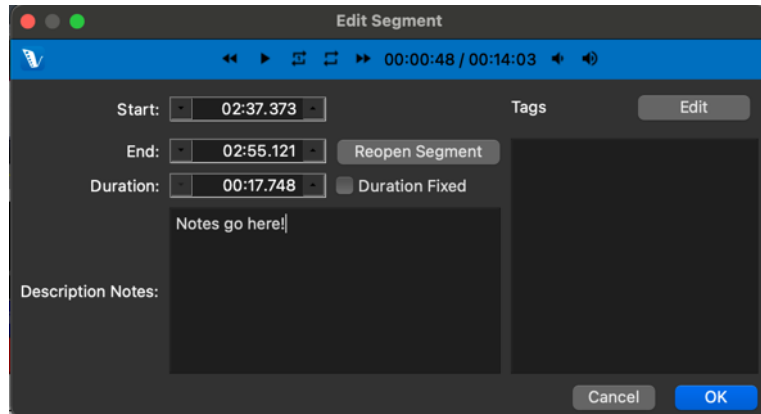
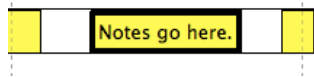
A right click over a labeled instance bar allows a user to **delete a labeled** instance as shown to the left.

Holding the mouse over center of the labeled instance and clicking allows you to **move the labeled instance** left and right.

Holding the mouse cursor over the left and right edges allows you to **stretch or compress the labeled instance** from that side by dragging the edge left or right.

To **make notes** on the labeled instance, **double-click** it. You will see this window:

The note will appear in the labeled instance as shown below:




Any notes extending beyond the labeled instance box will be elided for timeline display but saved entirely for viewing in the dialogue above and for export.

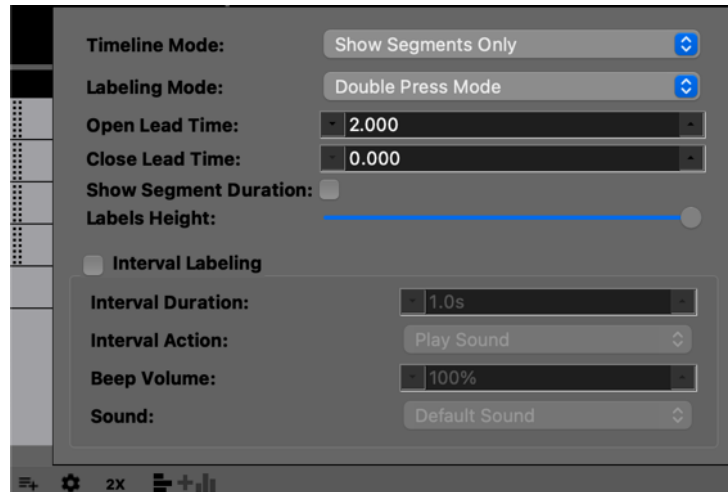
Adjusting the Function of Making Labeled Instances

Directly below the timelines, on the gray bar are some options to change how labeled instances are made. There are two general choices: Double Press Mode and Single Press Mode.

When watching and coding a video, if you would like to **start and stop the labeling of the instances with two presses of the hotkey** (i.e., one to start and the other to finish), then choose **“Double Press Mode.”** If, however, your instances are all about the same time, you can choose **“Single Press Mode”** and preselect a time for all labeled instances.

You will then only need to press the key once to create (i.e., start and stop) a labeled instance on your timeline.

The  **2X** buttons allow you to change between the two types. The **cog wheel provides detailed access** and the 2X / 1X button will toggle between Single Press and Double Press modes for all hot keys, unless individual buttons are set otherwise.



To **set individual buttons irrespective** of the global setting (double/single-press modes), right click on the gray area near the name of the label (left of the timelines) and choose “Labeling Mode.”

The lead-time of labeled instances can be set for both. When watching and coding a video you may need a few seconds, for example, to recognize that a question was asked, a goal was indeed scored, etc. By setting the lead-time open to 2.0 seconds, for example, when a hot key is pressed, the beginning of the labeled instance is placed 2 seconds before you hit the hotkey. Similarly, the close lead-time (only on “Double press mode”) can place the end the labeled instance before the time at which you pressed the hot key.

Exporting and Repurposing Labels and Timelines Only

If you would like to **reuse the same labels in multiple projects** (e.g., players’ names, teaching rating categories, etc.), V-Note makes it easy.


There are two buttons under the timelines at the right called: “Import Labels/Timelines” and “Export Labels/Timelines. These buttons are show below. They allow you to export and import (i.e., bring into to another project) your labels and/or timelines.



When you click on “**Export Labels/Timelines**”  below the timelines you

can choose only to “Export Labels” (these are the buttons and hotkeys on the left) or both “Labels and Timelines.” This, latter option, may be useful if, for example, you have videos from multiple angles of the same event; this way the timeline labels would line up in the same way. If you do not have the new video of the same event to apply these to, you will likely want to only export the labels.

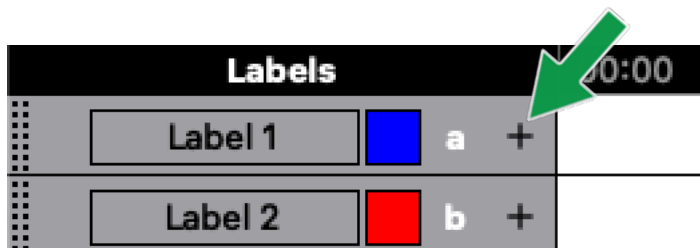
Note: the distinction must be made between these choices only when exporting. Once exported, these will appear as a .vntl file, which can only be opened by V-Note.

To **import labels** and timelines, use the “Import Labels/Timeline”  button. These files will become visible and able to be chosen for importing into a new project.

You **can align a new video** (with perhaps a slightly different record-begin-time) with the existing imported timelines more exactly by choosing on the top menu: > Timelines > Edit Timeline Offset.

Nested (Hierarchical) Labels (Codes)

Depending on your goals, you may find it helpful to use nested labels (codes) in your video analysis work. You can benefit in two ways: a quick visual scan of the timelines within V-Note reveals relationships of hierarchy; and you can analyze and compare codes within the hierarchy with our built-in descriptive statistics for nested codes to determine relative times, for example.

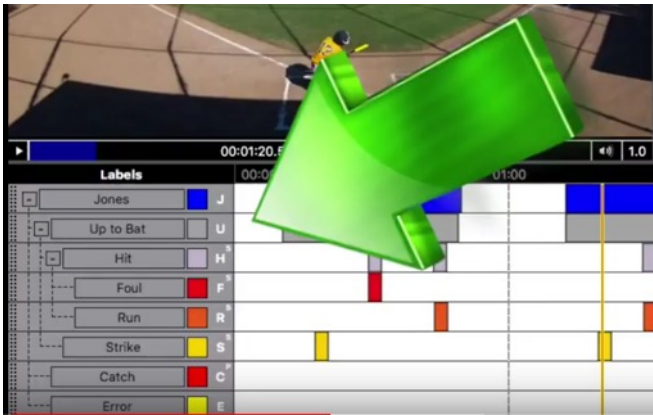


To Make Nested Labels:

- Click on the “+” to the right of the label name, color and hot key as shown in the image to the left
- Or
- Right click in the gray space near and around the label name and choose “Add Sub-Label”

Below is shown an example of nested codes for a baseball player. Note that “Jones” is the name of the player and other labels (codes) appear below.

“Up to bat” is one such code; below it are things that must happen when he is up to bat (i.e., sub-codes or nested labels) including: hit, foul, run, strike. “Catch” while still under “Jones” is not going to occur while up to bat, and this is shown by the labels’ organization.

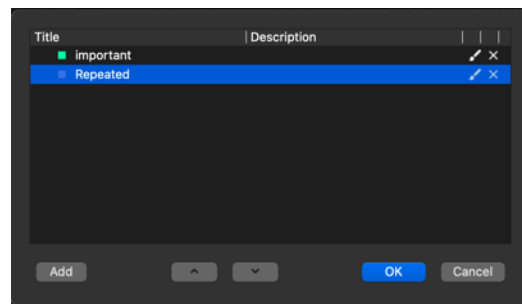


Sub-sub-labels and even further levels can also be made in the same way as described above. Note the labels to the right.


Analyzing your nested labeled instances can be done with our built-in descriptive statistics. Please see Chapter 15 for more on this feature.

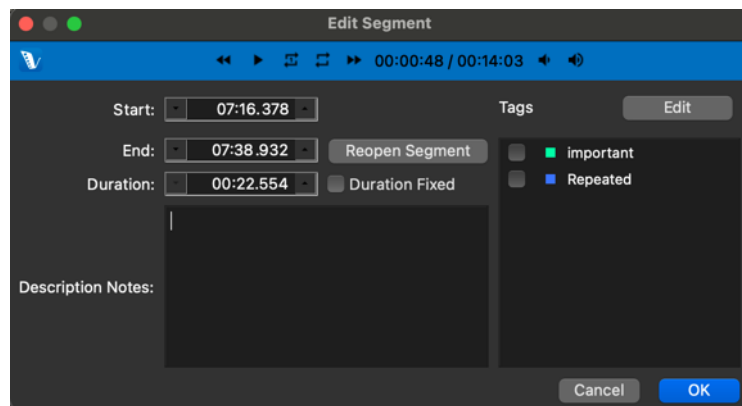
Adding and Using Tags

Tags are small markings that can be seen within V-Note and exported in raw data to further refine a cod. They could serve to mark a code as important, for example. **To add tags**, choose: > Timelines > Edit Tags. Then, click “Add” to choose a name and a color. Tags can be applied to any labeled instances (codes) regardless of hierarchy.



To apply a tag, double click any labeled instance to reveal the “Edit Segment” where you can add notes and edit start and end times. If you have created any tags they will be available to the right to be checked on or off.

Tags will appear as below on the top right corner of a labeled instance. In this example,  the green dot represents the tag. These will also export in raw data as described in that section of this manual.

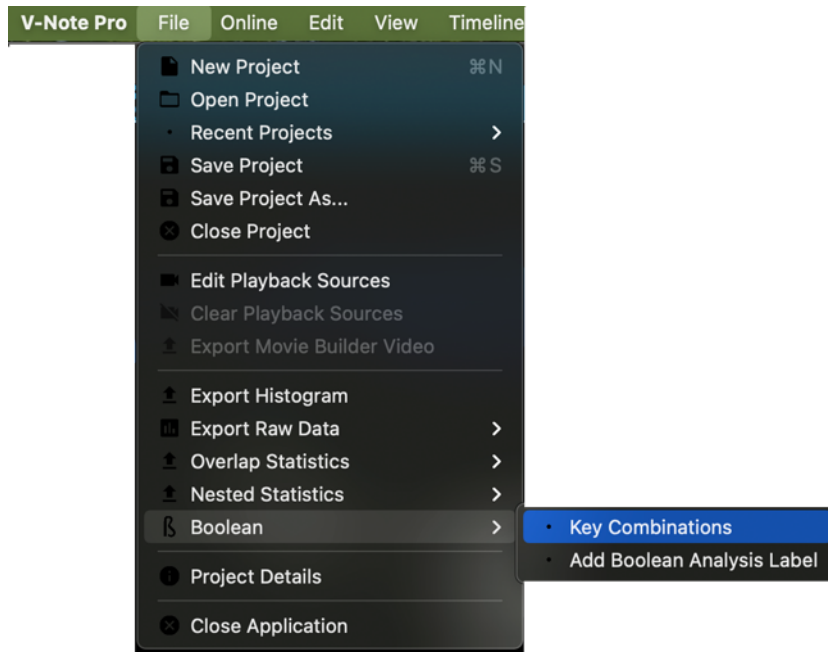


Boolean Key Combinations

V-Note allows you to combine hotkeys so that when one is pressed another is effected as well. This can allow you to avoid redundant keypresses and easily combine two or more labels (codes).

Boolean notation involves modifiers such as: AND, OR, NOT, NOR, NAND, and XOR.

To create Boolean combination choose: > File > Boolean > Key Combinations



On the following page are a few examples as they will be entered in V-Note.

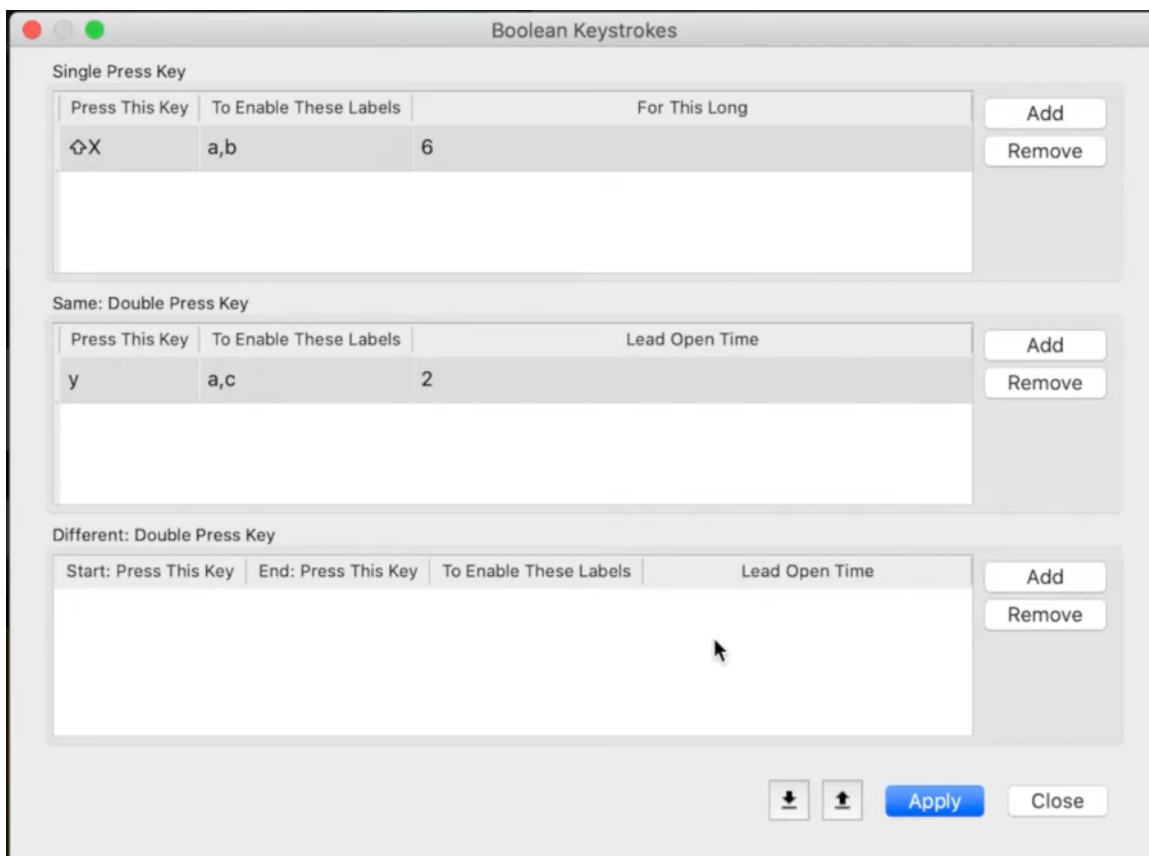
The **Single Press Key** section at the top shows that when

↑ + X (Shift + X) at the same time will apply the labels/hotkeys a & b for 6 seconds. This is a fixed duration because this is single-press mode. You may set any duration.

The same: double press key space allows you to start and stop multiple hotkeys/labels at one time with a single key for a duration determined by the pressing of the key. When the key is pressed the labels (codes) will be opened. When it is pressed again they will be closed. Note that it is possible to set an open lead time which can allow for your reaction time (e.g., taking a few seconds to realize, in fact, a question has been asked). This will place your labels a few seconds (or whatever time you choose) before the time at which you pressed the key. It is

not possible to select a lead close time; but the end time can be modified anytime by dragging the end to the desired position.

Different: Double Press Key allows for further customization while coding. If you begin a labeled instance (code) with a given key, multiple hotkeys/labels will be applied, then, depending on your ending hotkey (chosen in the moment), only the ones chosen per the ending-hotkey will be applied. All will apply initially and be shown onscreen as being applied, however. The extra ones will disappear upon ending.



Boolean Analysis Functions are detailed in Chapter 15 and are applied post coding to show points of specific overlap among codes or coders.

Chapter 3: Working With Projects

What is a Project?

A project in V-Note contains your video and all related parts into one file. When a project is opened in V-Note, it opens: your video, any transcripts made previously, any labels and labeled instances on timelines made previously, notes, drawings, interrater-reliability data, etc.

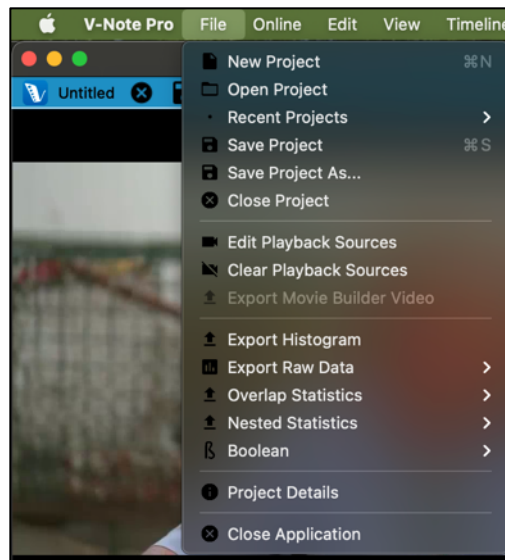
Saving and Opening a Project Locally

If you have opened a video in V-Note and added some labels and labeled instances as described previously, you can create a project by clicking the **“File” menu and “Save Project As...”** This will prompt a browse window where you can select a title and a folder for saving.

The icon of the saved project will appear as below. The extension on V-Note project files is .vpnr. When this project is opened in the future, it will immediately open your video and any parts added to the project such as transcripts or labeled instances.



BBC Forest.vpnr



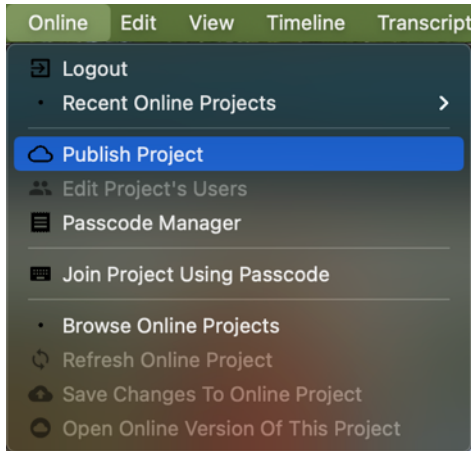
Publishing a Project Online

Once a project has been saved locally, it can be saved, or published online for collaboration with others, or for easy access from multiple devices.

To save a project to V-Note’s online servers you must have V-Note collaboration space with open time remaining. Some space is offered free for all users, so you can try this feature at no cost. If you would like to purchase more collaboration space for more or larger projects, you can log on here to do so:

<http://v-note.org/login>

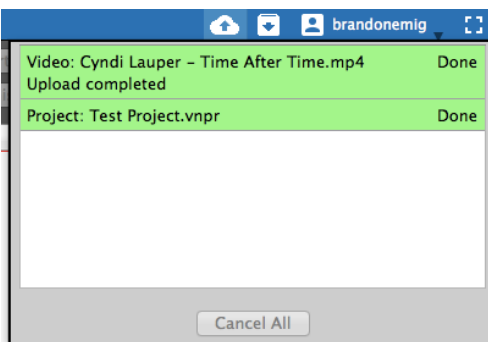
Note that **users with whom a project is shared do not require their own collaboration space**. Any project may be shared with as many users as many times as you wish.



You can click the “Online” menu on top and “Publish Project.”

Depending on the size of the video file and the speed of your Internet connection the upload may take from several minutes to several hours. Progress of the upload can be seen in the upper right part of the screen by clicking the cloud with the up arrow. When they show as “Done” and turn green, the uploads have completed successfully.

Note: uploaded videos will be converted to .mp4 file types of about 400 kbps for better streaming performance. Audio will be converted to mono 64 kbps



(equivalent sound quality to the common standard of 128kbps stereo). If stored locally, your video will continue to be played in original quality on the computer it was created and uploaded by default.

Your **videos and projects are stored securely** on our server, to be accessed only with your password behind an SSL certificate that provides encryption and secure

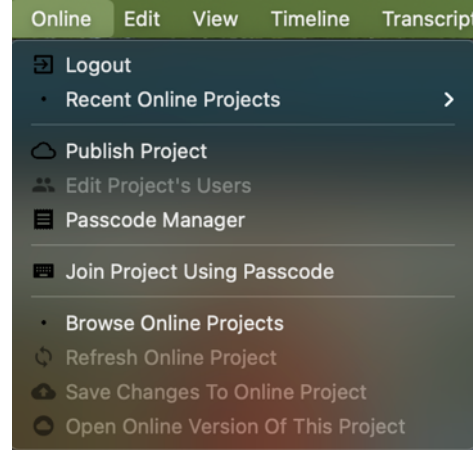
transmission to your device and only your device. When you share access to others working on the same project, they will have access to the video also.

Sharing a Project with Others

There are **two ways to share** projects with others.

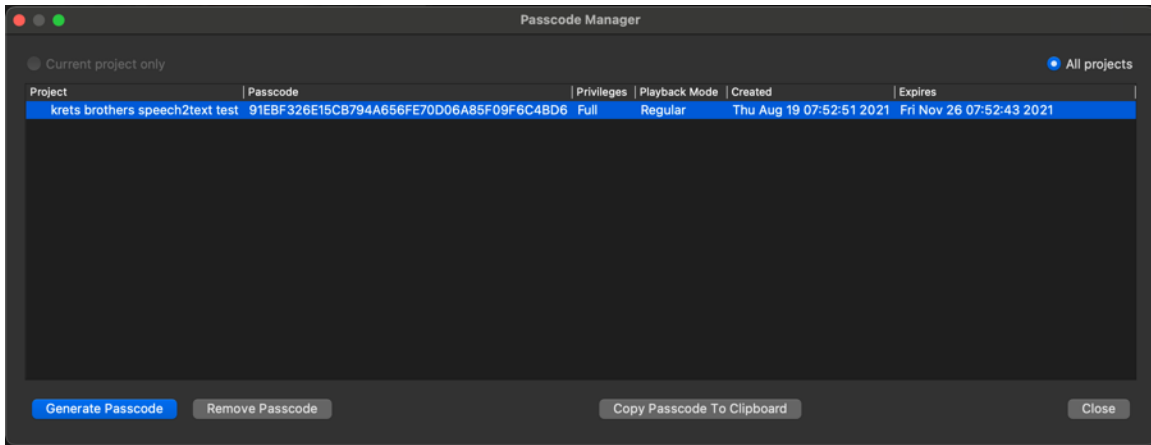
1. **Create a code** that others can use to access your projects and provide input. This can be ideal for sharing with large numbers of people, but anyone with the code can join and view your video.
2. Add a user or users directly to your project **individually** with their V-Note user name. This is more secure, as only the users you specifically type in can view the project.

To create a code for sharing your project, first make sure your video has been uploaded to V-Note's online storage and streaming service. Next, choose the "Online" top menu, then "Passcode Manager."

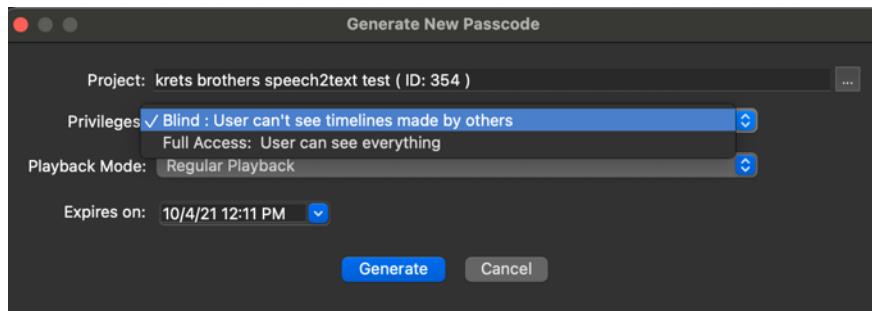


A dialog opens. Select "Generate Passcode." You will have two choices for the new user's permission level.

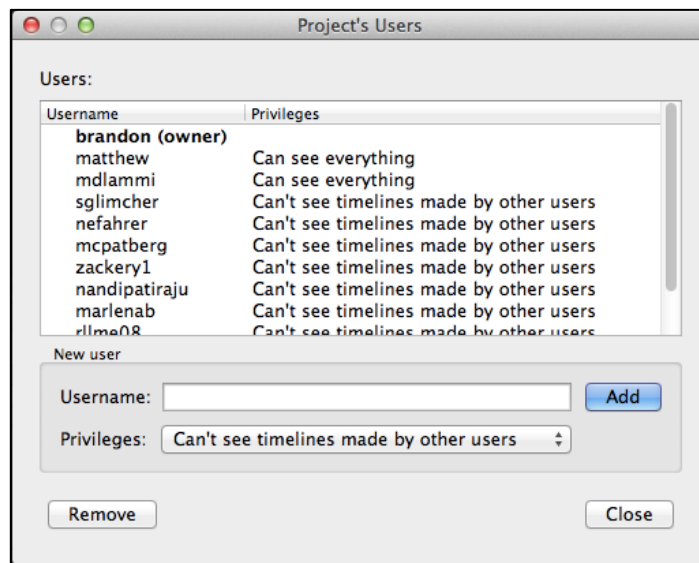
The first choice, "**Full Access: User can see everything,**" allows the user to see everything in the project including: pre-existing labeled instances, labels and hot keys, transcripts. The second choice, "**Blind: User cannot see timelines made by others,**" allows a user to see everything except any pre-existing labeled instances (i.e., codes) others may have made. This allows for a truly independent video coding



experience in which one user cannot see other users' codes. A user joining with this setting will still see the labels and hot keys that are pre-existing and be able to add codes to these same timelines (although these are placed under his or her name and are easily differentiated; more on this later).



An **expiration date for using the code** to join the project is also able to be set. The default time is 1 week from the time the code is made, but this can be changed. This is the time before which the code must be used to join the project. After this the code is no longer valid. A new code can be made at any time. **A user will still have access** to the project when the passcode expires if she or he has already joined. However, the passcode will cease to function for new users. Multiple codes having different permission levels and different expiration dates can be made for the same project.



To **add or remove users** manually, select the “Online” top menu and then “Edit Project’s Users.” The dialog to the right appears, which allows for the selection, addition and removal of users.

To remove a user, select his or her name and then “Remove.” This will also remove all data contributed by that user, including: labels, labeled instances, and transcript utterances. **Similarly, if a user deletes their codes, transcripts, or whole account or has it deleted (e.g., canceled) their data will disappear from your project.** It is their data and is associated with their permissions and account. It is never possible to change other users’ codes, transcripts, etc. to preserve fidelity in coding. **Any local backups (> File > Save (as)) can safeguard all user data at the time of the save** – even that of users that may later leave. **It is imperative** that you make regular backups locally.

To **add a user**, type his or her user name into the white bar marked “Username.” Note that a username is specific to V-Note and may be different than his or her actual name or email. **Verify the username** with the person **before** adding him or her; these will NOT be his or her email address.

To change the permissions of a user, the user name can be double clicked and the choice made.

Security for Collaboration

To allow our users to balance convenience and security per their needs, V-Note offers variable settings. V-Note **guarantees** that – if you are permitted to use video in your setting – that collaborative use of V-Note and all locally-stored functions should be permitted by your Office of Research Protections / Internal Review Board (ORP/IRB). Our level 3 security setting allows us to make this guarantee.

In all sharing options, both the V-Note server and client side (i.e., your computer) sends your video as an encrypted file that is protected from interception via wifi or other network connections. Our servers also store your videos encrypted using hashed passwords. We do not ourselves have access to your videos.

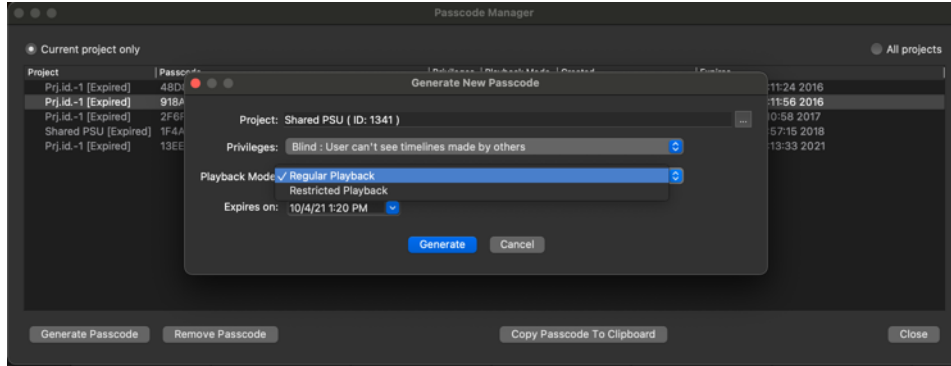
Customizable security levels are:

1. Default: **Emphasizes convenience** in collaboration
 - a. Allows collaborative V-Note users to export their own videos by stringing clips together
 - b. Caches a local copy of unencrypted videos on users' computers (with whom you have shared a project), so that they can work without an internet connection
 - c. Suitable to for sporting events or other public events where the video recording is not of a sensitive nature
 - d. This is the mode that is active by default; you need take no action for this functionality to be in effect

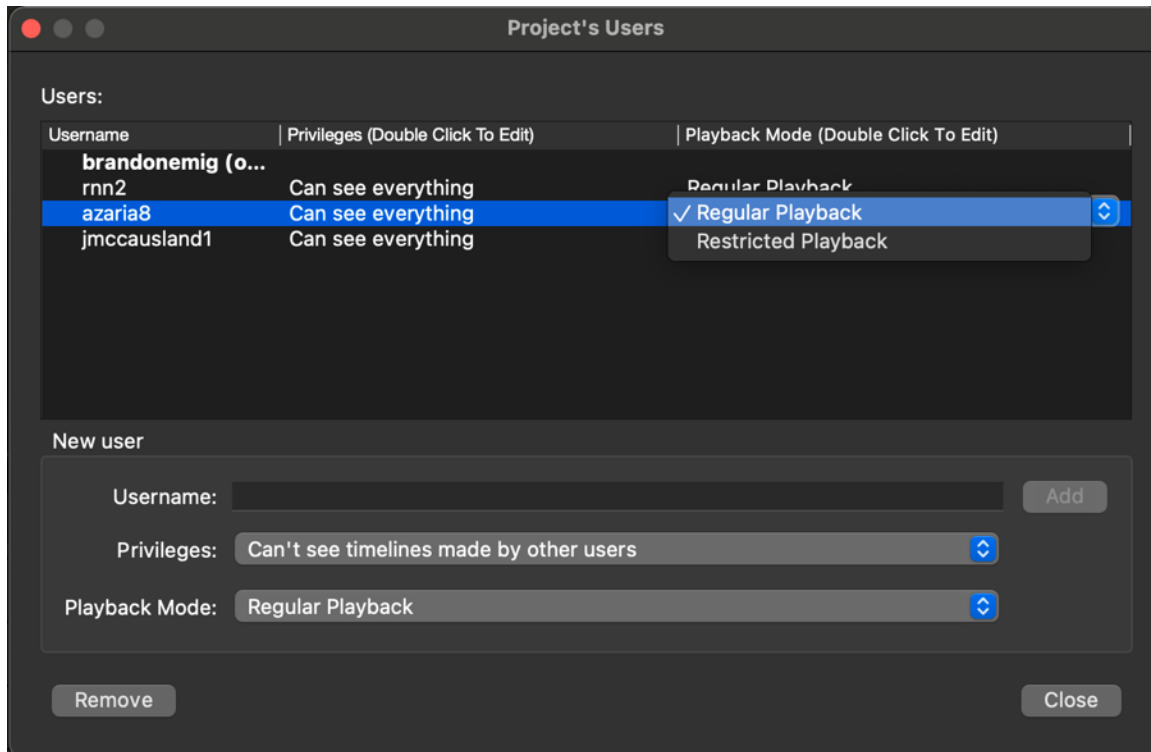
2. Restricted: **Balances convenience and security**
 - a. Collaborative users are not permitted to export new videos (e.g., from clips) using V-Note. Note that it is still technically possible to do a screen capture recording
 - b. Although a local copy is cached for smoother operation, this copy is encrypted, and closing V-Note removes the copy completely. Internet connection is required with this setting
 - c. This can be employed for somewhat more sensitive videos per your judgement
 - d. To select this setting, you can activate it per specific user or for a given share code for all users using that share code.

To select security level 2 for a passcode to be shared with multiple collaborators, choose on top menu: > Online > Passcode Manager > *Your Project's Name* > Playback Mode > Restricted Playback

Regular Playback will set security to level 1 (default):



Note that it is possible to change this setting per user also. To choose level 2 security for given users either when adding them individually or after they have already been added, choose on top menu: > Online > Edit Project's Users > Playback Mode (Column; double click on user's row to edit)



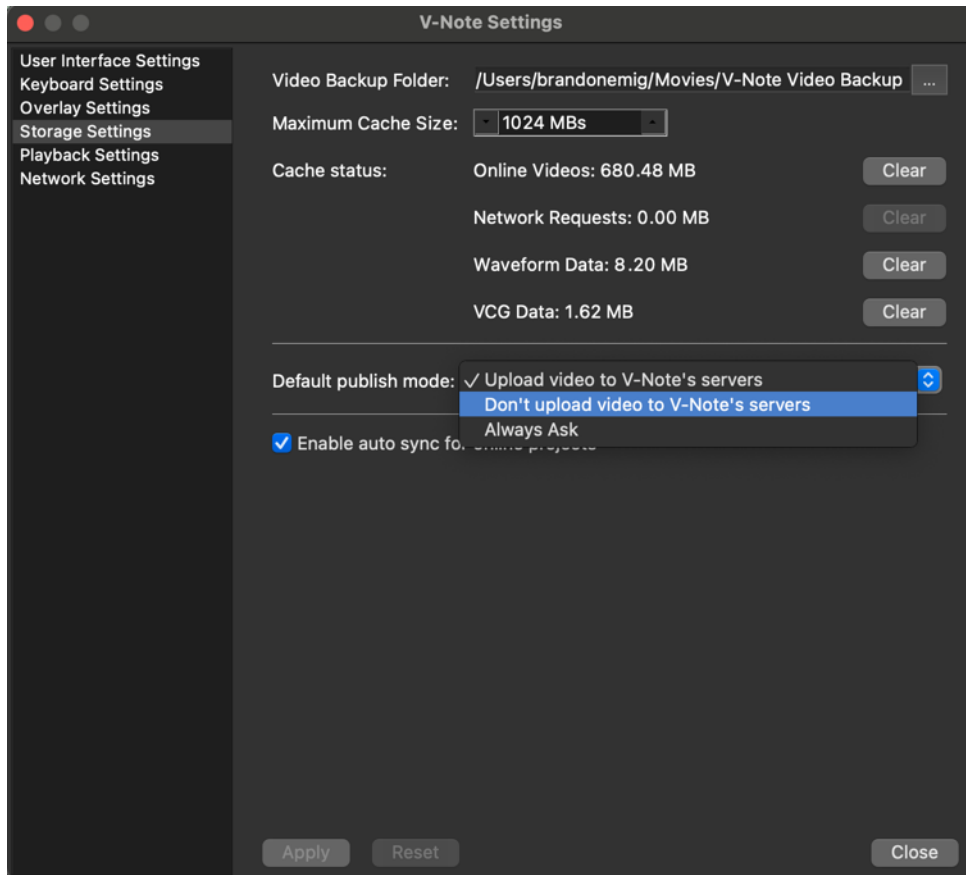
3. **Emphasizes Security** at the expense of some convenience
 - a. **V-Note never uploads** a video or audio to our servers
 - b. This is a global setting that **will apply to all projects** and all users as long as it is set
 - c. If pseudonyms are used, **no identifying features of video subjects** are ever shared directly with or by V-Note

- d. All normal V-Note analysis **functionality is still maintained** as far as: coding, statistics, transcriptions, etc.
- e. Collaboration space still must be used on our servers for metadata including: transcripts, IRR data, drawings, etc.
- f. When a user opens an online project that employs Level 3 Security, they will be **prompted to browse** for the Title: length (e.g., SallyTeachingVideo: 55:26) on their computer / USB drive / other locally approved server (such as: university servers / Box / etc. per your institutions approvals)

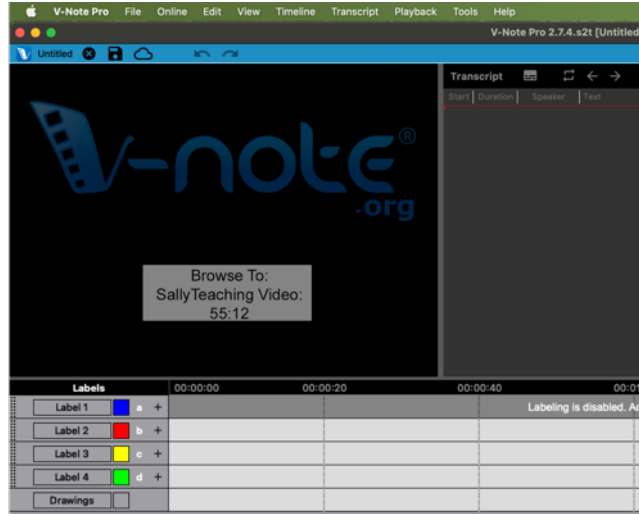
Level 3 security can be selected by choosing:

On Mac®: V-Note Pro > Preferences > Storage Settings > Default Publish Mode

On Windows®: Edit > Settings > Storage Settings > Default Publish Mode

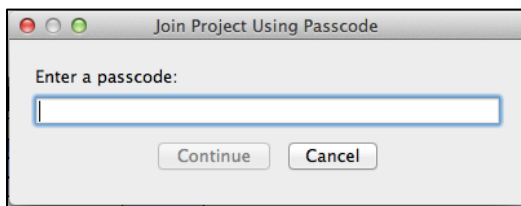
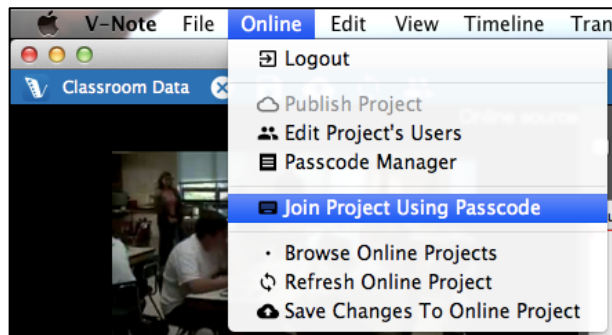


A User who has received access to a project shared with security **level 3** enabled, will see the following screen with a “**Browse To:**” button over the video play window upon opening such a project *each and every time it is opened*. They will need to have access to the video’s (or audio’s) storage media to work with the V-Note Project.



Accessing Online Projects

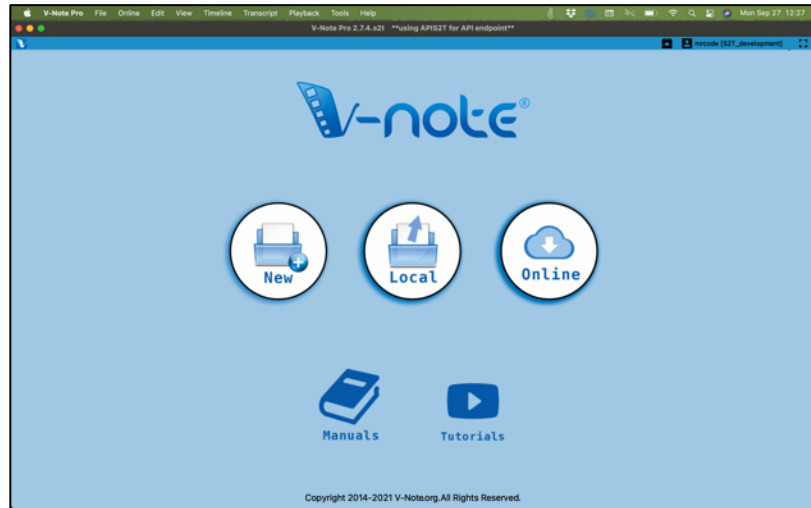
To access a project for the first time via a passcode that has been shared with you by another V-Note user, log on to V-Note, then choose from the “Online” top menu “**Join Project Using Passcode.**” You will be prompted to enter or paste the code in.



Once entered, click “Continue,” and you will open the project and be ready to begin working. **You will never need to enter the code again.** Rather, the project will appear in your list of online projects accessed in the manner described below.

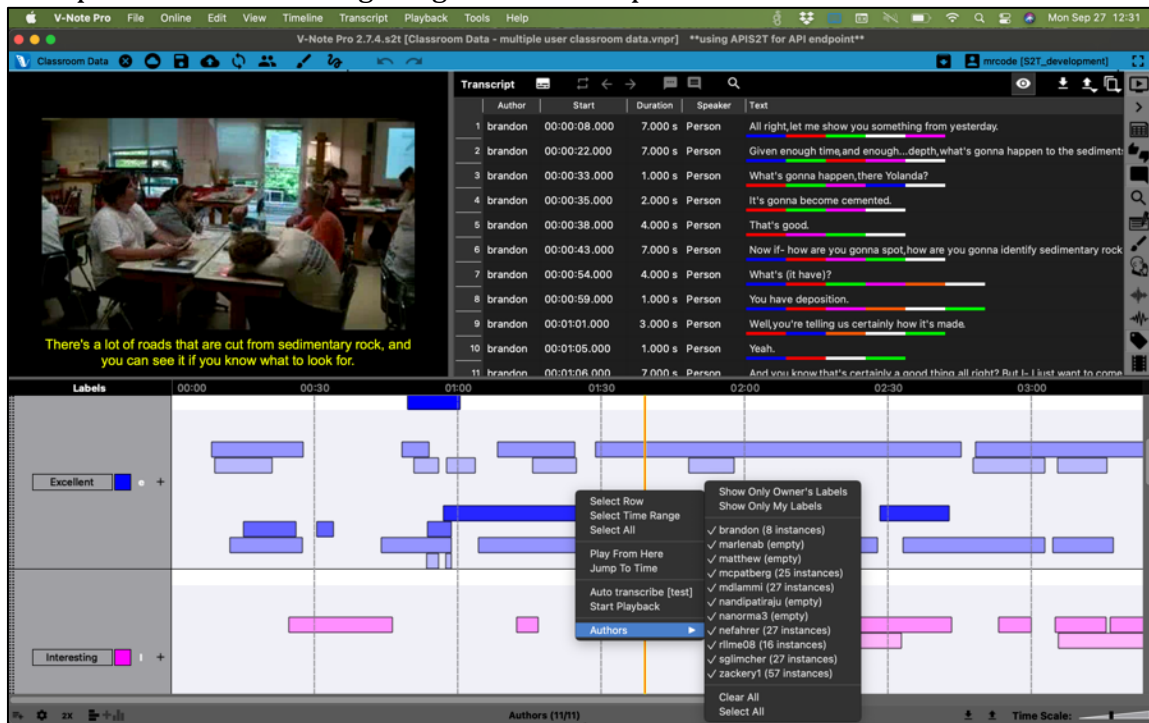
If a user has added your username manually to the project, you can access it in your list of online projects directly, after logging on. More below.

To access all your online projects including those shared with you (whether manually shared or shared and previously joined by passcode) and those you own, click “Online” from the screen displayed when V-Note first opens. A list of projects will appear. Double click on a project to select and open it. You can also sort projects per: upload date, owner, and duration.



Viewing Data from Other Users

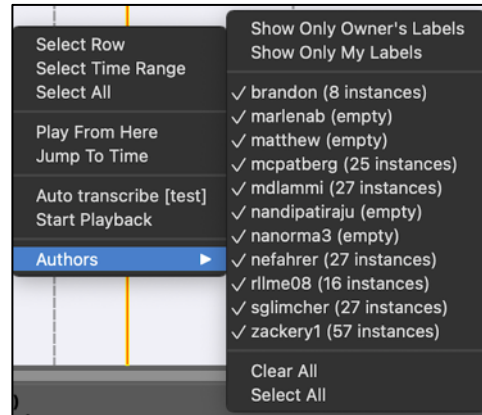
Once other users have contributed labeled instances (i.e., codes), transcripts, or other data to the video, these will appear in the projects of any user that has full permissions to see them. This can be useful to look for areas of similar/different interpretations or interest from among video coders at particular times on the video. Differing opinions on “Excellent” practice or technique will likely differ, for example. See the following image for an example.



By default, all users' labeled instances are visible. For a given label and timeline, for example, "Excellent" (e), each user's labeled instances will appear in the same timeline and in approximately the same color. Colors lighten as one goes down screen to aid in differentiating users' data. **Hovering the mouse** over any labeled instance for a second or so will **reveal its author**.

Right clicking over any timelines-area white space and selecting "Authors" will **provide a list of all users** and allow one or more users' data to be **toggled on** and off of view. A checkmark indicates that a user's data is displayed.

Similarly, **transcripts** added by other users can be **toggled off** of view with a similar checklist of users. This can be accessed by right-clicking over the transcripts anywhere. Users' transcripts are visible if his or her name is checked.



Saving and Publishing Projects Locally and Online

You can save V-Note projects locally only or online *and* locally. You can use the shortcut buttons on the top blue bar or the File and Online Menus.

To **save locally** (e.g., to your hard-drive or local media), you can click on the disk icon in the blue



bar. Alternatively, you can go through the menus as follows: File > Save Project (As). Either way, if you have not yet provided a title, you will be asked to input one and select a folder to save in.

If you would like to **publish a project online** for storage or for sharing, you can click the "cloud" button or go through menus: Online > Publish Project. If your project is already published to V-Note's Collaboration Space and you are logged on, all your **changes will be published automatically** to our servers and **made available in real-time** to other collaborators. Likewise, if others make updates online while you are working, these will appear automatically. If you do not wish to see these, you can choose to view only your own timelines from view by right clicking over the blank space anywhere on the timelines and choosing: > Authors.

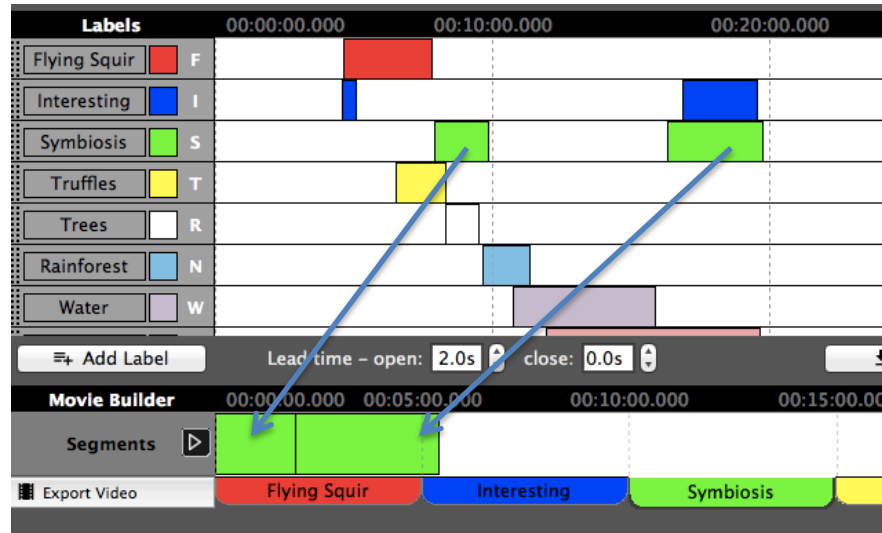
Chapter 4: Movie Builder

What is Movie Builder?

Movie Builder, at the bottom of the V-Note screen, is the place where **labeled instances become clips**. For

example, if “symbiosis” were given a label (and timeline), and every time symbiosis occurred in the video, the instance were labeled, all these labeled instances would be aggregated automatically at

the bottom on the “symbiosis” tab. To click the play button there would play only instances labeled as symbiosis; no other parts of the video would play.



Navigating Tabs

Other tabs work similarly. All tabs bear the same names as the labels above to the left of the timelines. When a tab is clicked it reveals all the labeled instances – now clips to be played – placed side by side without the parts of video between them.

Custom Movie Builder Tabs

The “Custom 1” tab (and subsequent optional added custom tabs) work differently. These are blank by default, but they can accept labeled instances to be dragged in from any timeline. These can then be reordered once dragged in.

Playing Videos in Movie Builder

The Movie Builder allows you to rapidly play, scan, and compare clips from a given category or label. It also allows you to make and export new videos from these clips.

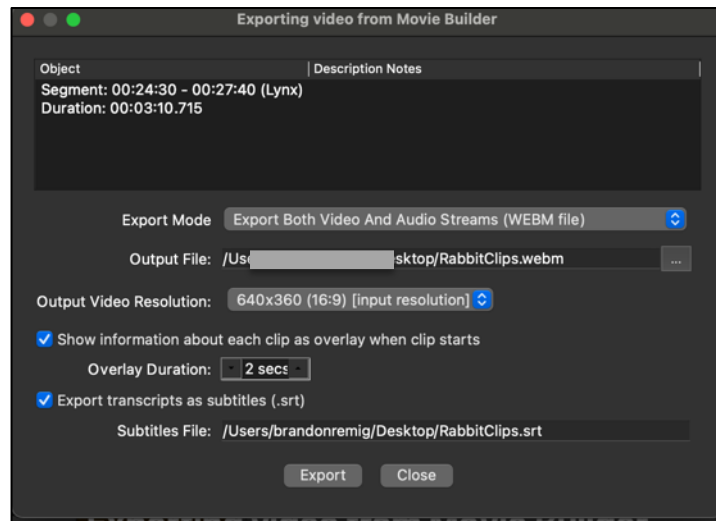
The Play button (triangle) to the left of the Movie Builder can start and stop the play of clips on a given tab. A double click at any point over the labeled instances in the Movie Builder can bring the play head immediately to that point.

During Movie-Builder play, **other functions**, such as labeling, using the timelines above, and transcription **are disabled** until Movie Builder play is stopped.

Any given instance playing in the movie builder is also highlighted above in the timelines so it can be identified in its original context.

Exporting Videos

To export a video, select the tab you want or arrange a custom tab as you would like, then click the “Export Video” to the left of the tabs. Browse to a folder where you would like to save the new video and give the video a title. Next, you **can choose to export transcripts separately** and/or overlay on the video the timestamp and name of the project from which it was taken.



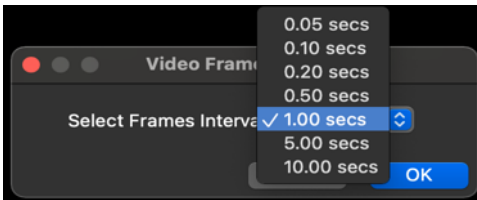
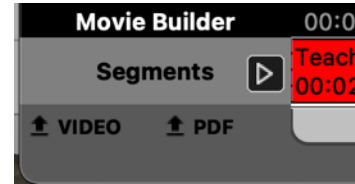
This can take some time depending on your computer. The processing time should not normally exceed the total time of the video clips for most computers. A progress bar can be viewed at any time. This may vary depending on your processor speed and other processes your computer is performing. You can use V-Note while this process is occurring in the background, or you can use your computer for other things, although this may increase time required to export the video.

The **output video format is .webm** (also called .vp8). This is a commonly supported format and **should play without problem** on a current web browser as well as on other media players. Due to licensing restrictions we are currently unable to offer output to other formats.

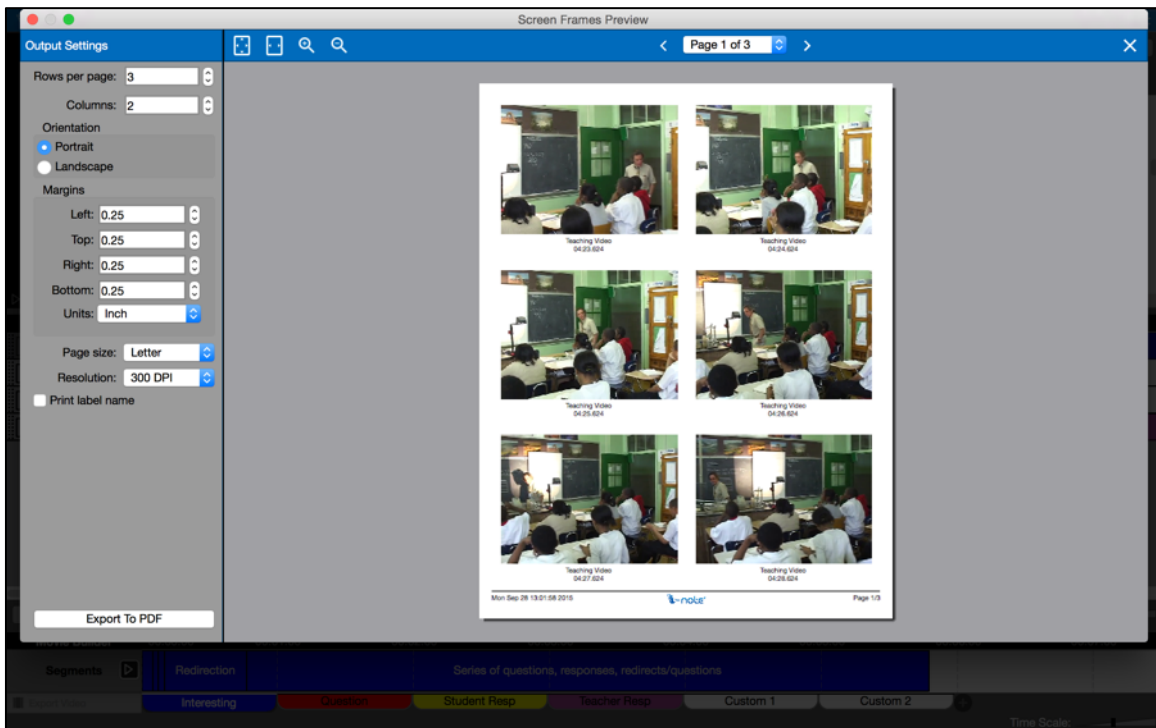
Should you **desire a video in another format**, such as .mp4 or .mov, numerous products exist, many of them free, that can convert .webm to other video formats such as .mp4, for example. A free application called VLC is one such application.

Exporting PDF Screenshots

V-Note allows you to export screenshots as a PDF. In order to use this feature, first add the instances you would like screenshots of to the Movie Builder or Multi-Project Tab. Next, choose “PDF” from the bottom left (see image). You will then be prompted to choose the frequency of the screenshots you would like from each video segment. You can get a frame from every .05 seconds to every 10 seconds (see image below).



Finally, you are able to choose the orientation (portrait or landscape) and arrangement (number of columns, rows, and margins) as shown in the image below of the screenshots. You can also preview the pages by scrolling through them at the top. When arranged as you like, click “Export to PDF” and you will have a PDF of your screenshots.



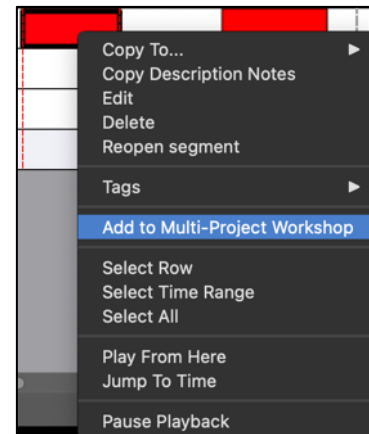
Chapter 5: The Multi-Project Workshop

What is the Multi-Project Workshop Tab?

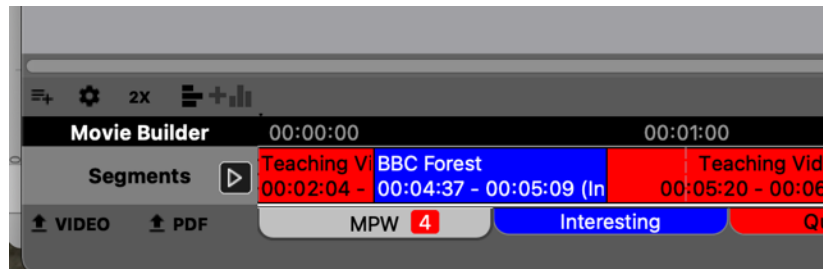
The Multi-Project Workshop has been redesigned as of version 3.0 of V-Note. It is now incorporated into the Movie Builder function and works like it for easier and more logical use. Unlike the Movie-Builder, the Multi-Project Workshop allows for the **creation of videos with clips from multiple V-Note projects**. For example, over a whole semester of teaching videos – even if each video is in a separate project - each question asked can be put into a single place for review and made into one video for export using the Multi-Project Workshop. The Multi-Project Tab **also allows two video clips to be played at the same time**. It also allows for the creation of screenshots on PDF with customizable size, columns, and rows of screenshots.

Adding Clips to the Multi-Project Workshop

There are two ways to add instances to the Multi-Project Workshop. With an open project containing labeled instances, simply right-click on one that you would like to add to the Multi-Project Workshop. Then, choose “Add to Multi-Project Workshop.” You can also **Drag-&Drop segments** and arrange them. The clip will be placed in the Multi-Project Workshop Tab at the right of the Movie Builder. A red number will appear representing the number of clips (i.e., labeled instances) that have been placed into the Multi-Project Workshop. This can be seen in the image below.



The contents of the Multi-Project Workshop can be viewed any time by clicking on its tab labeled “Multi”. The clips are shown, with their respective

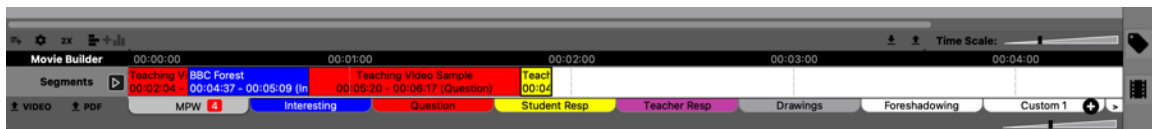


original project’s title, the time location in original video, and original label applied. No thumbnails are available. **Even when V-Note is closed and reopened** with another project, these **instances will stay** in this tab. This is not true of other taps, which are project specific.

Exporting a Video from the Multi-Project Workshop

The clips can be dragged left and right to the desired order. Once in order, they can be exported in similar fashion to the clips in the Movie-Builder described earlier in this chapter. One difference is that, given the varied origins of the clips, their original project's name and the time at which the clip was taken can be displayed at the beginning of each respective clip. This option can be toggled on or off with the check box at "Show information about each clip as overlay when clip starts." Overlay duration can also be modified. Default display is for 2 seconds.

Note that in order to export a video, the media on which all included clips' original media is stored must be connected (e.g., external drive, internet and log on - if online projects are involved). These projects will be accessed to provide the clips.



Playing Multiple Clips at One Time

Playing **up to four clips simultaneously**, even at different speeds and at different volumes (or muted) can also be done by clicking the four-box icon on the right as shown below. Then, drag the desired clips text into the one of the four video play windows in which you would like it to play. Play controls (same as main) will appear.

The size of the window can also be increased or



decreased by dragging the play window's edges. You can also toggle off the regular play window and timelines, etc. for more viewing area. Note that in order to **have multiple entire videos** (camera angles in parallel, consecutive videos in series, etc.), in a given project, this is a different function; simply drag the videos into the main play-window or choose >> File >> Edit Playback Sources to manage these.

Note that in order to play multiple clips, the media on which both included clips' original project is stored must be connected (e.g., external drive, internet - if online project, etc.). These projects will need to be accessed by the program to provide the clips.

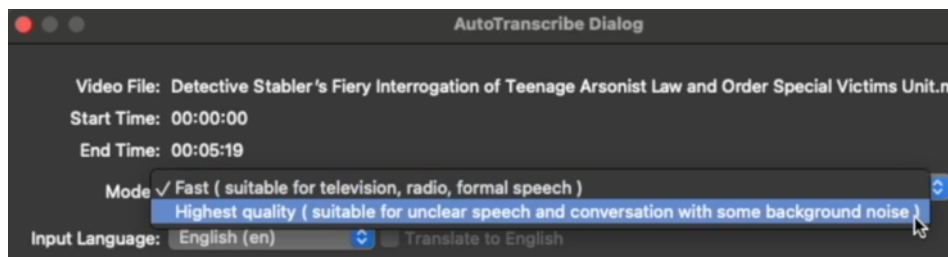
Chapter 6: Transcribing and Automatically Coding

If you would like to add transcripts and captions to your video, V-Note is well equipped. One of our most important goals with V-Note was to make transcribing easier. V-Note allows you to use automatic artificial-intelligence-based on-device transcription. Or you can transcribe manually using looping, a constant replay of usually about 5 seconds (you can adjust this) while advancing through the video by shifting it to the right about 2 seconds (also adjustable). V-Note also helps you to create organized, timeline related, transcripts and assigning utterances to speakers.

The automatic transcription function can be used by right-clicking over any white space in the timelines area or over any labeled instance. From this menu you can choose “AutoTranscribe



Selection” or “AutoTranscribe Entire Video”. Once selected, you will be offered two choices. You can choose “Highest Quality” which will take about 3-4 times longer than the “Fast” version. The fast version is usually very good for professionally produced media such as: television, radio, formal speech, interviews, etc. It may or may not have good performance with conversation speech depending on factors such as: background noise, overlapping speech, unfinished utterances and the like.

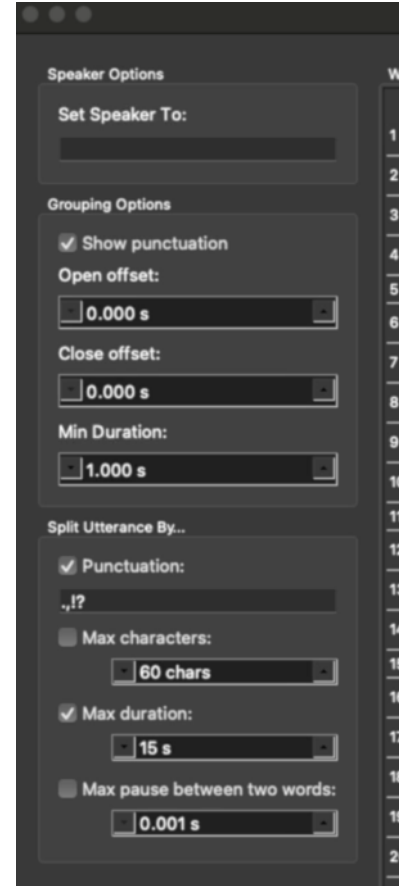


Transcription takes place entirely on your device. As such, a package for this transcription will need to be downloaded to your computer. The fast package is about 90MB. The high quality package is about 3GB. You may choose both or either and change this at any time.

Speed of transcription will vary greatly depending on a few factors, the most important of which is your computer's specifications including: RAM, processor speed, operating system, and related factors. Once begun, the transcription can take from about 20% of the time of video duration (when played at regular speed) to 10X or more of the normal duration.

You can always change or correct your automatic transcriptions once made.

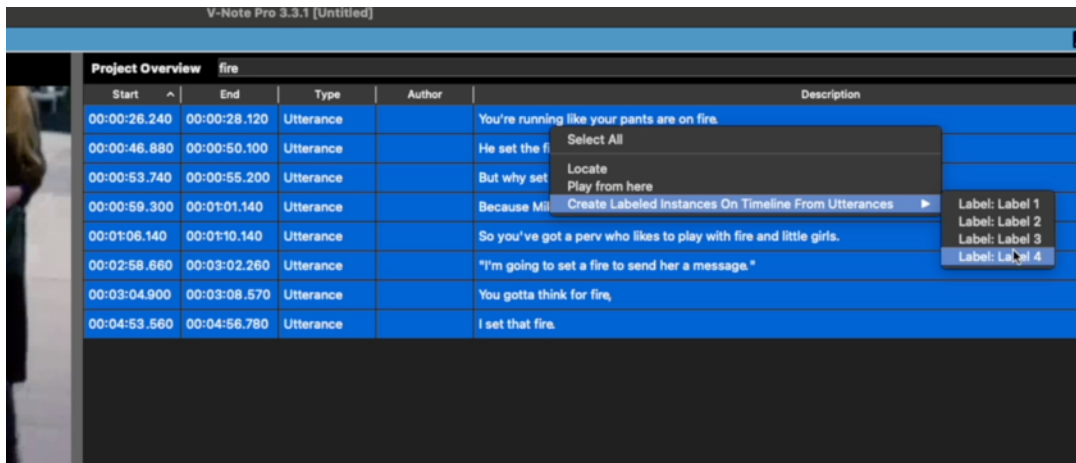
Once processed, you can modify the presentation of your transcripts in a variety of ways. It is possible to change the: presence or absence of punctuation; the speaker name (note automatic diarization, or detection and assignment of speakers) is not yet supported; we expect to add this as its performance improves); maximum characters allowed per line or utterance; maximum duration for an utterance; maximum pause length between two words before breaking an utterance into multiples.



Automatic Coding from Transcripts

It is possible to generate your labeled instances (aka codes) from your transcripts automatically – regardless of how they were created (manually, automatically, or imported).

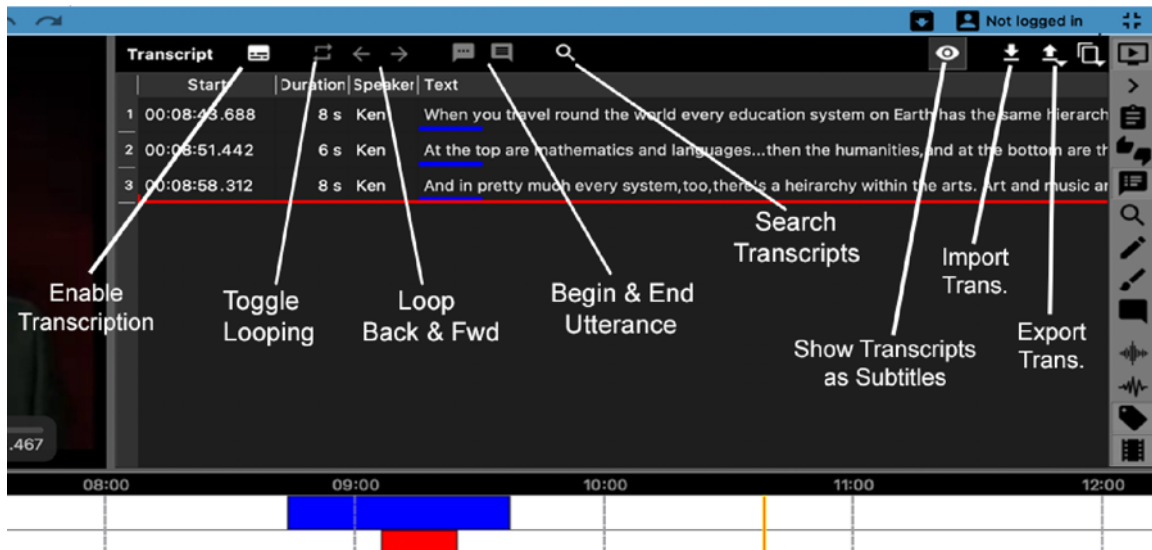
To do this, choose the “Magnifying Glass” Icon on the right, which represents the Project Overview. Next, type a word or phrase in the bar near the top.



All utterances will be displayed just below. You can then click over one or CTRL-Click to select multiple. Then, right-click to “Create Labeled Instances on Timeline from Utterances.” These will be created on the timeline of your choosing.

Turning On Manual Transcription

To turn on transcribing click the check boxes called “Enable Transcription” found in the upper left of the transcription window.



Transcribing

To transcribe, find a place you would like to transcribe in the video. Anywhere is fine (you can do earlier or later sections at any time and they will be put in the correct order and associated with the video timeline as well). Drag the playhead to this place.

Starting and Stopping Utterances

Starting : **CTRL + Shift + Enter**

Stopping : **CTRL + Shift + Enter**

Note: on a Mac command replaces CTRL.

Change this or any shortcut keys; See Ch. 1

Once you find the first utterance you would like to transcribe, click “Toggle Looping.” Wait until the red line (i.e., playhead) comes to just before your utterance, then, press CTRL + Shift + Enter (on a Mac command replaces CTRL). The utterance time will be marked by the position/time the playhead is at when you press CTRL + Shift + Enter. You can now begin typing the name of the speaker (blue below) and what you hear to make your first utterance on the transcript (red below).

Using Looping

Looping will repeat-play a short section of video **outlined in yellow** – by default about 6 seconds – over and over again. This is to give you time to type what you hear, as speaking speed usually exceeds typing speed. As you complete typing the speech contained within your 6 seconds and wish to continue you can



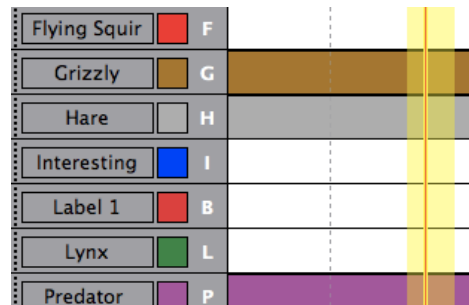
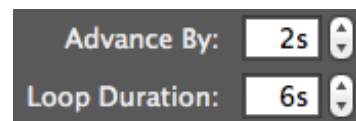
advance the loop and continue transcribing by hitting the CTRL + Shift + > keys all at the same time (note: on a Mac the CTRL key is replaced by the “command” key). In fact, you can also back up the loop on the timeline by hitting CTRL + Shift + < (again, the “command” key replacing CTRL on a Mac).

Once you come to the end of your utterance (either by advancing or not), press CTRL + Shift + Enter once again to end the utterance. The utterance **end time will be marked by the position of the playhead (not the loop)** when pressed.

Advance the loop (CTRL + Shift + >) if necessary to find the beginning of your next utterance and repeat the steps outlined above.

Changing Loop Duration and Advance

You can change the length of the audio loop from 6 seconds to a value of your choice in the “Loop Duration” setting at the top of the transcription window. Similarly, the “Advance By” setting changes the time of loop-advance (the same time also applies to the backing up).



Advancing the Loop

Forward : CTRL + Shift +



Backward : CTRL + Shift +



Note: on a Mac command replaces CTRL.

Change this or any shortcut keys; See Ch. 1

Manually Adjusting Start and Stop Times of Utterances

or	Start	Duration	Sr
on	00:00:24.274	9 s	Guy
on	00:00:33.889	9 s	Guy
on	00:00:43.318	9 s	Guy
on	00:00:52.797	2 s	Guy

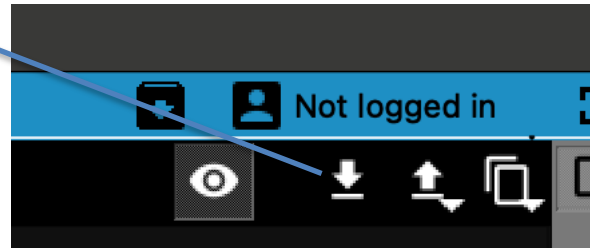
To adjust the start time of an utterance after you have made it, simply click in the box indicating it's time (see left) where you can use the arrows to adjust the time or simply type in a new time.

Reordering Utterances on a Transcript

You cannot drag an utterance up and down to reorder, as their order is determined automatically by their start times. If you would like to reorder utterances that are in close succession, you must **adjust their times manually** in this fashion. New utterances, even if between existing utterances, will also be placed in their proper order based on start time.

Importing Transcripts from Other Sources

V-Note allows for the importing of transcripts from most other sources. These files must be in the format CSV (comma separated variables), XLS (Microsoft ® Excel ®) or SRT (a commonly used subtitle format). If you do not have your transcripts in these formats, you can usually make a suitable CSV or XLS file type for import in a program such as Microsoft ® Excel ® or similar spreadsheets.



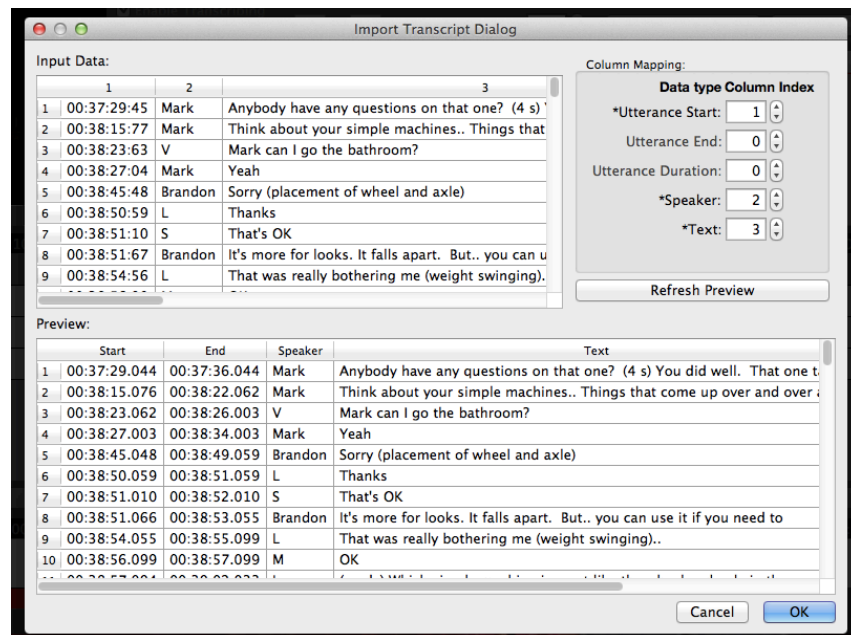
Once you have your file with your transcripts, V-Note can import the file and will automatically associate the time with the video. If the times do not agree (for example, if you removed the first 20 minutes of video), you will need to modify your transcripts in a spreadsheet program. For example, subtract a time (20 minutes in the example from each utterance's start time and end time so that it aligns properly with the video in V-Note, for analysis and subtitle display purposes. Fortunately, spreadsheet programs such as Excel ® can make this easy and automatic by allowing you to apply a formula to the whole column. Consult the program's respective user manual for more information.

In order to begin the importing of the transcripts, click the button labeled “Import Transcript” in the transcription window near the top of the screen. This will allow you to browse for the file. Once you find it, double click it and it will prompt the

Import Transcript Dialog as shown below. V-Note attempts to assign the columns correctly and provide a sample rendering called a “preview” which is shown at bottom of the window.

In the event that V-Note does not produce the “Preview” you desire, you can assign the columns

manually (upper right of window). “Refresh Preview” will allow you to see how your data, as chosen, will look in V-Note once imported.



If you are still unable to import your transcript, you may need to reduce the quantity of extraneous (non-transcript) content in your files and/or verify continuous columns and rows of data.

Exporting Transcripts

V-Note can also export transcripts. There are two ways to accomplish this: alone or with timeline labeled data (i.e., codes). Exporting transcripts alone will be discussed in this section. Exporting them with data will be discussed in the next section.

In order to export transcripts, simply click on the “Export Transcript” button near the top right of the screen. Browse to a folder where you would like to save the file. Create a title. Finally click “Save.” The file will be saved as a CSV, SRT, or XLS file. XLS and CSV-type files can be opened by Excel ® or other spreadsheet programs or imported by V-Note again. SRT-type files can be opened by traditional video players such as VLC. SRT-type can also be imported into V-Note.

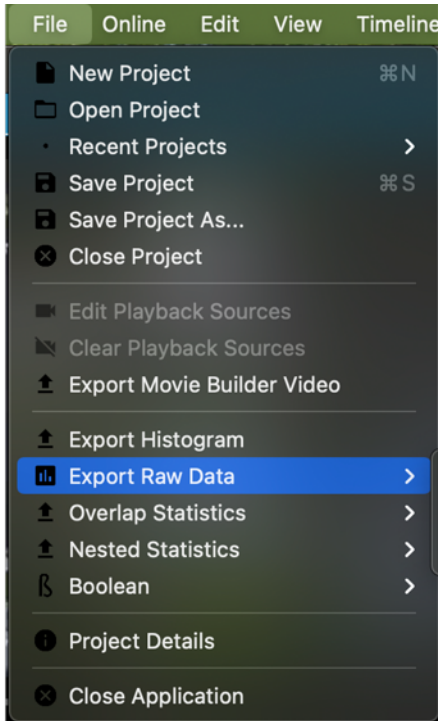


Chapter 7: Raw Data Export

Exporting Raw Data

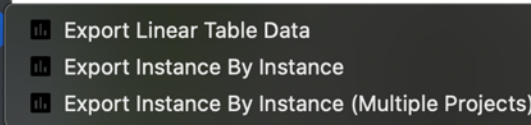
Raw data including: labeled instances, notes, and transcripts can be exported from V-Note for use in other programs (e.g., spreadsheets, word processors, email, etc.).

You can export: linear table data; instance by instance; or instance by instance with multiple projects. Linear table data will be shown first.



To export linear table data from V-Note, choose: >File > Export Raw Data. You will have three options including:

- 1.Interval for data rendering (from 1s– 60s)
- 2.To include transcripts
- 3.To include description notes (typed into labeled instances)

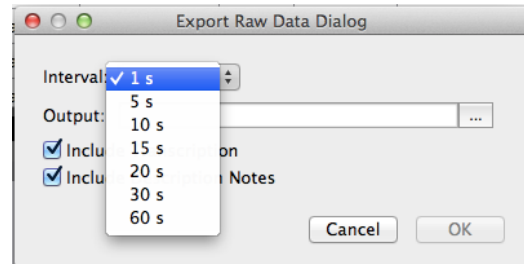


Once you have navigated to the folder where you will save and created a title, click “Save.” Your file will be output as a CSV, which can be opened in

spreadsheet programs such as Excel ®.

Selecting an Interval for Your Data

Selecting an interval for rendering your data, will be like selecting a finer or coarser resolution. A 1-hour video rendered at 1 second intervals, for example, will have 3600 lines of data (60 seconds x 60 minutes = 3600 seconds) and will take many pages to print; whereas, that same 1-hour video, rendered at 60 second intervals, would have only 60 lines of data.



A sample set of the **linear table data** rendered at 5-second intervals.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Label Name:	Interesting		Question		Student Res		Teacher Res									
2	Label Number:	1		2		3		4									
3	Labeler Name:																
4	Labeler Number:	1		1		1		1									
5																	
6	Instances:	6		24		25		21									
7	Total time:	0:05:51		0:04:54		0:02:05		0:02:28									
8	Percent of Video:	41.67%		34.93%		14.85%		17.60%									
9																	
10	Time																
11	0:00:00																
12	0:00:01																
13	0:00:02		1	00:04 - Note:													
14	0:00:03		1														
15	0:00:04		1														
16	0:00:05		1														
17	0:00:06		1														
18	0:00:07																
19	0:00:08									Person							
20	0:00:09																
21	0:00:10																
22	0:00:11																
23	0:00:12																
24	0:00:13																
25	0:00:14																
26	0:00:15																
27	0:00:16																
28	0:00:17		1	0:05													
29	0:00:18		1														
30	0:00:19		1														
31	0:00:20		1														
32	0:00:21		1		1	0:13											
33	0:00:22		1		1					Person							
34	0:00:23				1												
35	0:00:24				1												
36	0:00:25				1												
37	0:00:26				1												
38	0:00:27				1												
39	0:00:28				1												

The same data rendered at 20 second intervals.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Label Name:	Interesting		Question		Student Res		Teacher Res											
2	Label Number:	1		2		3		4											
3	Labeler Name:																		
4	Labeler Number:	1		1		1		1											
5																			
6	Instances:	6		24		25		21											
7	Total time:	0:05:51		0:04:54		0:02:05		0:02:28											
8	Percent of Video:	41.67%		34.93%		14.85%		17.60%											
9																			
10	Time																		
11	0:00:00		2	00:05, 00:04 - Notes here						Person									
12	0:00:20		2		0:13	1	0:03			Person									
13	0:00:40		2		2 00:03, 00:07	1	00:04 - Depo			Person									
14	0:01:00		1	00:36 - Redirection						Person									
15	0:01:20		1		1	0:07				Person									
16	0:01:40		1		1	0:03	1	0:03	1	0:03	Person								
17	0:02:00				1	0:16				Person									
18	0:02:20				2	0:18	1	0:05	1	0:04	Person								
19	0:02:40				1		1	0:04	1	0:07	Person								
20	0:03:00				1	0:08	1	0:03	2	0:03	Person								
21	0:03:20									Person									
22	0:03:40				1	0:15				Person									
23	0:04:00				1		1	0:08		Person									
24	0:04:20				1	0:10	2	0:04	2	0:02, 00:04	Person								
25	0:04:40									Person									
26	0:05:00				1	00:57 - Impo				Person									
27	0:05:20				1					Person									
28	0:05:40				1					Person									
29	0:06:00				2	0:04	2	00:06, 00:04	1	0:02	Person								
30	0:06:20				1		1	0:02	1	0:02	Person								
31	0:06:40									Person									
32	0:07:00				1	0:23				Person									
33	0:07:20		1	05:01 - Series of questions,	1					Person									
34	0:07:40		1				3	00:03, 00:02,	3	00:04, 00:03,	Person								

Although it is the same data, the 20-second interval rendering **takes up much less vertical space**. All resolutions will **include the percentages of the video taken up** by each code at the top. Additional authors (i.e., coders), if present, will appear to the right for easy comparison as well (not shown above). No labeled instances are omitted regardless of resolution. If a labeled instance is present, even for a fraction of a second during an interval, it will be shown on any output data, even at intervals of a minute. The actual duration may be noted to the right (per your output settings) but a smaller interval allows for better determining of durations of labeled instances visually but increased the file's size vertically.

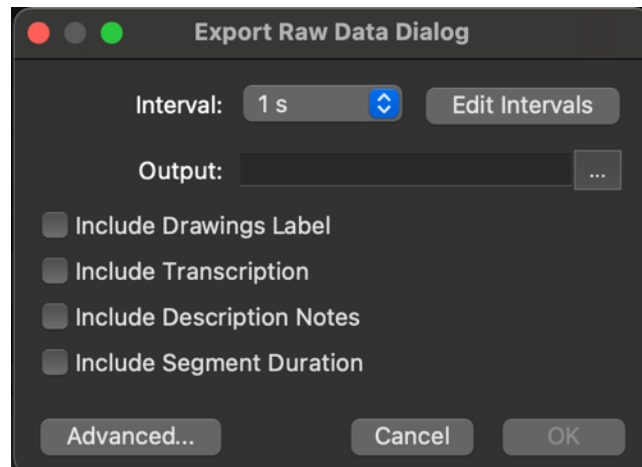
Similarly, all transcripts are displayed regardless of interval. If, in a 1-minute interval rendering, multiple utterances appear during that minute, they will be stacked left to right, superimposed, if need be; whereas they would be stacked vertically read without expanding the cell in a smaller interval rendering such as 1-second. **You will need to balance the concerns of a high vs. low interval resolution for your data based upon your needs.**

Including Transcripts and Other Options in Raw Linear Table Data

The transcripts, shown to the right of the spreadsheet's raw data, can be included by checking the check box "Include Transcription." Viewing transcripts and labeled instances side by side in a spreadsheet can be helpful in visualizing how they relate to one another.

Similarly, the description notes (i.e., what is typed in a labeled instance), can also be toggled off.

No description notes are present in the samples above. The "Include Drawings Label" option will include labeled instances wherever drawings occur (31s-54s, for example).



Exporting Data Instance by Instance

Depending on your analysis and your goals, you may want to export your data in an instance by instance format. This looks different from the linear table data and will provide each instance in its own row along with its associated data.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Project	Start	End	Duration	Label	Parent	Level	Code	Segment Index	Color	Desc	Author	Tags
3	Teaching Video Sample	00:00:03	00:00:06	00:00:04	Interesting		0	I	1	0000FF	Notes go here		
4	Teaching Video Sample	00:00:18	00:00:23	00:00:05	Interesting		0	I	2	0000FF			
5	Teaching Video Sample	00:00:22	00:00:34	00:00:13	Question		0	Q	1	FF0000			
6	Teaching Video Sample	00:00:36	00:00:39	00:00:03	Student Resp		0	R	1	FFFF00			
7	Teaching Video Sample	00:00:38	00:00:41	00:00:03	Interesting		0	I	3	0000FF			
8	Teaching Video Sample	00:00:44	00:00:51	00:00:07	Question		0	Q	2	FF0000	How to ID sedimentary rock?		
9	Teaching Video Sample	00:00:54	00:00:57	00:00:03	Question		0	Q	3	FF0000			
10	Teaching Video Sample	00:00:55	00:00:57	00:00:03	Interesting		0	I	4	0000FF			
11	Teaching Video Sample	00:00:58	00:01:03	00:00:04	Student Resp		0	R	2	FFFF00	Deposition		
12	Teaching Video Sample	00:01:08	00:01:44	00:00:36	Interesting		0	I	5	0000FF	Redirection		
13	Teaching Video Sample	00:01:28	00:01:35	00:00:07	Question		0	Q	4	FF0000			
14	Teaching Video Sample	00:01:45	00:01:48	00:00:03	Question		0	Q	5	FF0000			
15	Teaching Video Sample	00:01:48	00:01:51	00:00:03	Student Resp		0	R	3	FFFF00			
16	Teaching Video Sample	00:01:49	00:01:52	00:00:03	Teacher Resp		0	T	1	B0489D			
17	Teaching Video Sample	00:02:04	00:02:20	00:00:16	Question		0	Q	6	FF0000			
18	Teaching Video Sample	00:02:20	00:02:25	00:00:05	Student Resp		0	R	4	FFFF00			
19	Teaching Video Sample	00:02:25	00:02:29	00:00:04	Teacher Resp		0	T	2	B0489D			
20	Teaching Video Sample	00:02:37	00:02:55	00:00:18	Question		0	Q	7	FF0000			
21	Teaching Video Sample	00:02:55	00:02:59	00:00:04	Student Resp		0	R	5	FFFF00			
22	Teaching Video Sample	00:02:57	00:03:04	00:00:07	Teacher Resp		0	T	3	B0489D			
23	Teaching Video Sample	00:03:02	00:03:10	00:00:08	Question		0	Q	8	FF0000			
24	Teaching Video Sample	00:03:13	00:03:16	00:00:03	Student Resp		0	R	6	FFFF00			
25	Teaching Video Sample	00:03:14	00:03:17	00:00:03	Teacher Resp		0	T	4	B0489D			
26	Teaching Video Sample	00:03:59	00:04:13	00:00:15	Question		0	Q	9	FF0000			
27	Teaching Video Sample	00:04:15	00:04:24	00:00:08	Student Resp		0	R	7	FFFF00			
28	Teaching Video Sample	00:04:23	00:04:27	00:00:04	Teacher Resp		0	T	5	B0489D			
29	Teaching Video Sample	00:04:24	00:04:34	00:00:10	Question		0	Q	10	FF0000			
30	Teaching Video Sample	00:04:33	00:04:36	00:00:04	Student Resp		0	R	8	FFFF00			
31	Teaching Video Sample	00:04:34	00:04:37	00:00:02	Teacher Resp		0	T	6	B0489D			
32	Teaching Video Sample	00:05:20	00:06:17	00:00:57	Question		0	Q	11	FF0000	Important		
33	Teaching Video Sample	00:06:06	00:06:12	00:00:06	Student Resp		0	R	9	FFFF00			
34	Teaching Video Sample	00:06:15	00:06:19	00:00:04	Student Resp		0	R	10	FFFF00			

Chapter 8: Synchronizing Secondary Audio

You may sometimes need to add a secondary audio track to a video. This may be in case of a camera location that is far from a speaker and does not have adequate sound quality. A closer voice recorder can generate clearer audio. Fortunately, V-Note makes **adding a secondary sound track easier**, and in many cases, automatic.

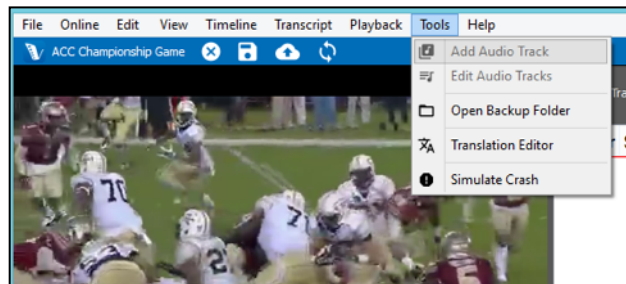
Once added, these tracks can be played at the same time with video playback, or one or the other, or at different volumes with both being audible but one being dominant.

For best results, the tracks should be similar. The computer will look for similarities in sounds and match them up according to time. They must have been recorded at the same event and have similar start and stop times.

V-Note can even **correct for drift**, which can occur when devices (i.e., camera and external audio recorder) record at slightly different rates. This normally results in audio that is synchronized early on in the video but becomes out of sync as the video plays.

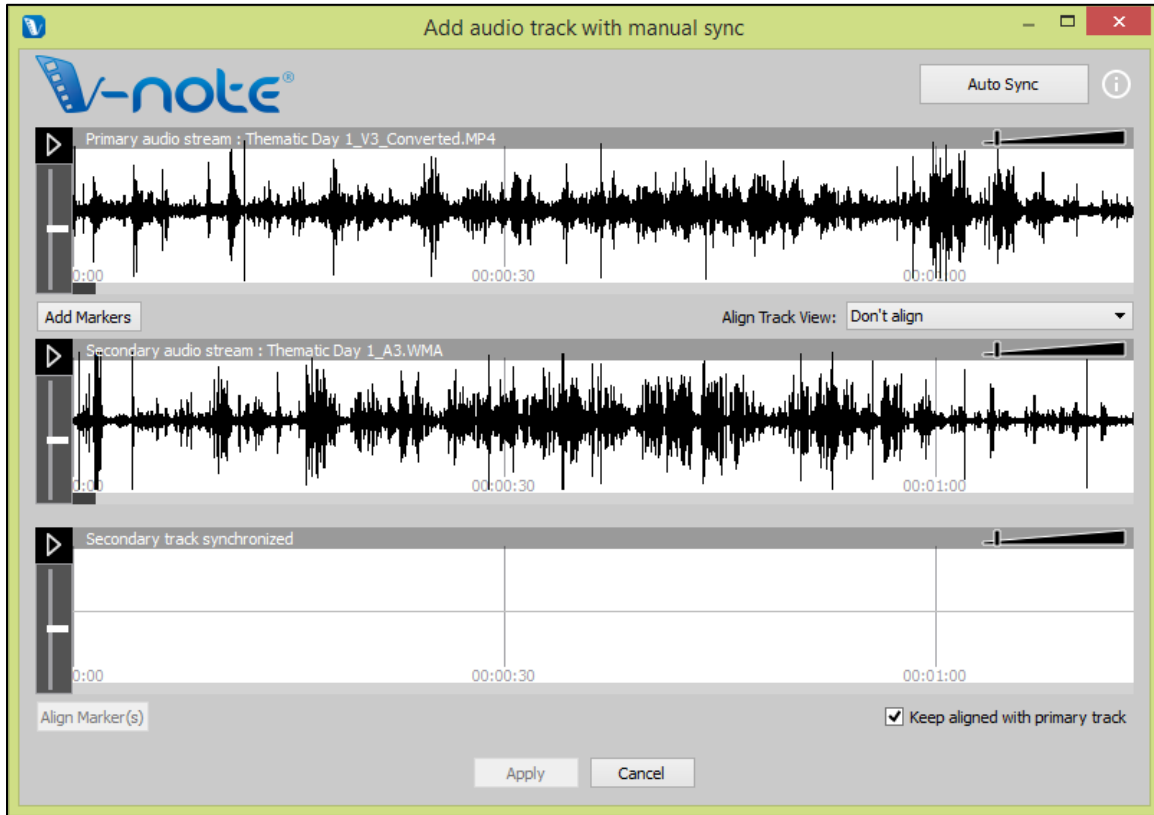
Adding Secondary Audio Tracks

In order to add a secondary audio, first, add the video to the play window as described in Chapter 1 of this manual. Next, simply drag the audio track you wish to synchronize to the video play window where the video is displaying. Alternatively, you can click on the “Tools” top menu and select “Add Audio Track.”

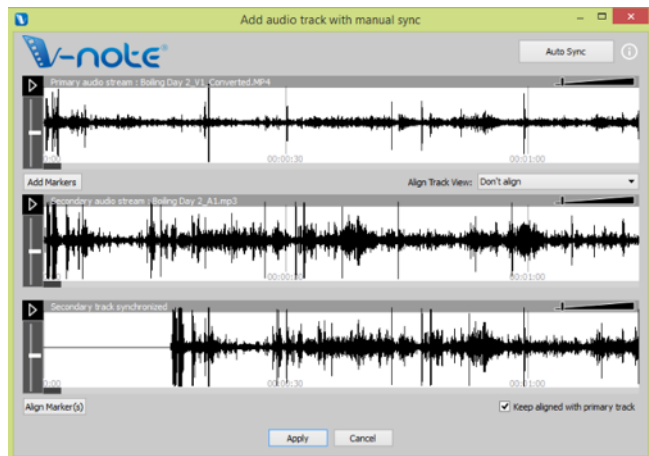


Automatically Synchronizing Secondary Audio Tracks

Once you have added your audio track to your video, you may have to wait a few minutes while the data in the audio files is decoded; a progress bar appears. When decoding is finished, you will see a new window pop up like that on the next page. Displayed on the top white bar is the wave form for the video (i.e., the original audio track in the same file as the video). This is a representation of the audio track made by graphing volume across time. In the middle white bar is the wave form for the secondary audio track, or the one recorded by an external recorder. This is the new audio track (from, for example, a voice recorder or external microphone) that is to be associated with the video track and synchronized to its audio.



If your tracks have been recorded at approximately the same time at the same event, you can try to automatically synchronize them, by hitting the “Auto Sync” button at the top right. This will cause the computer to look for similarities between the two tracks and shift the secondary track left and right as needed to align the two. Once done, the third white space (the bottom one) will display a waveform also. This space will display the secondary track (the same one as in middle white space), but it will be aligned to the video. You can play them both at the same time by clicking either play button (top or bottom), and both will play at the same time. A double-click over the bottom track will bring the play head to the same respective position in both and begin play in both the top and bottom.

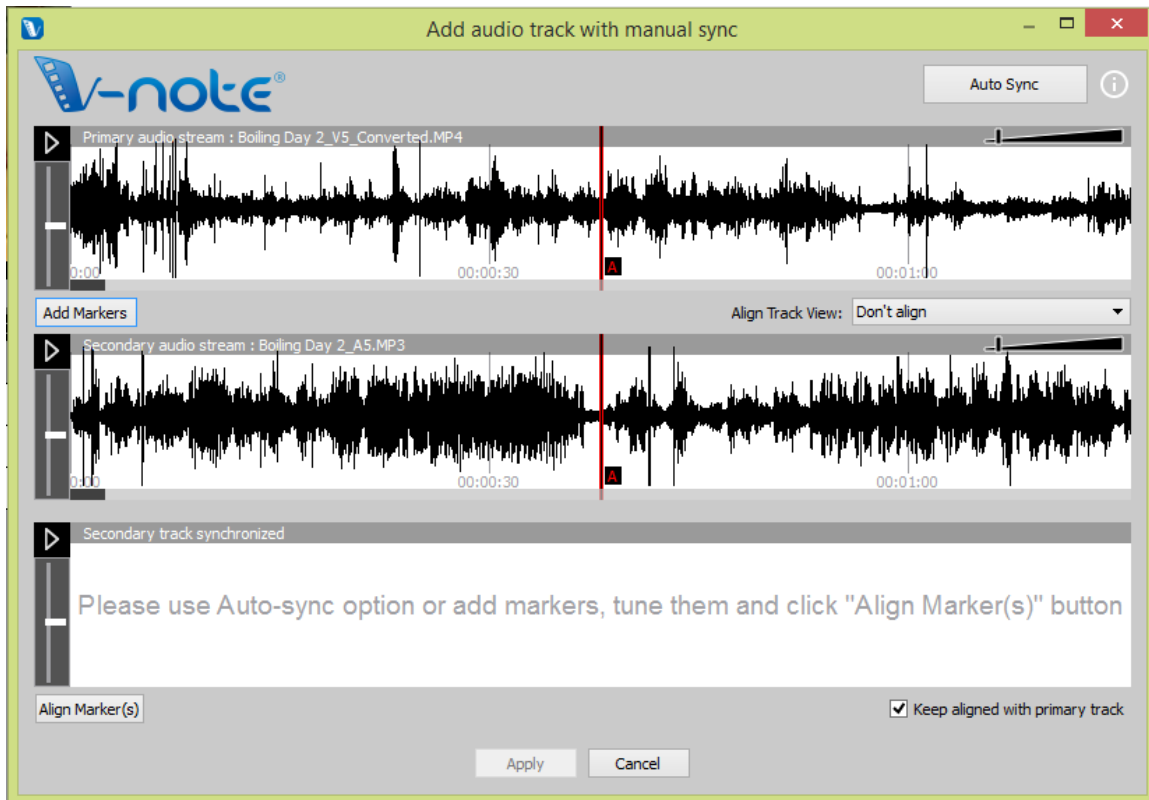


Once you have verified your tracks have been synchronized, simply press the “Apply” button at the bottom of the window. Your secondary audio track will then be added to the video file and the V-Note project. A copy of your original video will be saved for backup in the backup folder that will be displayed at the end of the process. You can also access any backups made at any time by selecting under “Tools” > “Open Backup Folder.”

If your **tracks are dissimilar** (e.g., overlaid commentary, an announcer calling a game, an audio recorder that was too far away, etc.) pressing the “Auto Sync” button will prompt no action, and the tracks will remain unchanged. The computer cannot find (enough) instances that are the same in order to line up the tracks. You can still synchronize them; however, **this will be a manual process**, as described in the next section.

Manually Synchronizing Secondary Audio Tracks

If you are not able to automatically synchronize your tracks, you can synchronize them using V-Note’s manual synchronizing features.

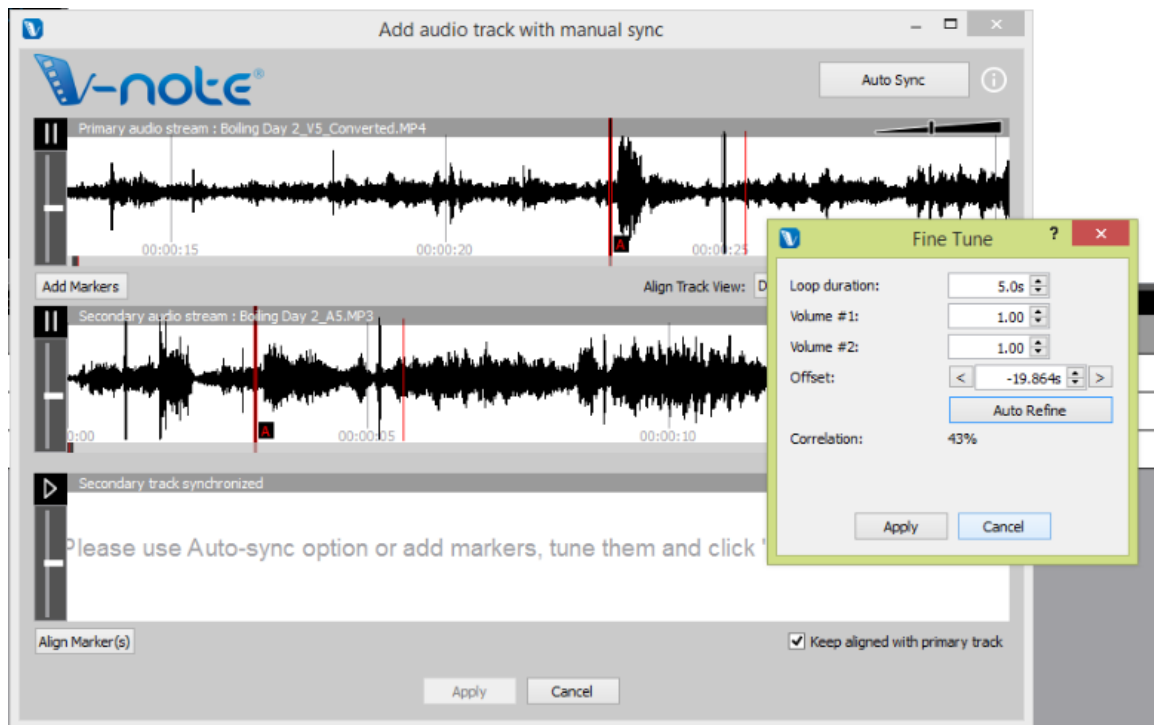


As with the automatic synchronization option, add your audio track to the project by dragging and dropping or by file menu (Tools > Add Audio Track). Once added, the same window appears. This time, however, you will need to select “Add Markers.”

Once this is done, two red lines (both labeled A) will appear over each waveform (as shown). These are the “A” markers. These can be played with their respective buttons. Through listening to both tracks and by looking at the waveforms (you can also zoom in with the slider bar), you should try to find a common point on the soundtrack (e.g., a clap, a cough, a hit, a run, a score, etc.). Once this is done, you can drag both “A” markers to the common points on each’s soundtrack. Do not worry that this be perfect.

You can fine tune it using the “Fine Tune” feature, which lets you loop (play again and again) the 5 seconds around the point you chose and nudge (offset) the tracks left and right while listening to both to ensure a good sync. Also, the correlation of the tracks will increase as they are nearer to being in sync.

Once the tracks sound in sync to you, hit the “Apply” button and the markers will be fixed. Next, exit the “Fine Tune” dialogue. Finally, click the “Align Markers” button and the tracks will be brought into synchronization at the point of the markers.



After “Align Markers” is pressed, the second track is added to the bottom row and shifted such that the two “A” markers now align. Playing the bottom one will also

play the top one at the same time. If done well, the two tracks will play in synchrony.

It is important to verify synchronicity at several spots during the video, however, as devices can record at slightly different rates resulting in a track that is in sync early become out of sync later in the track.



To fix drift, in the event there is some, you can add another marker (or many, in the event of very irregular recording speeds) to a new space in the secondary audio track (middle waveform) and repeat the steps outlined above. This will slightly stretch or compress the secondary waveform between the markers to ensure synchronicity with the primary audio track.

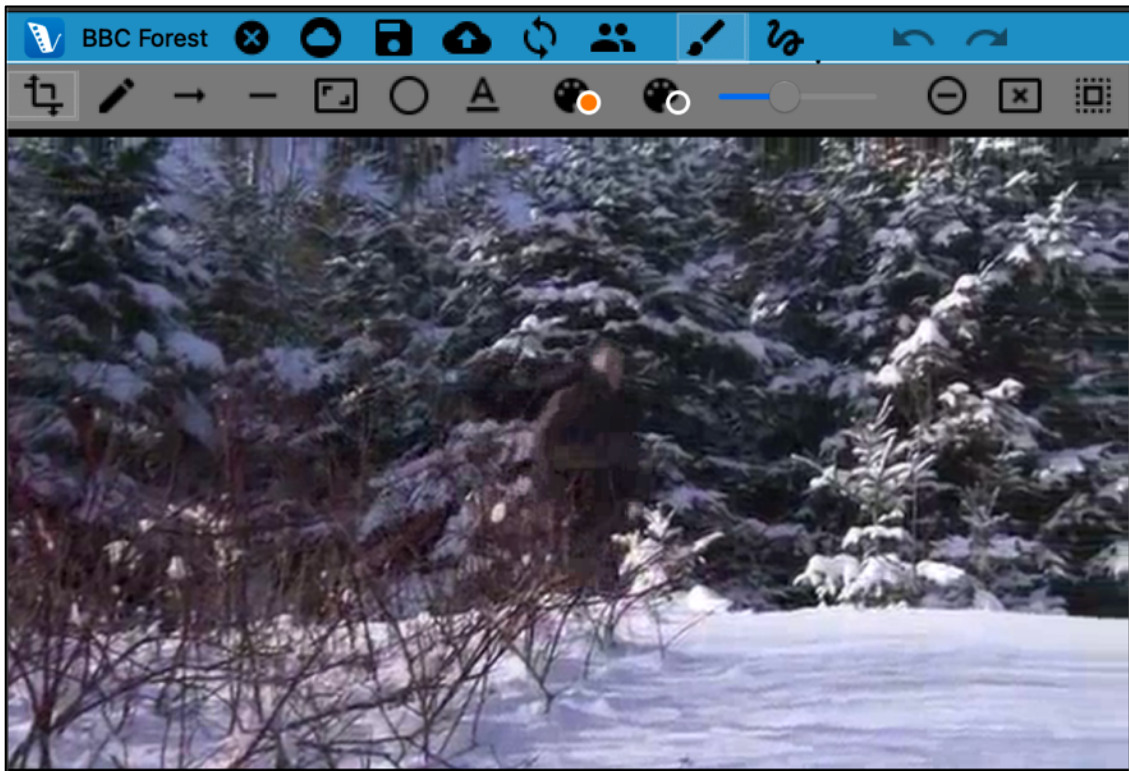
Chapter 9: Drawing on Your Videos

Drawing on your videos can be a good way to record and share information about them. V-Note allows you to draw in real time on a playing video and then play that drawing back as it was made. The drawing is remade as the video is played again.

You can also share these drawings with others via our storage and streaming services. They are automatically uploaded when you publish your project online and can be shared with others in the same manner as transcripts and timeline data.

Using Drawing Controls

To turn on drawing controls press the pen icon in the blue bar above the video play window. The tools will appear as shown below. You can choose the pen size and the color on the left side of the toolbar. On the right, the [x] allows you to clear the current drawing from the current frame going forward and the  lets you clear all drawings you have made. Drawings of other collaborators,  if present, will be unaffected.



The squiggly line allows you to check which user's drawings are displayed. Only one user's drawings can be displayed at a time.

Adding Drawings to Your Videos

In order to draw on your video **select a pen, rectangle, circle, or arrow and a color**. Move the mouse cursor over the video to the spot where you would like to begin drawing. Hold down the right mouse button and begin to move the mouse. You are now drawing. When you release the mouse button, you can move to another spot without drawing. You can begin drawing over the video at any time.

The video can be playing or paused when you draw. If the video is paused, your drawing will appear in its entirety on that frame when the video is replayed.

If, however, you draw on your video while the video is playing, it will reappear that way; this means: it will be **redrawn on the video as it was made the first time** for all future plays.

In order to erase the screen going forward, while still keeping your drawings in the past, you can click the square icon in the drawing tool bar. If you would like to erase all your drawings, click the red X icon.

Sharing and Toggling Drawings

To share your drawings with others, simply upload the project as any other. The drawings will be contained within the project.

To toggle on your drawings or those that others have made, click on the squiggle and select the name of the user whose drawings you would like to see. Only one user's drawings can be displayed at any one time.



Drawing Timeline

As you draw, a drawing timeline will automatically be created which displays at which points on the video the drawings appear. This feature can be turned on and off (i.e., displayed or not) on the top menu View > Drawings Label.

Note: no description notes can be typed into labeled instances on the drawings timeline.



Chapter 10: Conversation Analysis

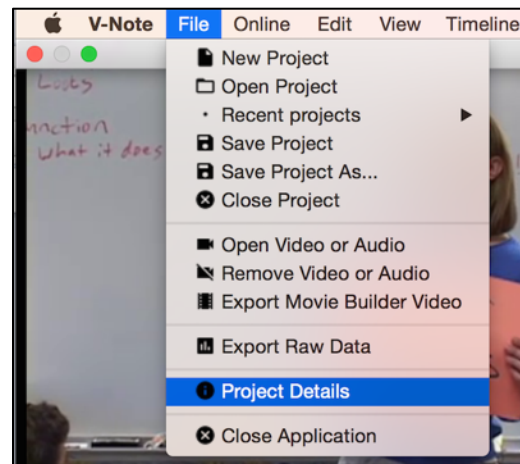
Conversation Analysis (CA) employs: Jeffersonian Notation (a formalized system of notation including arrows and other characters), sound waveforms, and a Courier font, which can be exported as it appears on screen for uniformity of text positioning. This can be used for linguistic analysis and that of other fields.

CA features can be toggled on or off per user preferences.

Turning On Conversation Analysis Features

Conversation Analysis features can be turned on or off by clicking: File > Project Details (or also by clicking the title of the project in the upper blue bar of the project).

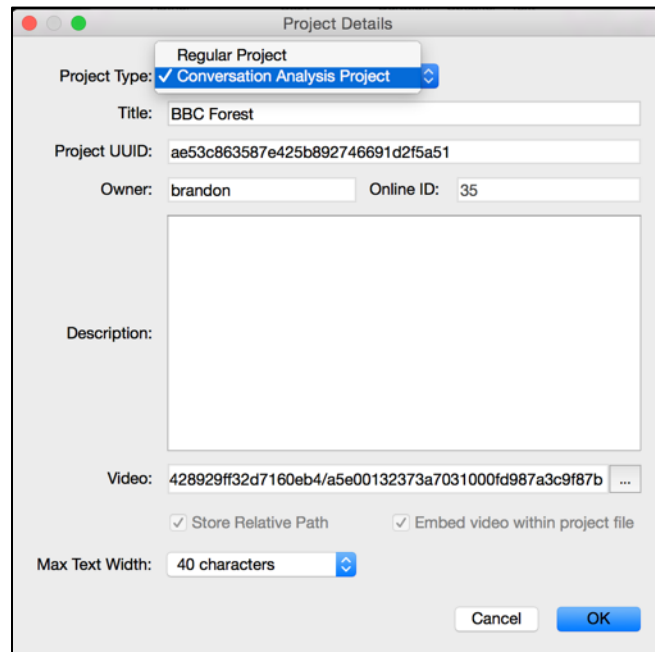
Once clicked the dialogue below appears. Near the top, under “Project Type,” you can select “Regular Project” or “Conversation Analysis Project.”



Changing Column Width

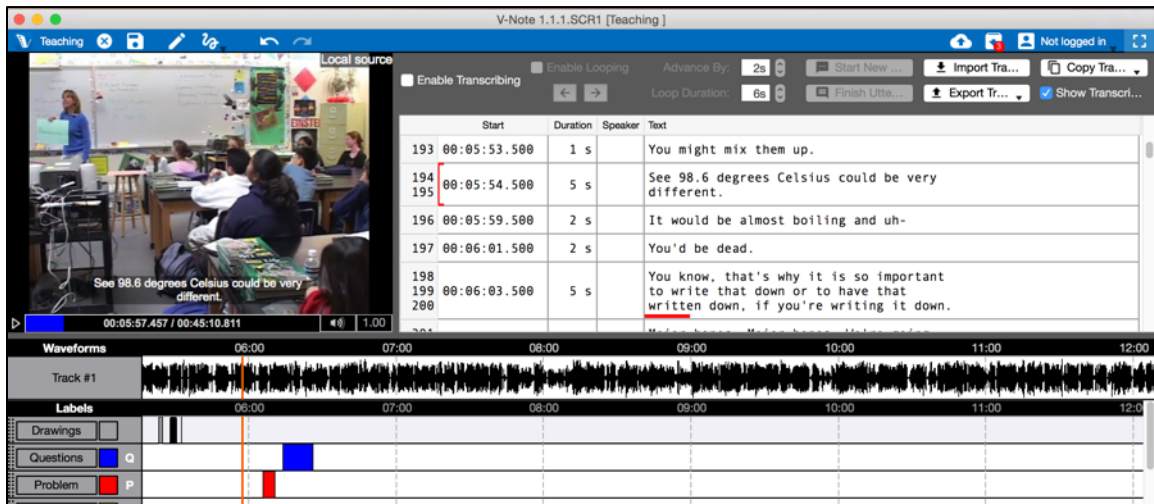
Turning on CA will allow you to craft the look of your output (or printed) transcript as well (for example, if you need to fit your text into a single column of a journal article). In this same dialogue box, near the bottom, you can select “Max Text Width,” to choose how many characters wide the text of your transcripts will be.

You can experiment with the width, as it can be changed at any time later. 40 characters may be a good starting point.



Sound Waveforms: Toggling On and Off

Waveforms (i.e., representations of volume along the sound track) can be toggled on or off regardless of whether or not CA features are being used. In the image below the waveform is the black squiggly line between the video/transcript on top and the timelines on bottom. These can help you to identify activities in the video and measure periods of silence or talk. On the other hand, you may wish to turn it off in order to use the space for a larger video window or more timelines.

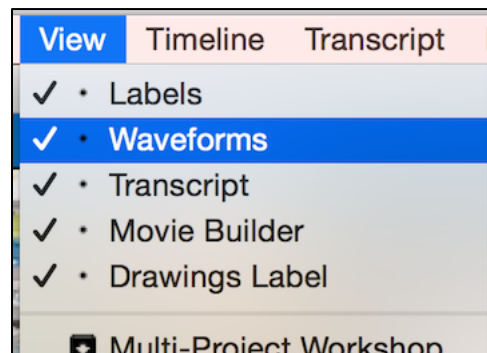


To toggle the waveform on or off, click:

View (top menu) > Waveforms.

When the checkmark appear, the waveform will be displayed.

This function can also be toggled on/off at the gray bar on the right of the V-Note screen.



Video Change Graph

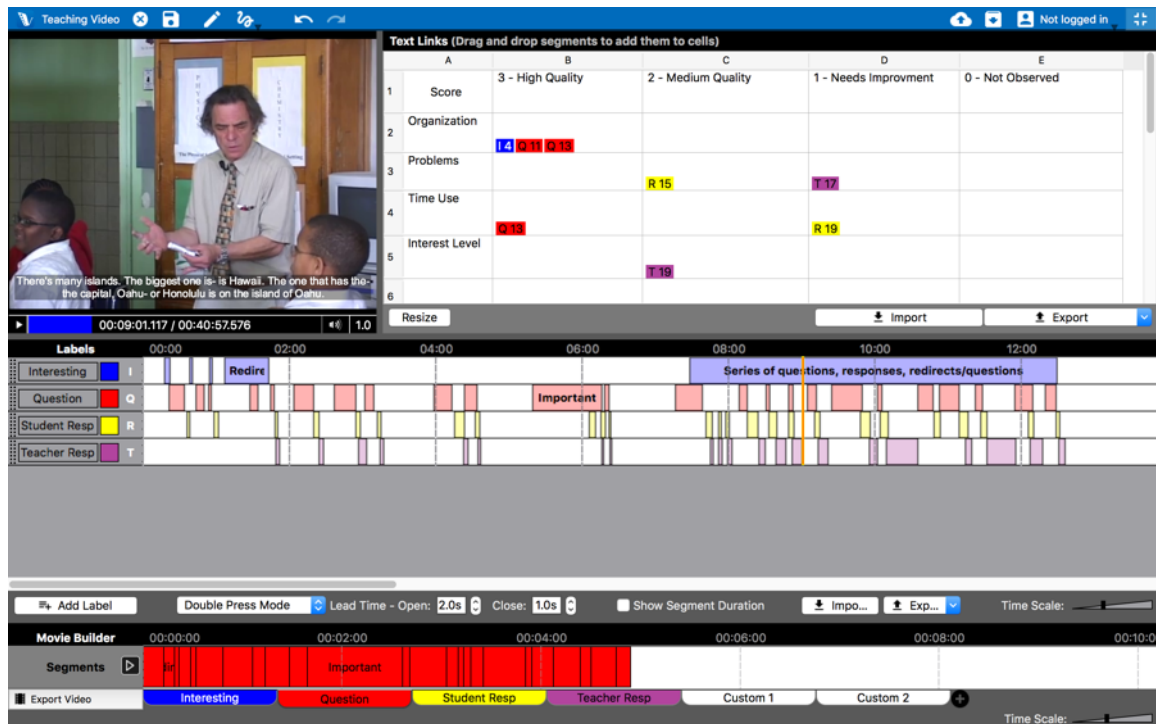
Similar to the waveform, the video change graph permits you to gain an overview of the entire video, but with an emphasis on the visual rather than on sound. Toggled on and off in the same manner as the waveform, the video change graph is shown in the same place as the waveform, directly below the video play window and the transcript window. This function can also be toggled on/off at the gray bar on the right of the V-Note screen.

Chapter 11: Linking Text Documents to Your Projects

Why Link Text Documents to Your Video Projects?

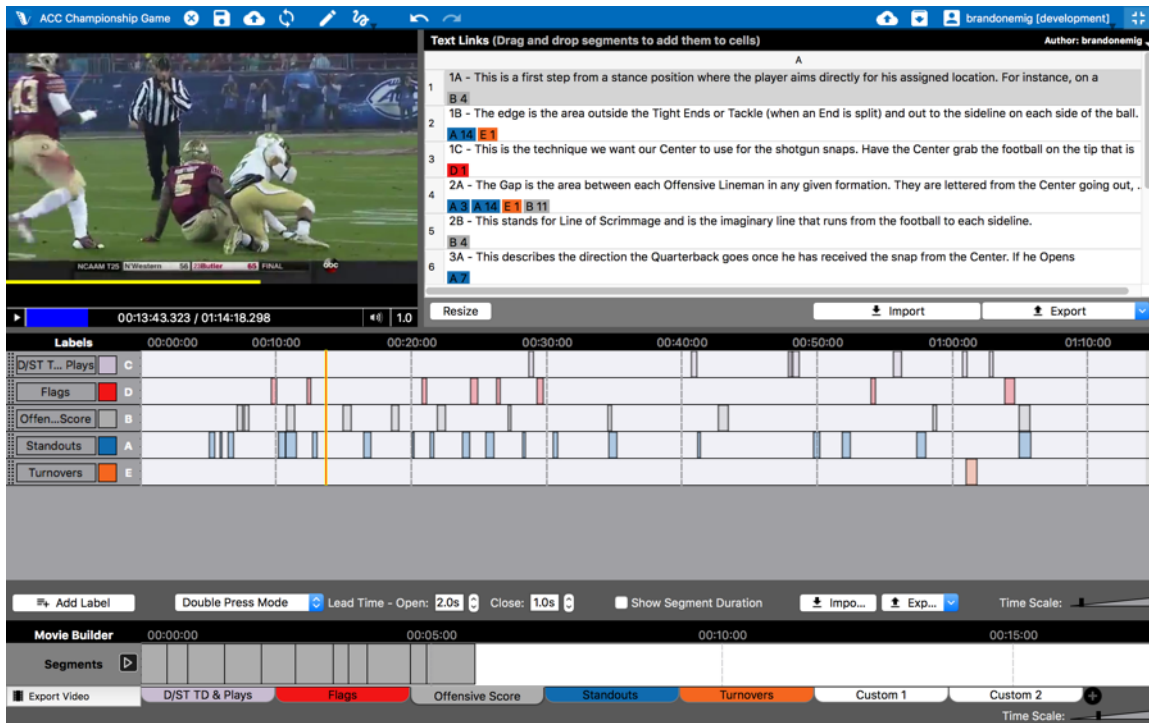
Generally, the text-link feature of V-NOTE allows a user to drag and drop labeled instances of video from timelines into a cell of a table or list in order to create an association between these. These associations (i.e., the text link raw data) may be explored and analyzed in V-Note or exported to a spreadsheet or other program. The text-link feature view replaces the transcript view in the upper right of V-Note.

Linking text documents to V-Note video projects can be useful on many levels. Sports-focused users may wish to link playbooks. Any user may want to categorize, link a rubric, or score labeled instances from the timeline. Researchers may want to compare categorization across multiple users in order to calculate interrater reliability.



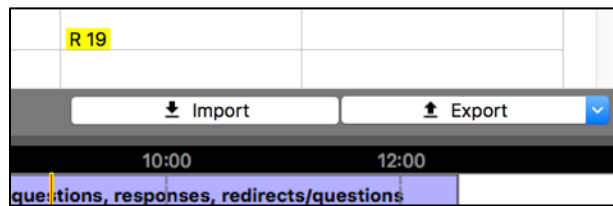
Turning On Text Links

To turn on text links in V-Note, click on the “View” menu on top. Then, choose, “Text Links.” This will replace the transcript view. (It is not possible to view both simultaneously.) To view the transcripts again, simply select “Transcript.”

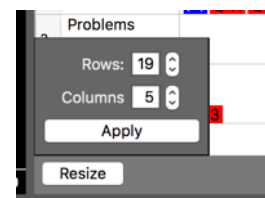


Entering and Importing Text Data

It is possible to add data (e.g., rubric, table, playbook, list, etc) to your text-link window for linking in three ways. You can double click a cell for direct typing within V-Note. Alternatively, data in the form of a table or list (i.e., in cells) can be copied from a spreadsheet program (e.g., Excel®) or table and pasted into V-Note by right clicking. And finally, by clicking on “Import” just below the text-link window, you can import your data from either a .CSV (comma separated variable) or .XLSX (Excel®) file type.

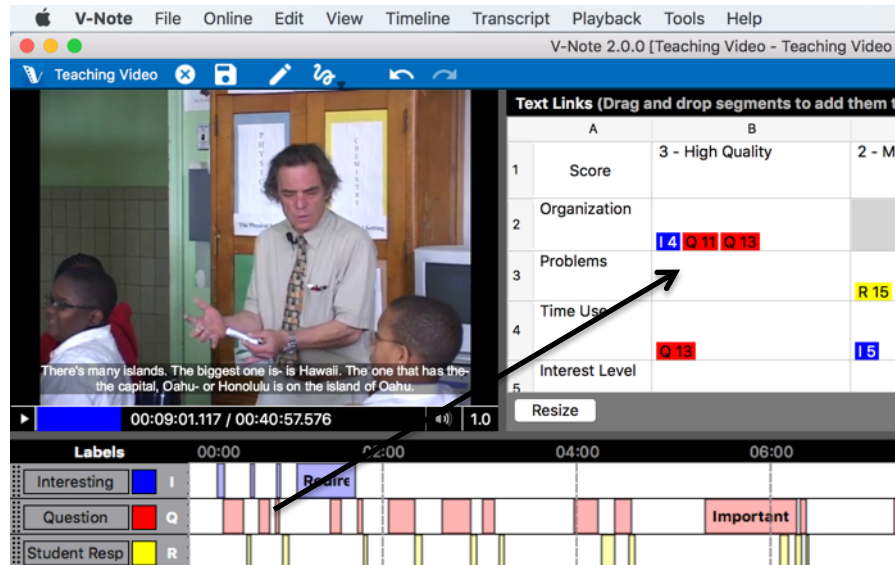


Altering cell sizes and the number of rows or columns can also be done. In order to alter row or column size, simply place your mouse cursor over the lines between the numbers or letters. The cursor changes to a double-arrow which allows for the stretching or compressing of a cell. To change the number of rows and/or columns, click on “Resize.” Once you’ve selected the numbers, click “Apply,” and the table will resize. For lists (e.g., playbooks), choose 1 column. NOTE: if you import or copy and paste a table into V-Note, the table will be automatically sized correctly.



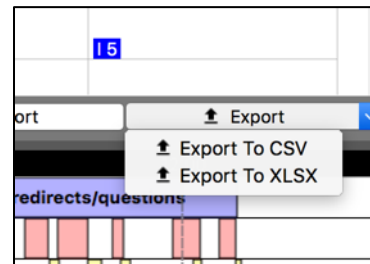
Linking Text to Videos

In order to link your labeled instances to your text-link data, simply drag an instance from the timeline to the chosen cell. For example, if you judge your second labeled instance on the “Question” timeline to propose high quality problem to your students, you might drag it to the appropriate column for in your text-link window. Sports example: if you found your team’s second score was a good example of Play AQ3, they it could be dragged to the appropriate space on the list.



Exporting Text Link Data

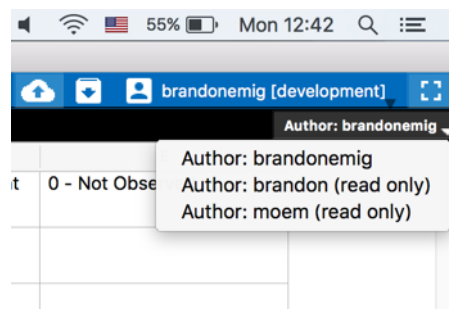
Near the bottom right of the Text-Link window is the “Export” button. This will allow you to export the data you have entered (both text and linked instances). This data can be exported in either .CSV or .XLSX format. The file will render as shown below. Data from additional users (if a V-Note project has been shared with others) will need to be exported into another file, if needed. This is discussed in the next section.



	A	B	C	D
1	Score	3 - High Quality	2 - Medium Quality	1 - Needs Improvement
2	Organization	Segments --- I 4 - Interesting (00:01:08-00:01:44) Q 11		
3	Problems	Segments --- R 15 - Student Resp (00:08:15-00:08:25) --- Segments --- T 17 - Teacher Resp (00:10:10-00:10:36)		
4	Time Use	Segments --- Q 13 - Question (00:07:16-00:07:39) --- Segments --- I 5 - Interesting (00:07:28-00:12:30) --- Segments --- R 19 - Student Resp (00:09:48-00:09:56) --- Segments		
5	Interest Level	Segments --- T 19 - Teacher Resp (00:11:32-00:11:56)		
6				

Multiple Users’ Text-Link Data

Similarly to other V-Note features (e.g., drawings, timelines data, transcripts, etc), the data from other users’ text-links is available. The text-link display can be toggled between users by clicking on “Author” in the black bar



in the upper right of the text-link window. When clicked, a list of all users with whom the project is shared will appear. When the user's name is clicked, his or her text-link data will appear and can be viewed and exported.

Interrater Reliability

The V-Note Team is currently working on an in-app automatic solution for interrater reliability, which will calculate Cohen's kappa and percent agreement. Currently, however, the easiest solution for calculating this is to invite all users' with whom a project is shared to categorize instances (possibly marked with notes within the labeled instances) by dragging them into a text-link corresponding to one category (e.g., a given column or cell) among possible choices on their own.

Additional users are able to copy the table data from the owner by right clicking anywhere over the text-link window. Exporting these data files from all users can allow for comparison and calculation of interrater reliability.

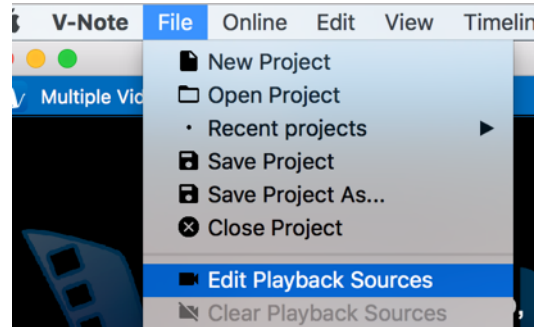
Note: it is also possible to compare various users' timelines directly to calculate agreement, however, given the likelihood of labeled instances overlapping to varying degrees – from slightly to completely – this could make for ambiguous results. This type of agreement might make for a constrained, initial qualitative-type round of analysis, for those wishing to take a more quantitative tack eventually.

Chapter 12: Using Multiple Videos

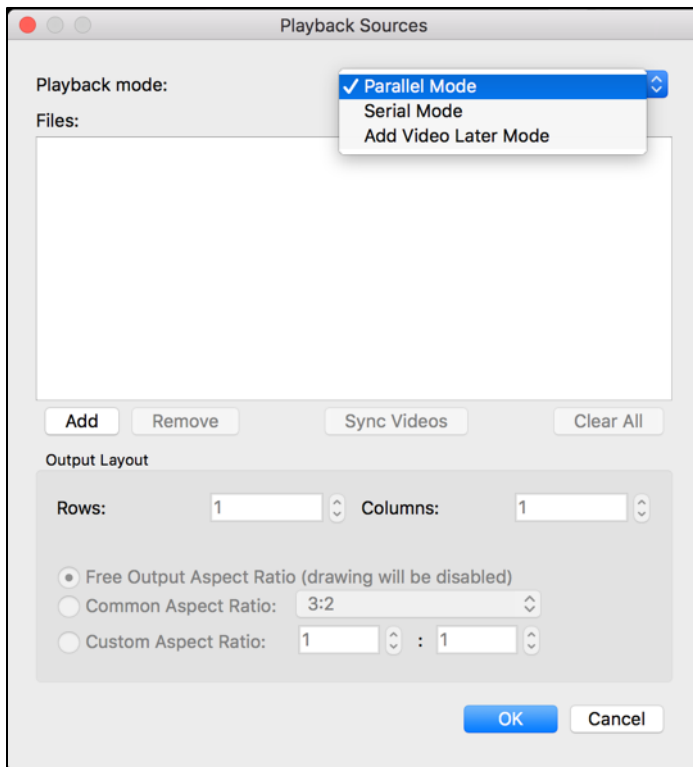
Managing Multiple Videos in V-Note

V-Note Full Version supports the use of multiple videos played together in the same project either in series (i.e., one after the other) or in parallel (i.e., all playing on the screen at the same time). In the latter case, the videos can even be automatically synchronized by their soundtracks (provided they are recorded of the same event at approximately the same time.) This can save many hours of time otherwise spent manual synchronizing.

If you have the full version of V-Note, simply click on > “File” (on top menu) > “Edit Playback Sources” to access the ability to manage how your videos are played.



Once clicked, you will see the dialog below. In the upper right, there is a list available for clicking including: “Parallel Mode,” “Serial Mode,” and “Add Video Later Mode.”

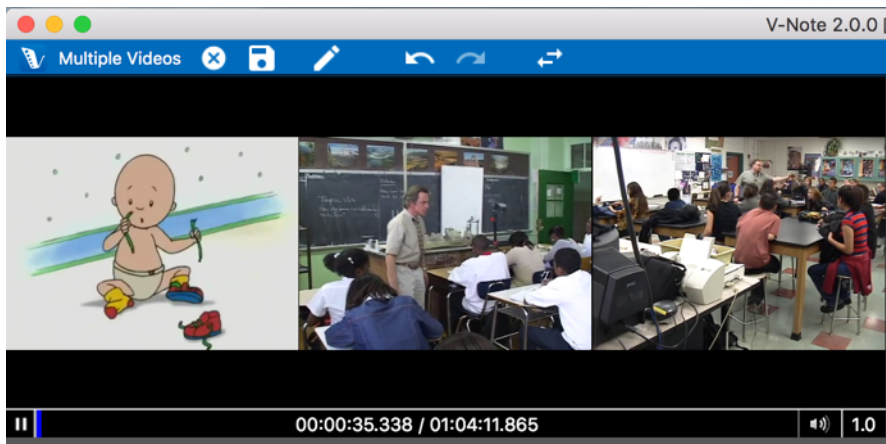
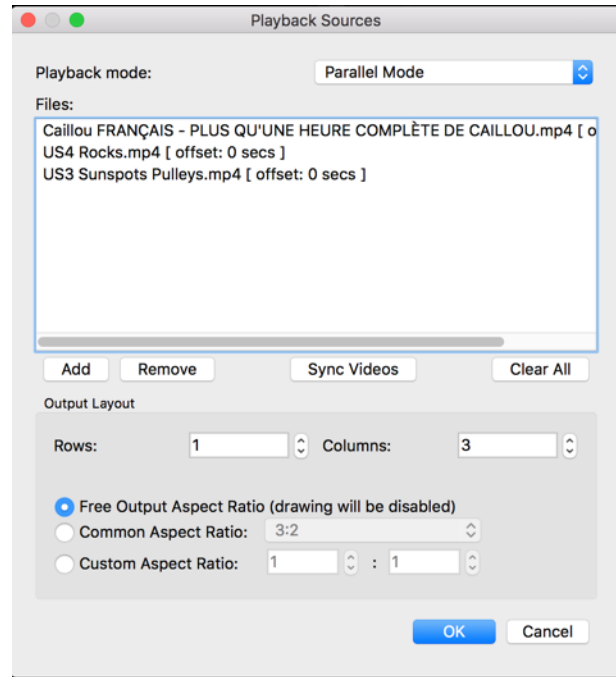


The “Add” button, when clicked, allows you to browse your video (or audio) files, which will be played in: parallel or series, per your choice.

“Add Video Later Mode” presents a black screen and a ticking clock, and can be used for live coding when a video is recording via one or more external cameras. Labeled instances can be made on timelines according to real live events. Then, adding the video(s) can be done later according to usual instructions.

Parallel Mode

Once videos have been added via the browser and the parallel mode has been added, the orientation of the screen can be selected. Both images below show the same three videos added, but the top image shows 1 row and three columns, whereas the bottom image shows 2 columns and two rows. Playing in series mode allows only one video to be played at a time with second and third videos, etc, being played only after the first one finishes. It is not currently possible to mix and match, i.e., to have both series and parallel videos in one project.



Drag to resize and reorient the screen and videos



V-Note does not arbitrarily limit the number of videos that can be played in parallel. At the time of testing, a computer with a 2.8 GHz quadcore processor is capable of simultaneously playing before stuttering:

- 5 highly compressed videos (approx. 180 Mbs / hour)
- 1 non-compressed 4K video (approx. 350 Gbs / hour)

Your computer will vary depending on many factors. If playback sound or image should stutter, please remove one video or compress them into a smaller format using another program for smoother operation. You can also experiment with playback settings to improve playback under Preferences/Settings > Playback Settings accessed per instructions in Chapter 1.

Aspect Ratio

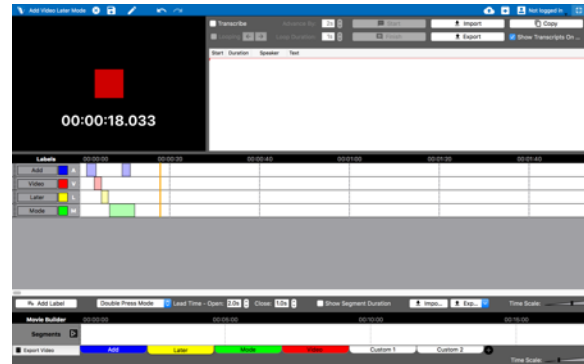
Please note that at the bottom of the dialog on the preceding page there is an option to adjust the aspect ratio. This is independent of the columns and rows, and can be thought of as a sort of canvas onto which the other videos are laid. This is to accommodate any drawings you may add to your projects. Drawings are overlaid onto the video(s); they are not rendered together into one file. You may set this ratio as needed to suit your own preference aesthetically before making any drawings. It is not, however, advisable to alter this aspect ratio once drawings have been made, as this would alter the drawings' relationship to the videos onto which they are superimposed.

Serial Mode

Serial mode could be used in cases where it is ideal that labels/hotkeys be reused in exactly the same way over multiple events occurring over time (a season's games, a student teacher's lessons, etc.). This not only eliminates redundant work (e.g., creating new project, adding same labels over again, etc.), but it can also allow for easier creation of a player's score video history, for example. Similarly, a numerical data file that is output would have data from all the videos.

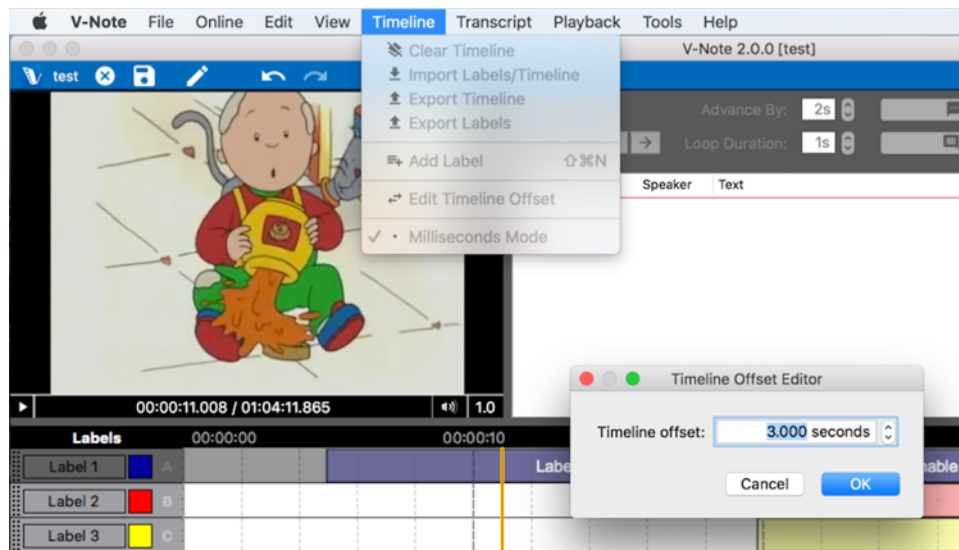
Live Coding with Add-Video-Later Mode

As mentioned, live coding can be done (say, of a sporting event, or a demonstration lesson) by using “Add Video Later Mode.” Make codes and apply them with hotkeys as usually, but rather than watching a video, you are watching the live event, to which you will add the video later. The video can later be shifted left or right vis-à-vis the timelines to align things if your labeling and video recorder(s) should start at different times.



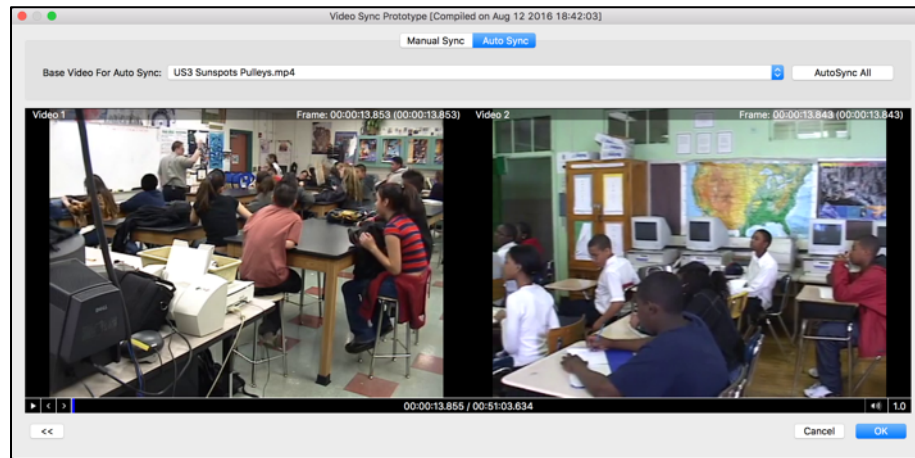
Shifting Timelines with Respect to Videos

If your video recording and timeline labeling did not start at the same exact time, it is possible to shift the timeline left or right to correspond with the video. To do this, click > Timeline (top menu), then > Edit Timeline Offset. A dialog (shown in the image below) will appear. This will allow you to shift the timeline left and right to the millisecond in order to make it align with your video.

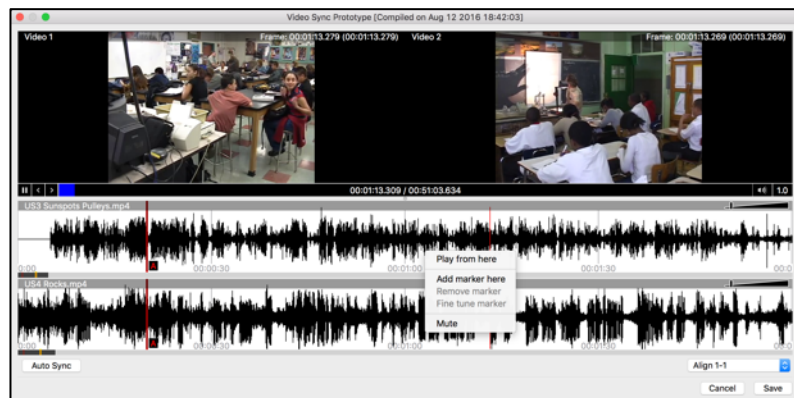


Synchronizing Videos

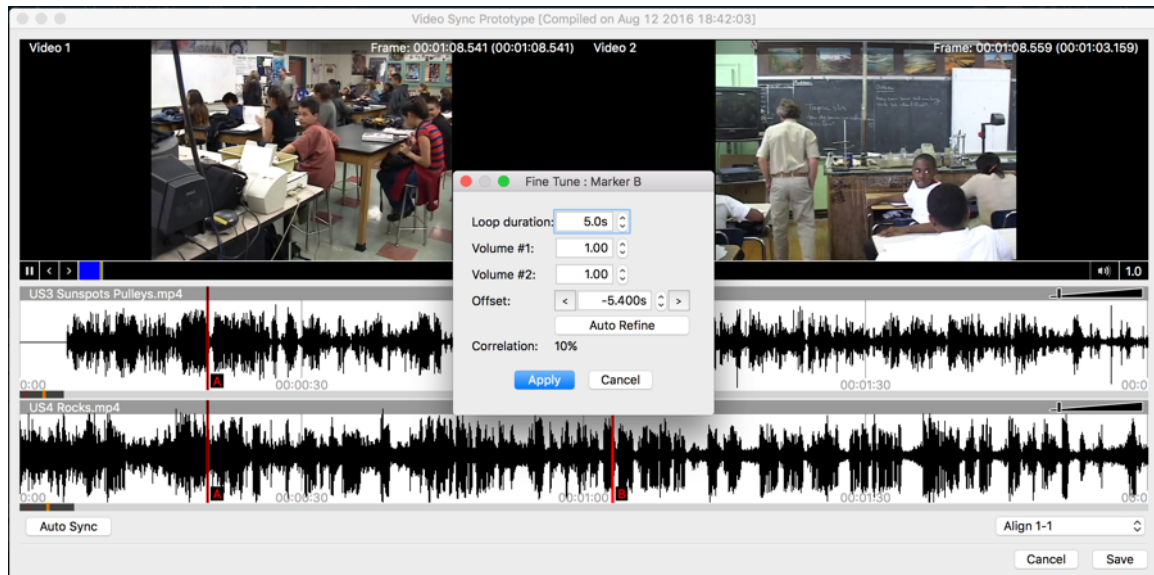
If you click on “Sync Videos” in the Playback Sources dialog, you will be presented with two options: “Manual Sync” and “Auto Sync.” If your videos were recorded at the same event and recorded generally the same sounds but from different locations, you should try to auto-sync the videos. Simply click on “Auto Sync” at the top so that it is highlighted in blue, and then click on OK. The process will take several minutes or more depending on how many videos there are and the bitrate of each. Confirm that the tracks play together by adjusting the volume of each track to the middle from the V-Note Main Screen so that both are audible. If they are not well-synced, you should try to manually synchronize the tracks.



If your videos do not record the same sounds, but you still want them synchronized (e.g., an announcer track, a narration track, same event but very different record locations, etc.), choose manual sync. This will present a window in which the videos and their respective waveforms are visible. A right click will allow you to make red markers labeled A, B, etc. By playing the tracks, you should find an aligning event early in the files (e.g., a score, a noise, a transition, etc.). Then, drag the markers on



each track to the same event. Next, repeat by adding another marker, B, and then finding a later event to align. Once the marker B is placed on an aligning event on both tracks, right click and select, “Fine Tune Markers.” The dialog below appears. While listening to a loop (short few second part over and over) of audio immediately around both markers, you can shift them with the shift arrows. Once you are satisfied with your alignment, you can choose, “Apply” which will align the tracks together in your V-Note project for all future playbacks. No further efforts should need to be made to synchronize the tracks.



If your videos are not continuous (e.g., one video has pauses or gaps different from the other(s)), they will not synchronize. V-Note looks for correlation of the waveform shapes of each video's sound track and can stretch or compress to achieve synchronization.

Sharing Multiple-Video Projects with V-Note (Non-Pro) Users

V-Note, our free version, does not support some features that our V-Note Pro version supports.

The playback of projects with multiple videos is supported on V-Note Pro but not on our free version. Nonetheless, projects made with multiple videos are somewhat compatible with V-Note (non-Pro). Only the first video (top of the list) will play in V-Note (non-Pro), however. If shared with V-Note (non-Pro) users, your projects with multiple videos should be arranged so that the most important one (best angle, etc.) is listed as the first one, as this is the one they will see.

There are a few more features that are not available on V-Note (non-Pro) for shared products. These include: Inter-rater reliability (IRR), transcript exporting to Excel® or other programs.

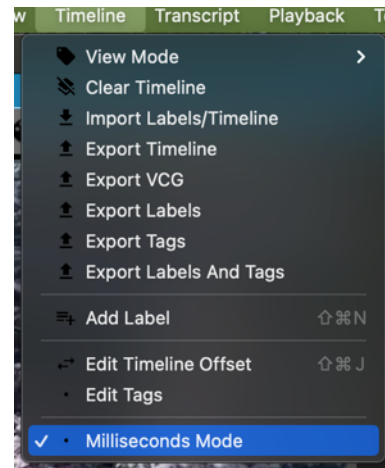
Chapter 13: Millisecond Mode

Labeling by the Millisecond

Called “Millisecond Mode,” this mode allows one to label instances with a minimum duration of one millisecond. It can be enabled by clicking > “Timeline” (on the top menu) > “Milliseconds Mode.” Millisecond mode is only available on V-Note Full Edition. V-Note (non-Pro) users will see instances labeled correctly on shared projects, but cannot make them to the millisecond.

Once enabled, the minimum duration for a labeled instance is 0.001 seconds, or 1 millisecond. Without this mode enabled, the minimum duration is 1 second for a labeled instance. Obviously, any increment above 0.001 seconds is also available (e.g., 0.5 s, 0.01 s, etc.).

This can be useful when video is played back in slow motion, when it may be possible to label several instances of something in one second or less, or when labeling a race or other type of competition when milliseconds separate a winner from second place. Single Press Mode and Double Press Mode both work as before with Millisecond Mode.



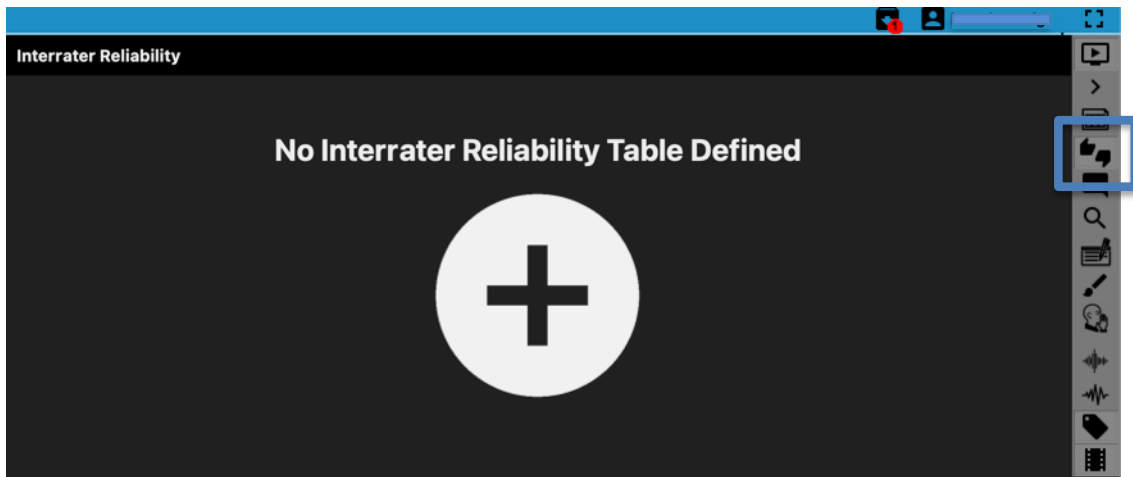
Outputting Data by the Millisecond

When outputting data, smaller units of export than 1 second may also be chosen. Each line in the numerical output file would correspond to 0.001 second, for example, of that unit were chosen. Also, when “Edit Interval” is clicked in the “Export Raw Data” dialog, a custom interval (e.g., 0.07 seconds, 0.53 seconds, etc.) can be set and saved. This can be useful in harmonizing your data to your labeled instances (e.g., you have set a single press label to 0.53 seconds to correspond to a phenomena of a given fixed length that you are evaluating).

Chapter 14: Inter-Rater Reliability

Setting Up Inter-rater Reliability

V-Note Pro supports automatic inter-rater reliability (IRR) calculations. IRR is not calculated from timeline and label overlap between users, as ambiguous cases would no doubt be present from partially overlapping instances. Inter-rater reliability calculations require some constraints per convention. Particularly, an instance must be shared exactly between raters (i.e., same start and end time) and be assigned to one of a fixed number of categories (also shared between users). To these ends, V-Note provides an IRR-specific interface.

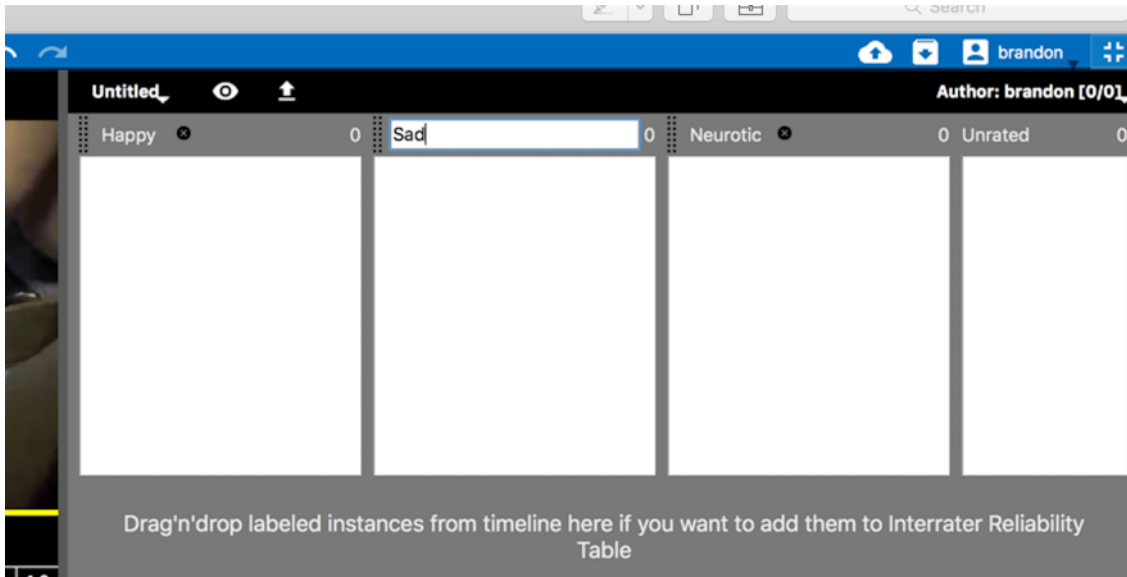


It can be accessed by clicking, on the top-menu: > View > Inter-Rater Reliability. Or use the button highlighted in blue to the left.

Please note: **ONLY the owner of a project can set up IRR** on their project; other users may not.

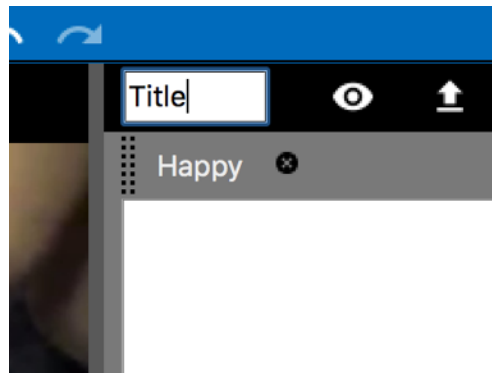
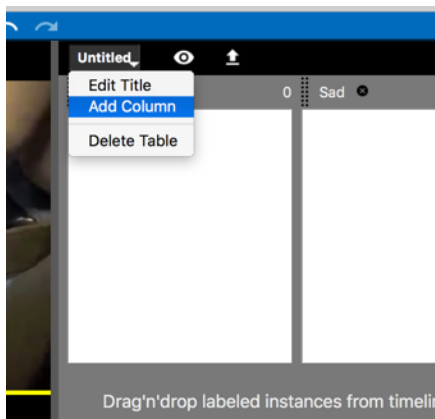
If you are the owner of the project and would like to set up an IRR table, click the large gray round button show above.

The upper right field will now change to the IRR field with columns, as shown below:



These columns are untitled by default. You can click on the “Untitled Column #X” titles to type to change them to your categories as shown below.

You can also add **change the title** of the IRR table and **number of columns** by clicking the “Untitled” part in the upper left of the IRR field as shown below.



Once your IRR table has all the categories it will need, you can begin **dragging up the labeled instances (yours or others') to the columns** (i.e., categories) per your judgment. The instances will be represented in their respective IRR columns where they can be removed or placed into another column from dragging and dropping.

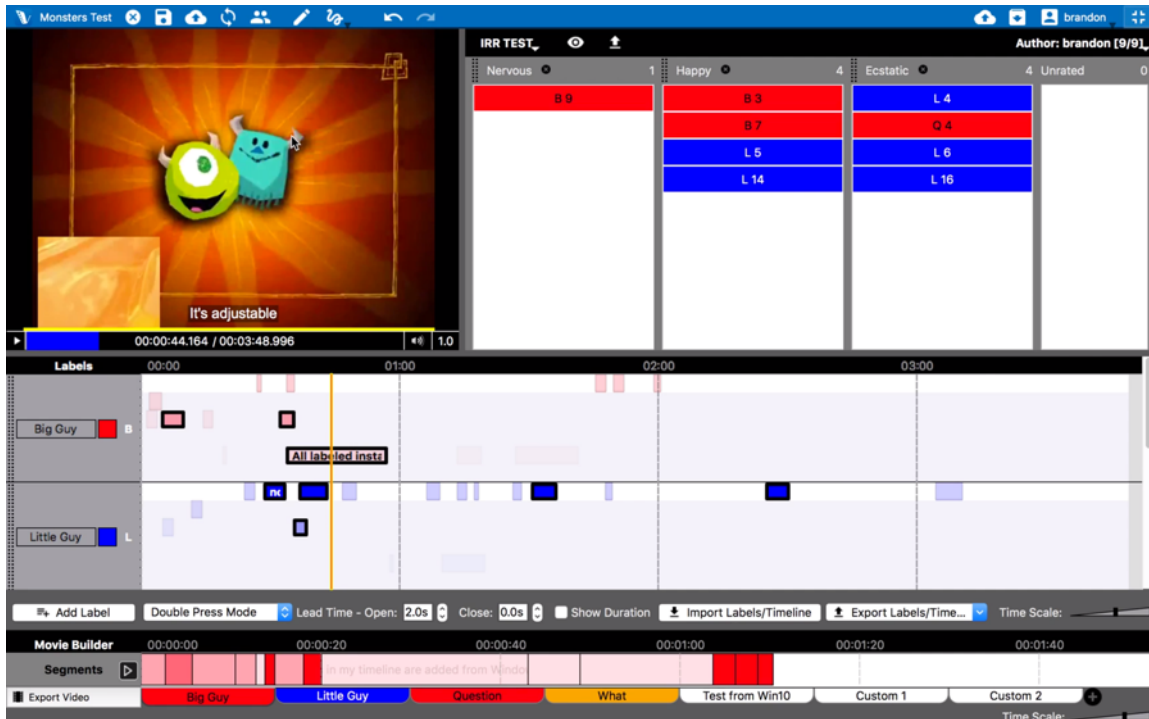
As an owner of the project, you will NOT require the “Unrated” column, although if you would like to mark an instance to be rated by other users (or yourself later;

maybe you are unsure how to rate it, for example), you can use this column. It will not be considered in calculations of IRR, however.

Users with whom you share your project will see, on their view, all the instances you have rated in the “Unrated” column, in order that they can see any remaining instances that need to be rated/categorized but they will NOT see your original category choice. This is by design so that ratings are truly independent. In those cases where resolving differences or otherwise collaborating is desired, you can do so via our “General Notes” or “Private Notes” functions at shown by these icons.



All instances that an owner has dragged into a category are highlighted with respect to un-rated instances, so that they might be more easily identified and viewed in their original context. The image below shows these labeled instances on their timelines as darker than those which are not rated in IRR.



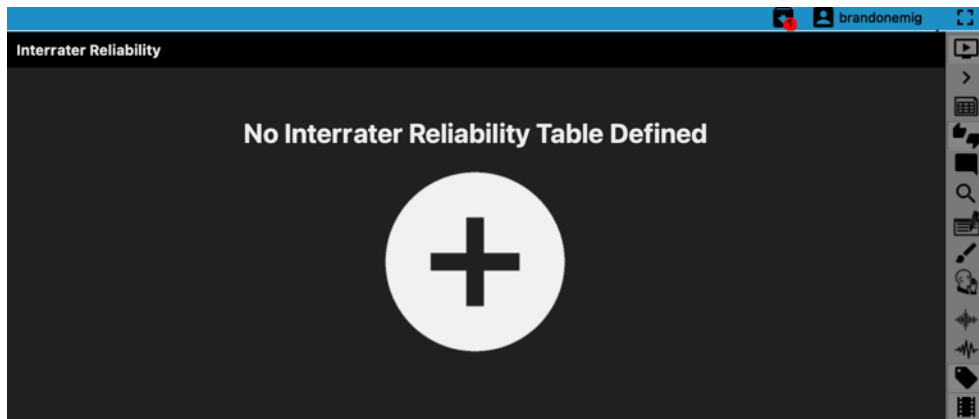
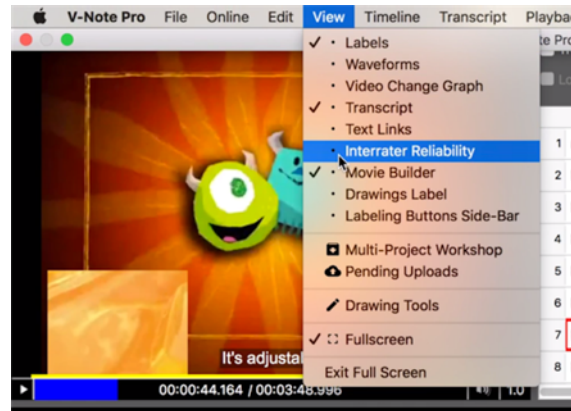
Again, all these instances will appear in other users’ IRR field under the “Unrated” column. The specific **categories the project’s owner chose will NOT be visible** to them in order that they can rate them independently. Collaboration with other users should take in-person or via place via “General Notes” or “Private Notes”

Using Inter-rater Reliability in Projects Shared with You

If you would like to participate in rating a project shared with you by another user, you must first join and open the project if you have not yet done so. Details on how to do this are provided in chapter 3 beginning on page 14 of this manual.

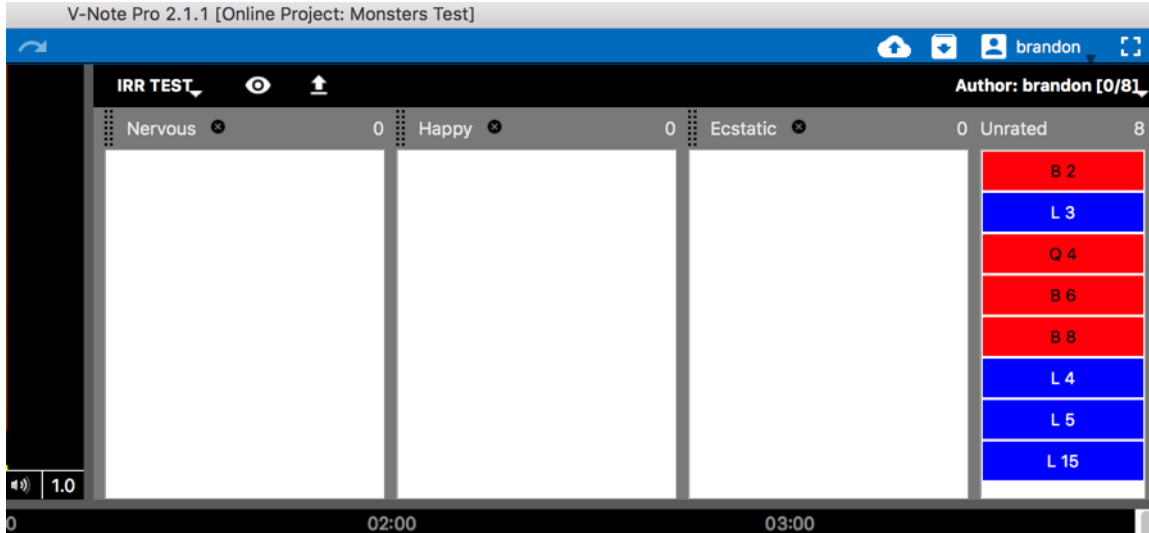
Once you have opened the project, click on the top menu: View > Interrater Reliability. This will change your upper right field to that with IRR information.

If the project's owner has not yet added any instances to be rated, you will see a statement: "No Interrater Reliability Table Defined." As a **non-owner**, you will not be able to create any categories. You will need to contact them to ask them to rate some instances and push these changes to V-Note's server.



If a project-owner has rated some instances, you will see all of them appear in your "Unrated" column at right, as shown below. You will not see into which particular categories s/he has placed them; this is by design so that rating is independent.

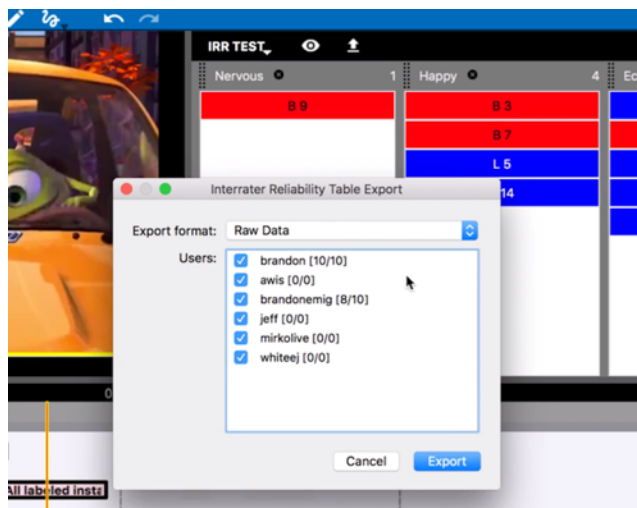
You can right click over these instances in the IRR field to locate them on the timeline or to begin playing them. When you think you know the category (e.g., happy, sad, nervous, etc) drag the instance in to the respective column, where it will appear. It will then disappear from the "Unrated" column. You can change these later.



Once you have rated (i.e., categorized) all instances, your “Unrated” column will be empty. Please push changes to server using the button on the upper left on the blue bar, or on the “Online” top menu choose “Save Changes to Online Project.” This will include them in the calculations the owner of the project will make using V-Note.

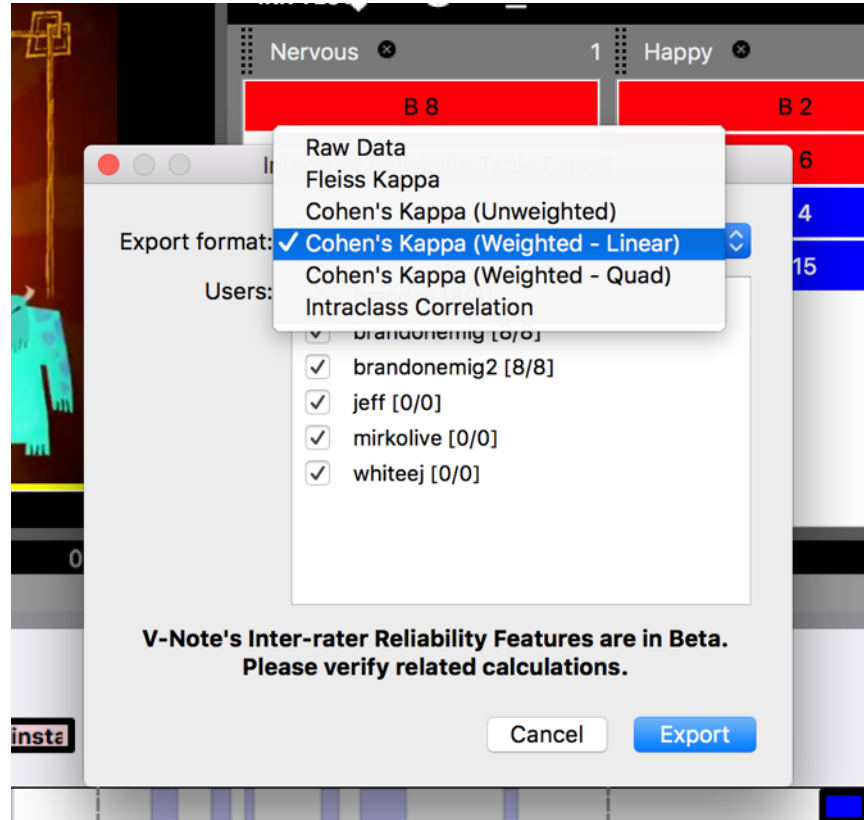
Please note, as a user (non-owner of the project), you are NOT able to select instances for IRR categorization that have not been selected by the project owner. If you would like to suggest a new instance for IRR consideration, please contact him or her directly noting the instance to him or her, and possibly adding a note within the instance on the timeline to this effect, (assuming it is yours and notes can be made in it).

Exporting IRR Data



Once all users have rated the instances (or even before), **you as an owner can export the data** by clicking on the upward export arrow in the IRR field near the top in the black bar. You will now be able to select the users whose data (IRR choices) you would like to include in your calculations as shown in the image below.

You can now select the export format you would like to use by clicking on the drop-down menu called “Export Format.” The choices are shown in the image on the next page.



You can choose: **Raw Data (IRR), Fleiss Kappa, Cohen’s Kappa (unweighted), Cohen’s Kappa (Weighted Linear), Cohen’s Kappa (Weighted Quadratic), and Intraclass Correlation.** Raw data (IRR) will only display who categorized what where and allow you to perform other calculations elsewhere.

These differ in important respects such as tendency toward linearity, number of raters accommodated, and logarithmic-type data. Please research elsewhere which is best used in your case. That said, an outline is provided in the next paragraphs.

If you are using many raters (more than two), you may find it is best to use “Fleiss Kappa,” as Cohen’s Kappa can only compare two raters at one time. Note that it is still possible to use Cohen’s Kappa with more than 2 raters with V-Note, but data will be output which compares raters 1 & 2, raters 1 & 3, and raters 2 & 3, and so on, each on its own Excel® sheet. Fleiss Kappa data will include all users and render data on only one page.

“Unweighted” means there would be no expectation of central tendency (e.g., Likert-type data has central tendency). An example of unweighted data would be the

categories: neurotic, sad, happy, etc. There would not necessarily be a linear scale associated with these (i.e., one is greater in degree than another). “Weighted” data could be exemplified by categories such as: strongly agree, agree, neutral, disagree, strongly disagree, and the like.

All files are exported in XLSX (Microsoft® Excel®) format and can be opened directly by that application. When opened, the files will render as shown below.

	A	B	C	D	E	F
1	Labeled Instance	Nervous	Happy	Ecstatic	Unrated	P
2	B 2 [Big Guy] 00:00:05-00:00:10	0	2	1	0	0.333333
3	L 3 [Little Guy] 00:00:29-00:00:34	0	2	1	0	0.333333
4	Q 4 [Question] 00:00:29-00:00:34	0	1	2	0	0.333333
5	B 6 [Big Guy] 00:00:32-00:00:36	0	3	0	0	1
6	B 8 [Big Guy] 00:00:34-00:00:57	2	1	0	0	0.333333
7	L 4 [Little Guy] 00:00:36-00:00:39	1	1	1	0	0
8	L 5 [Little Guy] 00:00:37-00:00:43	0	1	2	0	0.333333
9	L 15 [Little Guy] 00:02:25-00:02:3	0	3	0	0	1
10	P	0.125	0.5833333333	0.2916666667	0	
11						
12	Fleiss Kappa:	0.031055901	Slight Agreement			

Chapter 15: Statistics for Comparing Timelines

Introduction to Statistics for Comparing Timelines

There may be times when you want to **compare labeled instances between different timelines** for overlap. In so doing, you can compare between different peoples' labeled instances or labeled instances between one or more of your own timelines. This can provide compelling data such as agreement or similarity between definitions (i.e., labels' meanings) or between the uniformity (or lack thereof) in how labeled instances (codes) are applied and understood between individuals.

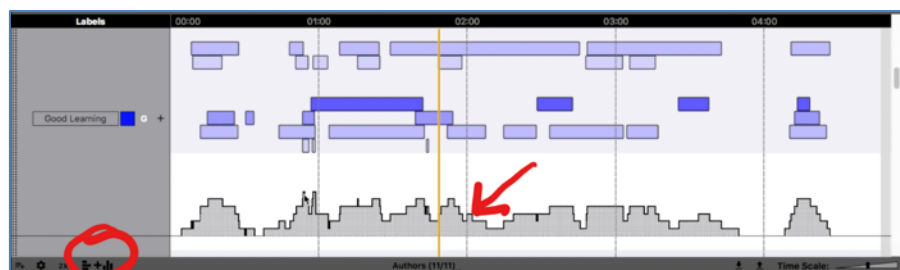
Unlike Inter-Reliability (IRR) calculations – discussed in Chapter 14 - which are built around common standards for reporting agreement statistical agreement, this type of statistic differs in two important ways. On the fortunate side, **good agreement** that occurs between users – particularly if users are blind to what others have coded (a “blind” setting is available when you share) – **is more compelling**, as instances are generated in a relative vacuum, as it were, by multiple users from the within the whole of the video. **Good overlap of this type is not to be generally expected.** IRR, on the other hand, employs discrete instances with beginning and end times established in advance. On the unfortunate side of things, however, you will need to describe fully and unpack what this means and how it was calculated to readers of your research or data who may not otherwise be familiar with V-Note and this type of overlap.

Analyzing Overlap Between Users

Comparing how different users apply labels to instances (i.e., code video) can be useful in forming a shared sense of a definition, a shared sense of practice or technique, or in proposing novel models for human behavior. V-Note has thousands of users around the world who are primarily interested in this use, including: surgeons, consumer researchers, educators, teacher trainers, researchers in all fields of the humanities, psychologies, sports coaches, and more. V-Note can be an important driver of convergent thinking (i.e., getting everyone on the same page) in these use cases.

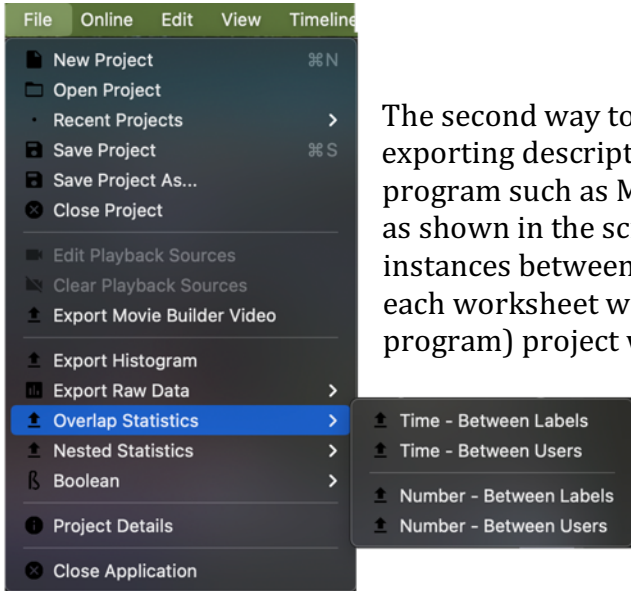
There are two ways to compare with respect to the user. The first is by **displaying**

a histogram by clicking at the bottom left of the timelines field (shown encircled above). The histogram is represented by the gray bars below the timelines in the



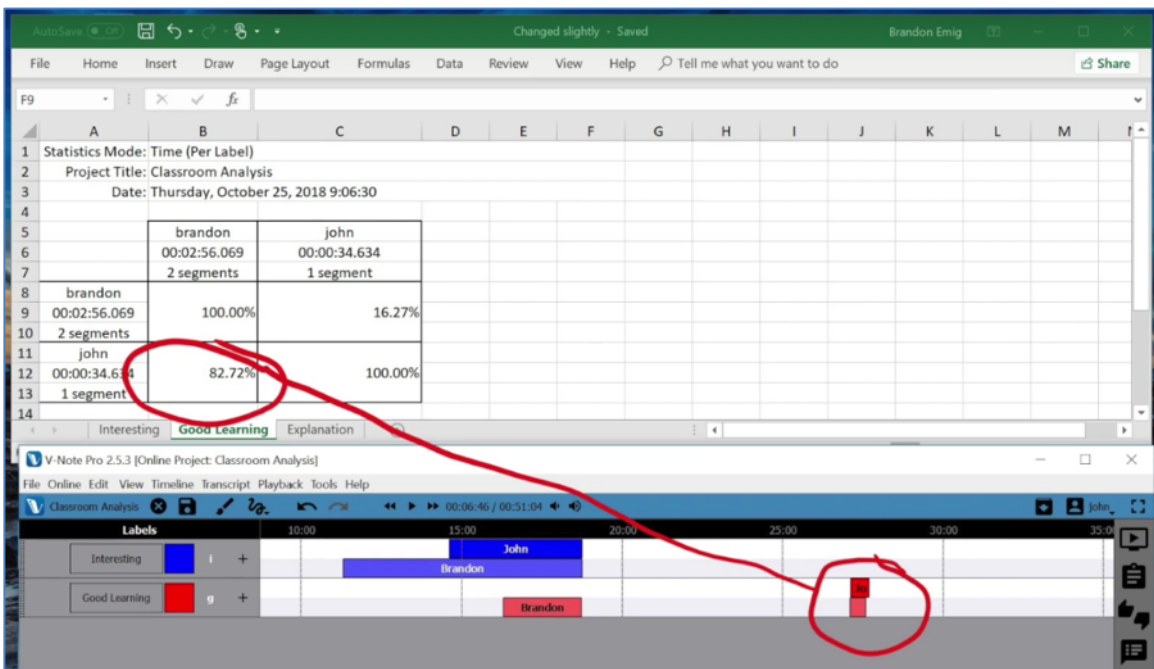
screenshot. You can also export this to a spreadsheet by clicking on the right icon for exporting (bottom left of timelines field) and choosing “Histogram.”

Scan QR Code for a Tutorial on Comparing Peoples’ Codes

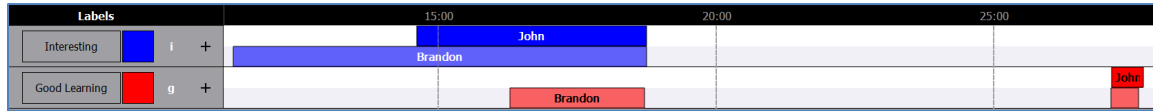


The second way to compare users’ timelines is by exporting descriptive overlap statistics to a spreadsheet program such as Microsoft® Excel®. This can be done by as shown in the screenshot at right. To compare labeled instances between users, choose “Per Label.” This way, each worksheet within the Excel® (or any spreadsheet program) project will bear the name of a label. When a single worksheet is opened, you will see data as shown below. The top of the screenshot shows an exported spreadsheet and the bottom shows timelines within V-Note.

We see that two individuals have labeled instances on timelines for “Interesting and Good Learning.” These are the tabs for worksheets.



Consider just the “Good Learning” timelines. We can see that Brandon’s labeled instances are below those of John. We also see that there is good overlap between John’s single labeled instance and the second labeled instance of Brandon.



Looking at the spreadsheet data below, we can see that 82.72% of John’s labeled instance (aka coded instance) is overlapped by a labeled instance(s) of Brandon’s. On the other hand, looking at Brandon’s labeled instances, we can see that John’s labeled instance overlaps with only 16.27% of Brandon’s instances. Note that all instances are considered together as a summed total.

	A	B	C
1	Statistics Mode:	Time (Per Label)	
2	Project Title:	Classroom Analysis	
3	Date:	Thursday, October 25, 2018 12:45:28	
4			
5		brandonemig	john
6		00:02:56.069	00:00:34.634
7		2 segments	1 segment
8	brandonemig		
9	00:02:56.069	100.00%	16.27%
10	2 segments		
11	john		
12	00:00:34.634	82.72%	100.00%
13	1 segment		
14			

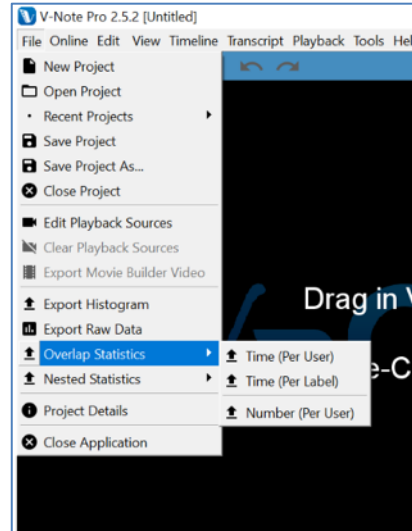
While this descriptive statistic is useful for conveying how liberal or conservative one person applies a given label when compared to another person, we must bear in mind that it can be necessary to convey both sides of the overlap: John:Brandon and Brandon:John, as described in the preceding paragraph.

Note that total times of the labeled instances and the number of total labeled instances are also shown in the table above and may be marshalled into comparison evidence per your needs.

Regardless of your goals for this type of statistic, you will need to explain it to your audience. Unlike Inter-Rater Reliability (a.k.a. IRR, discussed previously which is a standard set of statistics that are calculated and shared commonly, overlap described in this way does not have a long history of being shared and will need to be well unpacked for your audience – possibly with graphics similar to ours. If good agreement between labeled instances occurs without prior agreement (if a coder had the project shared “blind” to any prior codes of others) is very compelling and indicates uniform application of a label (code). In fact, high agreement of this type – i.e., generated in a vacuum - is more compelling than traditional IRR data and is worth the extra effort to explain. That said, we can expect it to be relatively rare.

Analyzing Overlap Between Labeled Instances

You may desire to compare timelines and their respective labeled instances between labels (i.e., codes) rather than people. This can be useful in determining if the “Per User” selection is made, your spreadsheet pages (i.e., worksheets) will have tabs with the titles of the users. When you click a user’s tab for a given worksheet, you will be able to compare your (or another users’) codes to one another. This will allow you to look for conceptual overlap or keep score in a sporting event.

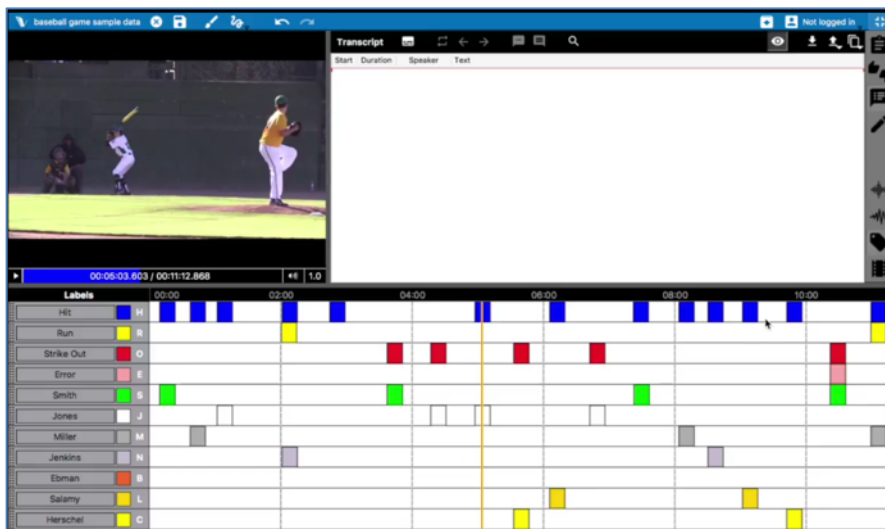


Scan QR Code for a Tutorial on Comparing Overlap of Labeled Instances Between Timelines

Comparing Overlap by Number of Labeled Instances

The timelines in the screenshot below represent labeled instances made of a baseball game. In this case, all the hits are labeled on the first line. Players’ names are listed on the bottom part of the screen, beginning with “Smith.” By pressing two keys – corresponding to labels – at the same time, two labeled instances are laid down at the same time. A quick visual scan of the timelines shows who made a hit when.

Labeled Instances on Timelines for a Baseball Game



The same data in the baseball screenshot above is rendered into a spreadsheet shown below by choosing: > File > Overlap Statistics > Number (Per User). This means that the user is held constant and we compare labeled instances between timelines (i.e., labels) for a given single user. In this case we compare only the number of labeled instances; we do not care about the duration of each codes or the total of all codes in this type of data rendering.

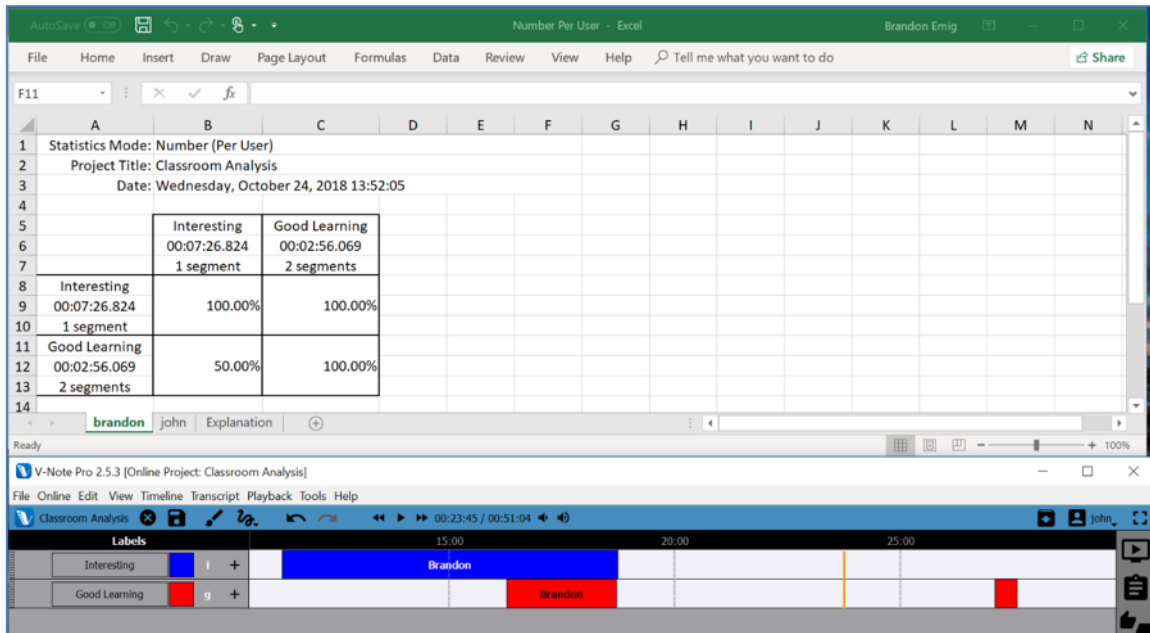
Note that as we go across the top row of data, called "Hits" (below the labels), we see the percentage of hits made by each player. Jones has 15.38%; Miller has 23.08%, etc. As we go down the hit column (column 1), on the other hand we see, the percent of the time that were hits from among all the times that the player was coded (others could be catches, for example). We can also see that 15.38% of all hits resulted in a run.

	Hit	Run	Strike Out	Error	Smith	Jones	Miller	Jenkins	Ebman	Salamy	Herschel
00:03:02.000 13 segments	100.00%	15.38%	0.00%	0.00%	15.38%	15.38%	23.08%	15.38%	0.00%	15.38%	7.69%
00:00:28.000 2 segments	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%
00:01:10.000 5 segments	0.00%	0.00%	100.00%	20.00%	40.00%	40.00%	0.00%	0.00%	0.00%	0.00%	20.00%
00:00:14.000 1 segment	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
00:00:56.000 4 segments	50.00%	0.00%	50.00%	25.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
00:00:56.000 4 segments	50.00%	0.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
00:00:42.000 3 segments	100.00%	33.33%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%
00:00:28.000 2 segments	100.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%
00:00:00.000 0 segments	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
00:00:28.000 2 segments	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
00:00:28.000 2 segments	50.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%

Tables such as this will produce extraneous data in addition to what you are seeking, so it is important to know how to interpret the data within them and verify that you have the correct data.

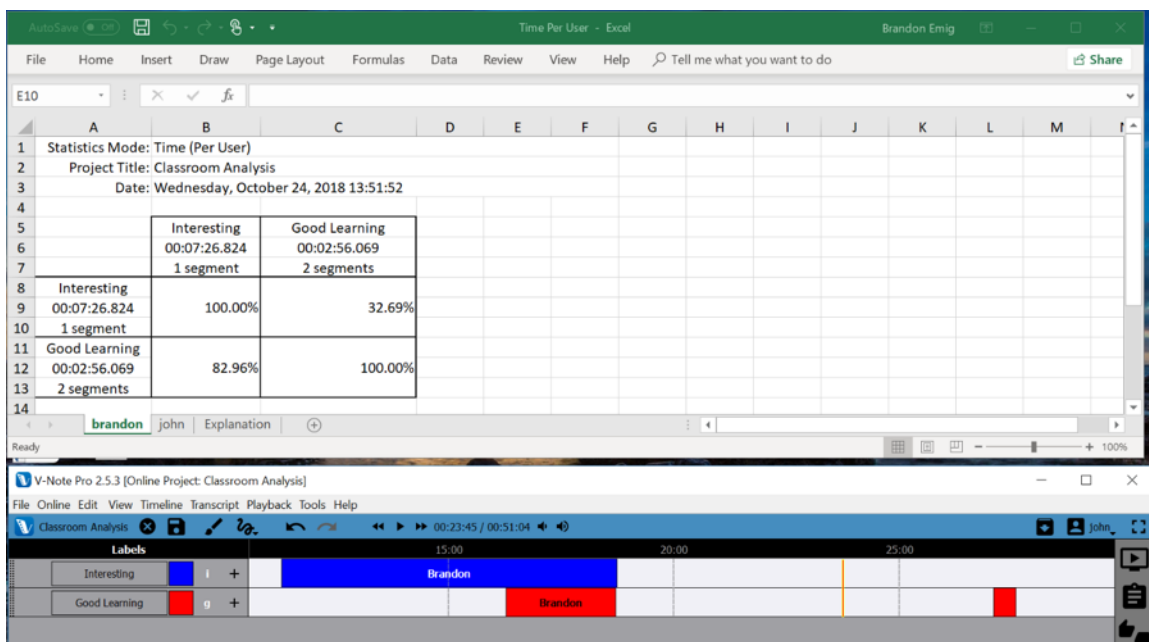
A simpler example of the same type of data rendering may be helpful. It is shown on the screenshot on the next page. Note that Brandon has 2 labeled instances for "good learning" and one for "interesting." One of these "Good Learning" partially overlaps with the "Interesting" labeled instance; thus we see 50%. All "Interesting"

labeled instances (in effect, one of them, in this case) are overlapped, thus we see 100%. We also see 100% showing that each code overlaps 100% with itself.



Comparing Overlap by Time of Labeled Instances

The prior example considers overlap but does not consider the duration of overlap. Any overlap whatsoever is counted as overlap in a binary way, i.e., 1 or 0. By choosing > File > Overlap Statistics > Time (Per User) we will consider only duration of the overlap between labeled instances on different timelines.



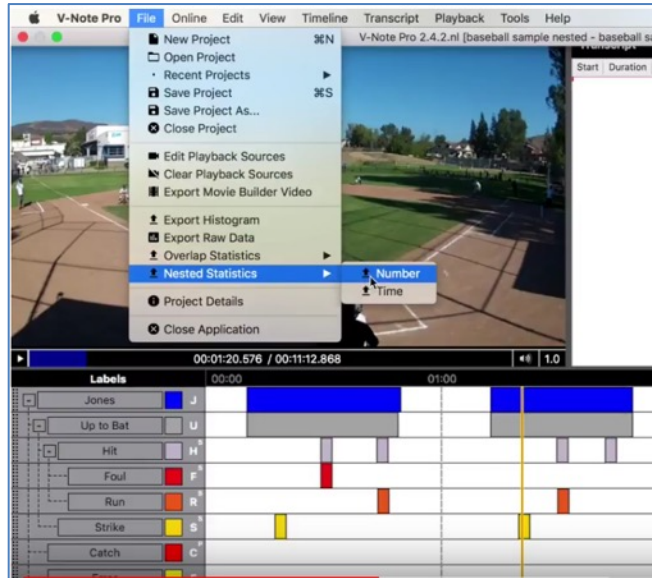
A simple example is shown at the bottom of the previous page using the same data just discussed. The top half of the screenshot represents spreadsheet data of the timelines in the bottom half, as before. The difference is that we see the overlap percentage in terms of duration. **Gone is the binary: yes/no for overlap.** Thus, we see that of all of the labeled instance *time* laid down (over multiple instances) for “good learning,” 82.96% of it is overlapped by another code, in this case “interesting.” 32.69% of the “interesting” labeled instance *time* is overlapped by “good learning.”

Here, too, it is important to ignore self-overlapping labeled instances (always 100%) and keep the orientation of one’s data straight: “interesting”：“good learning” versus “good learning”：“interesting.”

You may find it helpful or necessary for your argument to include and explain various types of data from among those discussed here: overlap time percentage, overlap number percentage, total number of labeled instances, total time duration of labeled instances, etc. Also, Inter-rater reliability (IRR) type data – (See Chapter 14) may be a simpler approach for your needs.

Analyzing Your Nested Codes

Making and applying nested labels or nested codes is discussed in Chapter 2 (p. 14). Generally, when labels may have a hierarchical relationship with one another, nested codes are used. You may consider them to be sub-labels or sub-codes. For example, at right a baseball player is shown with various labels that apply only to him: up to bat, hit, foul, run, etc. These can be applied to other players in the same hierarchical manner also.



The use of nested codes provides a quick visual of the relationships between codes. Also, employing nested codes in V-Note allows us to use a special function of V-Note for determining descriptive statistical relationships between the codes.

Accessing these statistics is done as shown in the picture above. Choose “File” from the top menu. Next, choose “Nested Statistics.” You can then choose between “Number” and “Time.” Once selected, provide a name for your file. This will open in your favorite spreadsheet program, such as Microsoft® Excel®.

Number-type calculations are done with respect only number of labeled instances (e.g., 10% of pitches were hits); the amount of time of each instance or all together is not considered. Time-type calculations, on the other hand, are done only with respect to time of codes (e.g., Jones spent 5% of time up to bat); the number of individual labeled instances is not considered.

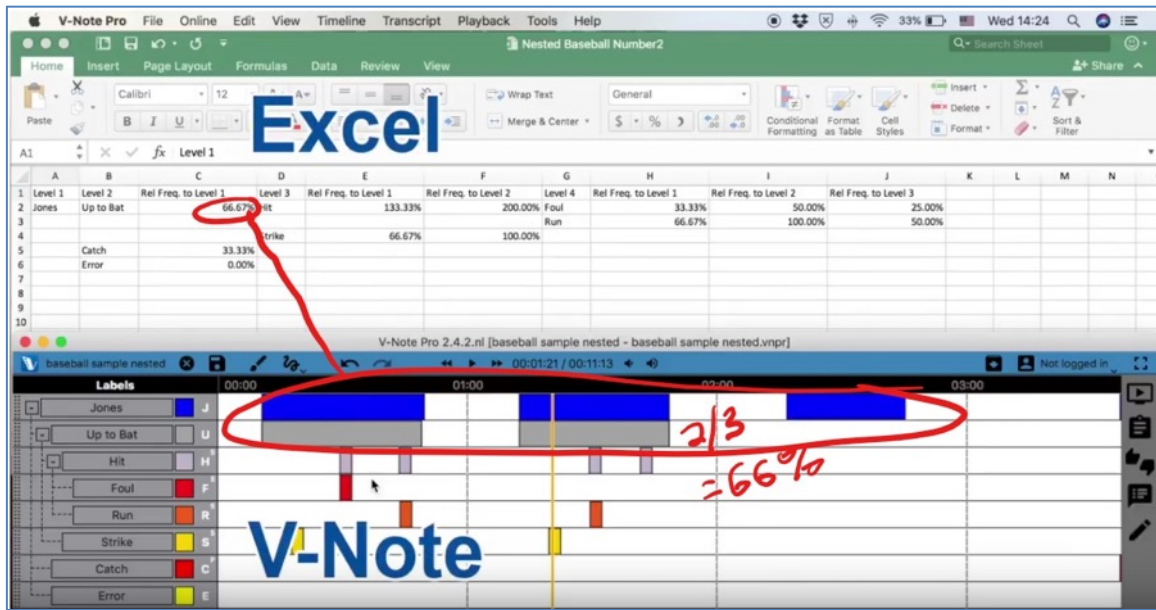
The screenshot on the next page shows an example of the Number-Type calculations. It shows that Jones was labeled (i.e., coded) three times and two of those times (i.e., 66.67%) of those times he was up to bat. (The other time he may have made a catch.) The exact labeled instances are circled in red. The calculation of the % is shown circled and linked, also in red.



Note also that each level or labels is linked to all higher levels of codes. For example, “hits” is liked not only to “up to bat” but also to “Jones.” The relative frequency will be calculated with respect to the level labeled on top of the Excel ® document.

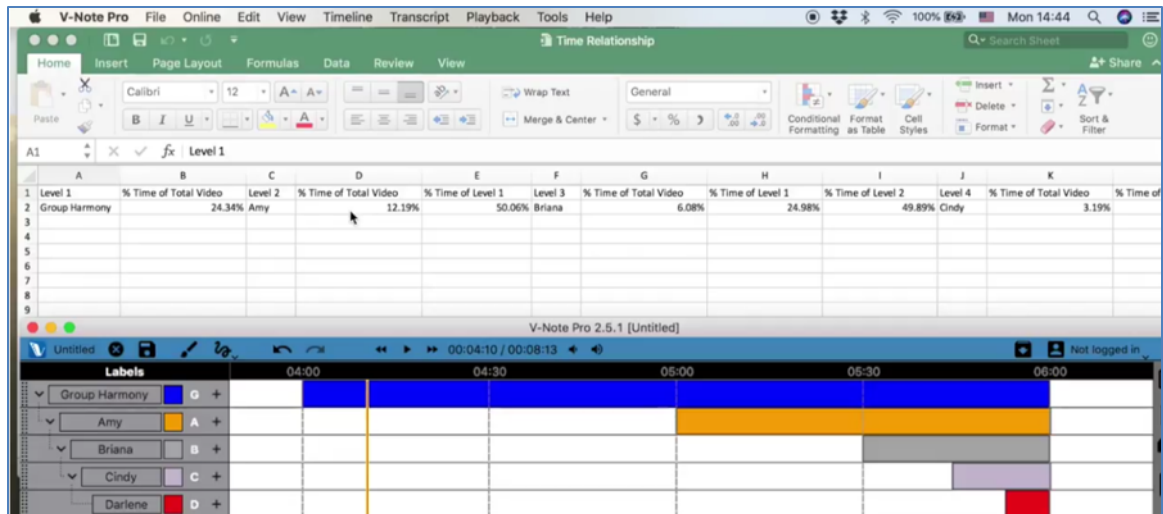
Scan QR Code for Tutorial Video on Nested Labels & Statistics

Nested Codes Statistics Calculated by Number (Excel® on Top; V-Note on Bottom)



Nested code statistics calculated by Time are similarly created (except you click on “Time” instead of “Number” from the “File” top menu; see previous page) and similarly rendered as tabular data. The difference is that only the time (i.e., duration) of the labeled instances is considered. For example, 100 individual labeled instances totaling 2 minutes will be only considered as 2 minutes; the fact that there are 100 labeled instances has no effect here. See the screenshot below.

Nested Codes Statistics Calculated by Time (Excel® on Top; V-Note on Bottom)



Shown in the screenshot is a group of singers. Their time spent singing in whole-group harmony is represented by the blue line on the top timeline. Amy takes lead for the latter half (about 50% of this the whole-group time). Each singer takes lead for a time that is roughly half of her predecessor until finally all are singing in harmony again when Darlene joins the lead.

As each singer leads about half of the time of her predecessor, we can understand the descriptive statistics in the Excel® spreadsheet above the timelines. In the data below, we see

that Briana sang for 6.08% of the time of

F	G	H	I	J
Level 3	% Time of Total Video	% Time of Level 1	% Time of Level 2	Level
Briana	6.08%	24.98%	49.89%	Cinc

the total video, 24.98% of the time of “Level 1” (aka group harmony) and about half (49.89%) of the time of the prior singer, Amy.

As levels of nested labels become deeper and deeper (i.e, more levels of sub-labels), with each successive level, another level of data is added: % Time of Level 1, 2, 3, 4, 5, and so on. This allows for cross comparisons of just the right data.

If you are interested in getting out the exact amount of time of each labeled instance out or of all them or the number of codes, see the section on exporting the raw data. You can also view the video here which provides details.

Scan QR Code for Tutorial Video on Exporting Raw Data
(With Number and Total Time of Labeled Instances)



In summary, the two types of statistical calculations that can be output from V-Note for nested labels are very similar in the way they are rendered and exported to a spreadsheet document. They differ in that one way emphasizes duration or time of instances and the other way emphasizes the number of labeled instances. A careful consideration of your goals should lead you to determine which way will be of most benefit to you.

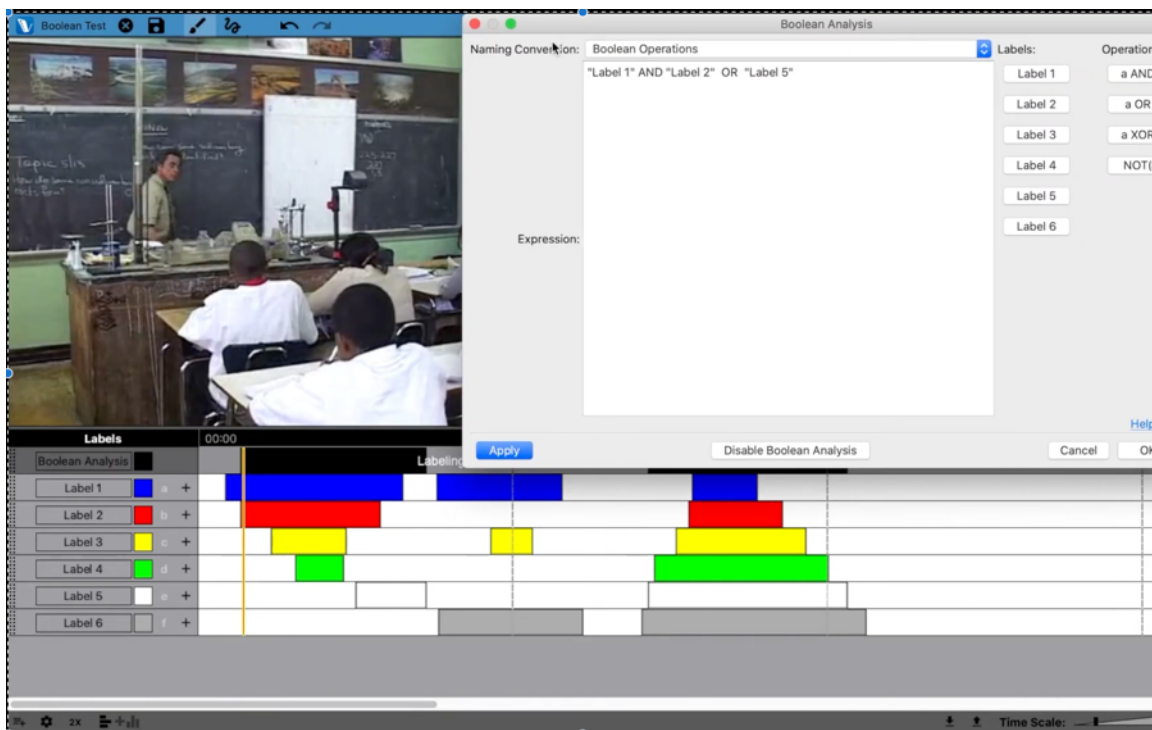
Boolean Analysis Functions

Once your video is labeled, if you would like to **find points and regions of overlap with more specific rules** than other more general overlap calculations allow for, Boolean Analysis Functions will help you do this. This feature will create a new label that specifically identifies points of overlap and/or non-overlap for as many labels (codes) as you choose.

To activate choose: **File > Boolean > Add Boolean Analysis Label**

This will create a new label called Boolean Analysis Label on the top of your timelines. You should change this to be more tailored to your specific needs. This is shown in black on the image below. You can also change the color. No hotkey is available as this label is not directly applied, but is rather a resultant intersection of codes of your choosing per the table, also shown below in the upper right of the image.

This particular **Boolean Analysis Label** is applied to wherever: **“Label 1” AND “Label 2” OR “Label 5” co-occur**. Note that to add these modifiers and variables, use the buttons on the right in the desired order. This is to prevent typos. Add parentheses wherever you would like to typing them.



Note the black labeled instance on time is calculated and added by V-Note as a result of the Boolean Operators entered here.

You can also change from Boolean Operations to Set Operations, which have the same functions but with different language. This is offered for those who are more familiar with this language or otherwise prefer it.

A short video can be viewed here that details Boolean Features including those described here as well as Boolean Key Combinations (described in Chapter 2).



Chapter 16: Automatic Face-Blurring

On Blurring Faces

Protecting privacy in human subjects research is important and often required by institutional review boards for research protection.

V-Note makes this easy by applying artificial intelligence on-devices (i.e., on your computer) to identify and cover faces with a blur.

This is beta feature and MAY NOT BE PERFECT. ALWAYS VERIFY. Faces appearing partially (half or more outside of the video), faces viewed from a long distance, faces partially obscured and other faces may not be identified as faces and therefor may not be blurred out correctly, constantly, or at all.

If necessary, you can manually correct any missed faces by using our drawing tools to draw a large dot or line over a face or faces that are not correctly covered.

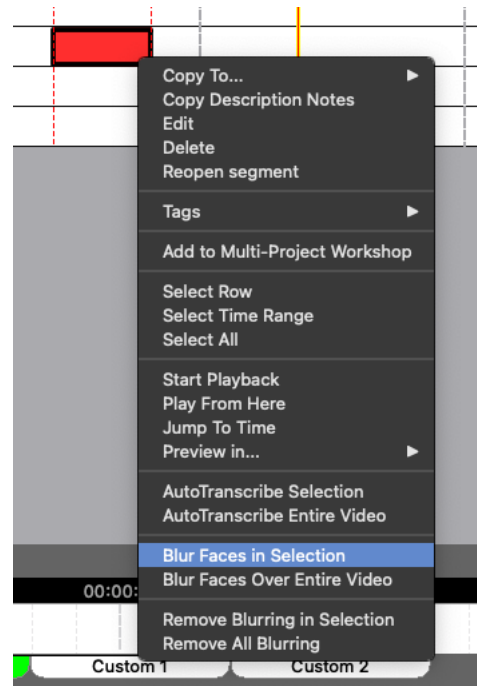
A well-produced video will likely be blurred appropriately, however, saving much time.

How to Automatically Blur Faces

To use this feature, Right-Click over any labeled instance or over whitespace within the timelines. Choose to “Blur Faces in Selection” (apply blurring only within the timespan of the labeled instance selected) or “Blur Faces Over the Entire Video.

The A.I. will then proceed. The time taken will vary widely as a function of your: computer speed, RAM, length of the video, resolution of the video, number and frequency of faces present, etc. This may be from several minutes to several hours.

The face-blurring will NOT export to videos made with V-Note. If exporting a video, faces would then be exposed. If you do not want your collaborators in analysis to see the faces under any circumstance, choose security setting “Restricted Playback” (see p. 28). Face blurring is also not supported by the V-Note Web Player. If using face blurring, share only in-app.



Chapter 17: Mapping Labeled Instances to Images

How to Map Labeled Instances to Images

If you would like to associate your labeled instances to positions on an image, this is the setting for it. Just click on the side of the screen.



right the screen.

This feature can be used to link segments to their physical location on a house or building blueprint, a field of play, or any type of visual representation as you may desire.



Dragging and placing labeled instances to any position on the image/map/etc. will link them to that position. They will be represented as shown below.



Exporting the data can be done with a “heatmap” showing a color gradient representing the count or the duration of segments.

Altering rows and columns can adjust resolution to your needs. You may wish to experiment some with output settings to suit your needs.

