Advance Digital Non-Linear Editing Technology

SONU SHARMA

Assistant Professor, Department of Mass communication & Television-Film Technology NIMS University Jaipur, Rajasthan, India

ABSTRACT

Non Linear Editing technological changes have significantly simplified digital video editing. Digital video editing in its basic form can be completed by subsequent simple events and through the use of hardware and software normally found on personal computer. In order to produce excellent and intelligible audio-videos the editing process is generally directed according to the superior rules called video gramma. Computer system demonstrates promising results on large video groups and is a first step towards increased automation in non-linear video editing. This paper proposes a method to automatically section the raw video resources into valuable sections and useless sections based on the video grammar as a part of the audio video editing support system using the camerawork and cut point information. This paper justifies the steps to follow in digital video editing. It's describes some reasons that made digital video editing simple for some but difficult for others. It's explains the steps complicated in digital video editing and the obtainable technological alternatives in each step. We provide an overview of the use of digital non-linear editing application.

Keywords: *Digital Video, Linear Editing, Non Linear Editing*

Introduction: -

Digital non-linear editing we individuals can follow simple steps to edit digital videos through their basic information of computer operations and application software. Video editing has several unique challenges not found with other media. Digital video is a time-based medium. This stuff makes it difficult for users to browse and skim video. Another experiment for editing video is that it is a dual medium. Audio video tracks must be kept synchronized. But the user must also be able to overlap them when anticipated. Further when a shot is cut from a video for use elsewhere. The user must be able to unravel overlaid audio and video. The next problem is that the syntactic units that users want to edit are shots of video and sentences of audio. But current tools require users to observe video at the separate frame level and audio using a waveform. Simple digital video editing does not require considerable knowledge of these technological replacements. In its place digital video editing can be completed through the following of beginner's step-by-step procedures. This paper explains the scientific replacements and procedures involved in simple digital video editing. The conclusion section advises basic steps in digital video editing and the technical substitutions used in each step. To perform editing processes such as cutting a shot the user must physically pinpoint specific frames. Which may include zooming and many recurrences of fast-forward and rewind operations. When wee visited a video-processing workplace and interviewed professional video editors. We also inspected commercial and research video editing systems.

Linear & Non Linear Editing: -

- **Linear editing** is the name given to traditional tape-based video postproduction. Tape-based editing is *linear* because you cannot jump instantly to any point in videotape. To reach a desired spot from any starting place you must roll through every shot between those two points. In analog editing, you must perform all operations simultaneously. This means, for example, that you cannot add a dissolve later to a

previously edited cut between shots. In almost all postproduction today computer-based digital editing has interchanged the old-style tape-based analog approach because of digital editing's speed, versatility, and output quality. Although you could buy elaborate analog hardware, you can perform simple editing tasks very effectively with just a camcorder and a consumer VCR. This makes it economical for the person who edits only occasionally. Also analog editing is comparatively simple so you can master the basics in small time.

- **Non-linear editing** is the all audio and video information is stored on large capacity hard drives. You manipulate pictures and sound with the computer much like words and paragraphs during word processing. Keep in mind that even the most elaborate digital editing system cannot make the creative decisions foe you. We recover on the original source clip such as by balancing the colors from shot to shot. But the better the original material is the easier and organized the postproduction doings will be. Thoughtful about postproduction as early as the shooting stage facilities your editing responsibilities significantly. Continuously reflect postproduction an extension of the creative process, not a salvage operation.

Analog And Digital Video Concepts: -

This section delivers a brief explanation on concepts that are considered basic when related with digital videos.

- **Analog Video:** An analog video displays images similar to digital but the storage format is different. The video clip in analog videos are not divided into frames such as in digital video files. The video file is collected in one component with no gaps between them. Thus when editing the analog video the editor cannot take the video and break it effortlessly into separate frames. Instead different methods are employed to edit s nonstop unit of video images. Based on the seeming changes between the two formats of video files. It can be said in universal terms that digital videos result in improve quality display while at the same time providing easier video editing capabilities.
- **Digital Video:** Digital video is a combination of multiple digital images saved as a frame. The video that we see on the computer is separated into different frames that are combined into one digital file. The digital video is slow in number of frames per second. The standard for frames in digital videos is about 24 to 30 frames per second. The upper the number of frames per second makes the quality of the video better. A high number of frames per second in a video decline the gaps between one frame and the next thus increasing the quality of the view produced. Editing of digital video is made simpler because of the multiplicity of frames in typical digital video files. During the process of audio video editing the video the editor can break down the video into individual frames and then insert delete and update separate frames as required meeting the wanted result.

Digital Video Editing Steps: -

Digital video editing is not a single step. In its place digital video editing includes capturing the video moving the video to the computer editing it using software editing tools and then redeploying it to other devices. This unit clarifies the steps within the overall process.

Browser Window: -

In the Browser window you are going to see that will help you manage your row material. Row materials have a wide range of types. You can generally import audio video still images graphics animation and sometimes even motion graphics projects into your file browser. You will also be able to create Bins. Which are basically folders that will help you systematize your row material. The most important things you will be able to create however are sequences. Arrangements store your edits and you can have a bunch of them. Basically you edit a bunch of video within a arrangement and then export that sequence to a format of your choosing. You can also create sequences that contain other sequences.

When you are editing a movie and you want to edit scene-by-scene you could make a sequence for each scene. When you are done editing all the scenes you want them to be in one big sequence so you can watch the entire thing at once. In this window you can just put all the individual scene sequences together in one master sequence and you have got your movie.

Viewer Window: -

The viewer window is that you use to preview clips apply edits to those clips internationally create effects apply filters and transitions. Basically it is where you do the persistent work. When you open a clip in the file browser you will see it in the viewer window. You can choose in and out points for that clip that will be internationally practical any time you use that footage. It's means that if you set an in and out point to shorten the length of the video clip. The viewer window is also where you will most likely edit your effects transitions and filter settings. If you are color correcting the color corrector will likely show up in the space designated for the viewer. If you are editing the length of a crossfade transition it will happen here too. This is not always the case with every video editing software but it is the normal location.
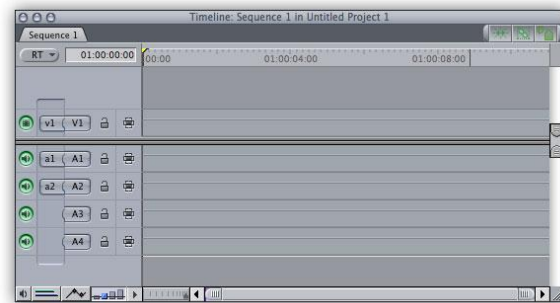
Canvas Window: -

Canvas window also traditionally on the right side. The canvas window is very simple to understand. It looks a lot like the viewer but it is job is simply to display the frame you are presently on in the timeline. It is where you view your edit as it currently stands. It looks like more of a viewer than *the* viewer but what can you do.

The Timeline: -

The Timelineis where you do your editing. You plop clips on the timeline in the order you want them to appear, you can layer them to have multiple streams of video and audio playing back at once, and you can edit things to flow the way you want. In the timeline you'll have access to a few tools, but you'll mainly use an arrow tool and a (razor) blade tool. The arrow is for picking up stuff and moving it around on the timeline. The blade is for making cuts. In Final Cut Pro the arrow can be selected quickly by pressing A. In Premiere you press V instead. To select the blade in Final Cut Pro, you press B. In Premiere, you press C. There are several little tricks, features, and nuances to the timeline that we'll get into as the lessons progress (and you'll find a few in the video included with this lesson), but its basic purpose is to be the area where you create your edit.

Project Setting: -
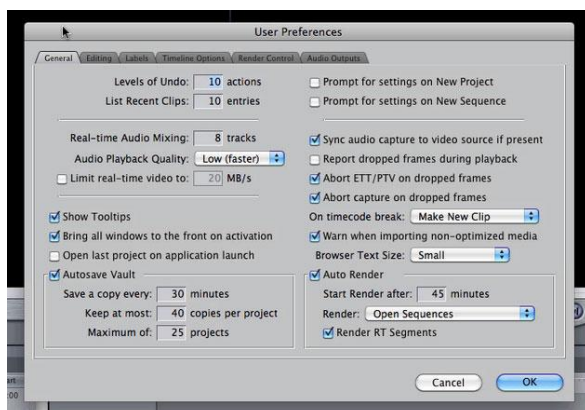
Project setup involves all the same kinds of tasks in most editing software titles, but how you complete that setup tends to vary quite a bit. In final cut you have to setup your system in three different places and it assumes you are always using the same equipment. Adobe premiere pro cc actually handles this much better in my view because you set up all on

a project-by-project basis and can choose where you save the files with each new project. Setting up a project there are a few things you want to know and memorize know the format of your footage. Know the codec you are editing. What is a codec? The word is a combination of the words code and decode and it determines how your footage is compressed. Some codecs are better for editing than others DVCPRO HD is better for editing than H.264 but H.264 is improved for distributing video online. Often times your editing codec will be determined by the codec used for your footage. For example, if you are importing footage from a DV tape you'll probably just edit your footage using the DV codec. Other hand you may prefer to use a lossless codec such as Bit Jazz sheervideoso no quality is lost while you are editing. The resolution of the video you are editing standard definition is generally 720x480 and high definition is generally 1920x1080. If the video is interlaced or progressive you will need to check your camera's manual if you are not sure but here's an explanation of the difference and the frame rate will be 29.97 FPS for American NTSC cameras or 25 FPS for countries using PAL but many cameras shoot at different frame rates so be sure to check what you are using. When you want to make sure you set all of these things when setting up your project.

Importing and Capturing Footage: -

- **Capturing the Video:** A scene such as any events be captured operating a video camera where the actual matter of the event is saved on a storage device. Three different storage devices are generally used with a video camera mini DV 8mm tape and VHS. This Mini DV is the only one that records videos in digital formats. A mini DV can store up to 11 GIG of digital video. The other two devices store the video in analog format, but as noted earlier the analog format becomes cumbersome for future editing. Lately some newer cameras allow the use of a CD or a DVD for video capturing. While editing features are included within some digital camera settings, these editing features are limited. In most cases, the video is transferred into the computer's hard drive for ease of use for better editing.
- **Transferring to the Computer:** Digital video cameras hold the video in a digital file. To take advantage of a computer's processing and editing features, the digital file needs transferred to a computer. One of three transmission media is commonly used for the transfer: FireWire, USB and RCA connectors.
- **FireWire:** The FireWire cable is the fastest of the three that transfers digital videos from digital cameras to computers in digital formats. The FireWire is plugged into both the computer and the digital camera. Software on the computer detects the digital camera connectivity and activates a program that offers an option to transfer the digital video to the computer.
- **USB:** The USB cable is a popular option for transferring digital videos to the computer. Although slower than the FireWire option, it offers a fast media for transferring digital videos and maintaining the digital format for the file. Newer PCs come with multiple USB ports where some of these ports are available at the front panel of the computer.
- **RCA Connectors:** The RCA connectors come with red, yellow and white wires used to transfer the digital file as video and audio signals. A special card is attached to a USB port on the computer where the RCA connectors are attached to the digital camera and the card. The RCA connection is slower in processing and it transforms the digital camera file into analog format. There are generally 2.5 ways to import clip into a video editing project. If your camera uses tapes you will need to use the Log and Capture method. Logging
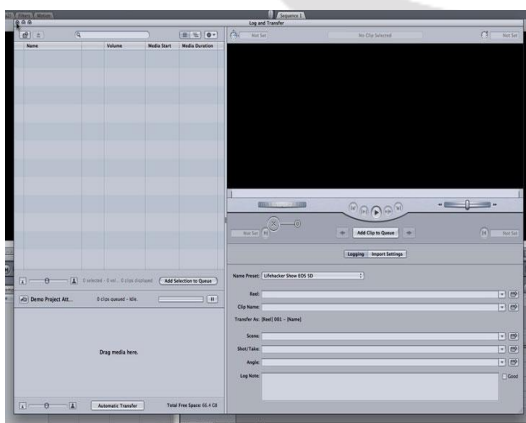
and capturing involves hooking up your camera to your computer playing the tape and logging the in and out points for all clip you want to create. Once you have logged all your clips you tell the editing application to import them and you can watch your camera automatically import everything. If you are using a card-based camera you will want to import footage using a Log and transfer method. In final cut pro 10.2.2 you do this by transporting up a panel similar to the log and capture panel but you will see clips showing up on your card. You can name them and addapplicable metadata add them to a file and then import them. The 0.5th way is just transferring your video without logging it. Some cameras will require that you use log and transfer because the footage needs to be transcoded to additional format before you can edit it. If you

are grabbing footage from a camera that just creates video files such as a canon DSLR. If this is the case you can just import your footage into your file browser and you can start editing right away.

Editing and Adding Transitions: -

Digital Video Editing: After the digital video file is saved on the computer, the file can be an edited using software tool. Although different software packages are available for this purpose, they have common features that make simple editing of digital videos closely similar. Common editing features that are available with both timeline and storyboard views include the following:

- **Cut and paste:** Using the software, users can cut different pieces of the video. The timeline toolbar is used for cutting pieces of the video in time segments. For example, users can cut between 5 minutes and 10 minutes of the video. Users can also cut video frames in the storyboard view. In this view, individual frames of the video are shown where users can cut, copy or move frames to different places in the video file.
- **Transition editing:** These are the editing features that can be applied when transitioning from one frame to another or from one segment of the video to another. The common transitional effects that are usually applied when editing videos include checkerboard effect; circles across, bars, and box out whether diagonal or vertical, dissolve, and fade in/out.

Once you have imported your footage editing is pretty simply. Just drag video and audio onto the timeline window in the order you want it. If you want to add effects you need to shorten your footage a little bit where the transition is going to happen so it has a little additional footage to use for that transition. This is kind of difficult to clarify and much calmer to see so check out the video for a look at how to apply different transitions in both final cut pro 10.2.2 and adobe premiere pro CC.

Titles: -

Apply Titles: Titles can be added to individual frames, to a group of frames, or to a particular time segment of the video. Titles can be added to the video at the beginning of the movie, before selected clips on the storyboard, on the selected clips on the storyboard, and as credits at the end of the movie. Titles are really easy to create in both final cut pro10.2.2 & adobe premiere pro cc. In Final cut pro you go to your Viewer window and look for the little filmstrip icon with an A in it. It should be sitting in the bottom right corner and you can see a demonstration in the video related with this lesson. This will give you a nice drop down menu with lots of neat things you can generate but we are just going to concentrate on titles. While there is a specific section for titles if you select *Boris*and then*title 3D* you will get the titles plugin with the most options. Boris title 3D plugin is not as robust as what you will find in adobe premiere pro cc, but it is pretty capable. You can add various effects to your text and even animate it just like you would your footage. Adobe premiere pro cchandles titles in a slightly different way. Adobe put a lot of believed into what they call the *title designer* and it is really great. They obviously think pretty highly of it because they have dedicated an entire menu to titles. Believe it or not it is called the Title menu. If you create a new title just go to title menu and choose the kind of title you poverty to

create. Set it up how you want in the title creator and then close the window when you are done. You do not need to press OK or hit save because the title creatorjust creates an asset in your file browser that you can drag onto the timeline. We have already looked at how to export your edit in final cut pro 10.2.2 in a couple of ways and we go over those again in the video related with this lesson. But there is one more way we have not looked at sending your video to compressor coding application that originates as part of the final cut studio bundle. You do this by opening the categorization you want to send so it'sobservable in your timeline going to the file menu then send to then choosing compressor. The compressor application will launch and you will see an entry with your sequence in it. Below you will find a list of presets you can drag on to your categorization's entry. That same panel will have a tab with preset destinations for the encoded audiovisual as well and you can drag those on to your sequence's entry. When you have added all the presets you wanted or added any you generated yourself go ahead and click the submit button to submit the batch. Compressor will encode all your audiovisual and alert you when it is completed. When that happens you will be able to find all the video in the destinations you selected.

Key Frames: -

Key frames are the full pictures. You have 30 frames of video and the first 30th frames are key frame. You can think of those frames like photographs all the detail of the video exists in that frame. Frames 2 through 29 however do not have the full photo. Instead frame 2 just contains the changes that have happened since frame 1 because frame 2 is not a key frame. Every six seconds is customary nowadays but the more key frames you have the calmer. It is to scrub finished the video. The disadvantage is that more key frames tend to result in lower-quality video. Because it takings a lot of data to store a key frame and if you only have 1000 kilobits every second. The more frames in that additional that use a full frame means you has less room to store the variations between those frames. If you use key frames too frequently it will degrade the quality of those variations and the excellence of those key frames to try and stick to the normal bit rate. It may seem like many key frames is better.

Color Correction Process: -
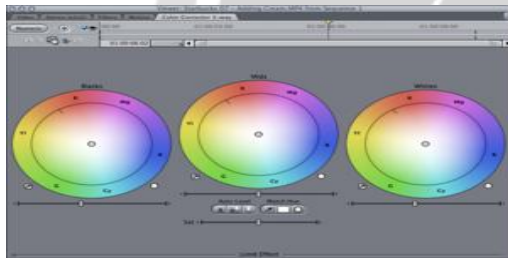
In color correction process the basic principal you want to memorize is that your goal is to use color to either white balance your footage. White balancing is very simple. Open up your color corrector and look at your footage. For example if the background seems too cold you will notice too much blue. If those blue areas are really dark they are in the shadow. If they have in the middle they are in the midtones. If they are bright they are in the highlights. Somewhere they are there is a color wheel in your 3-way color corrector that represents each tone. Each wheel should have a dot in the mid of it that you can move anyplace on the color wheel. If you want to get rid of red in the shadows just locate red on the color wheel and start moving the dot to the other side. You will see the footage start to warm up. Stop previously it gets unnatural warm unless that is your goal. If you want to communicate a feeling of warmth or heat pick warm colors and usage the color corrector to add more of them in the applicable tones. While professional color adjustment is a nuanced art and is very difficult basic color correction is attractive simple.

Motion Effects: -
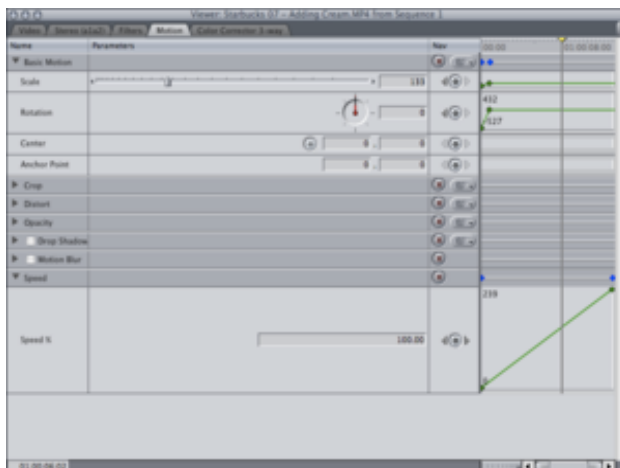
Final cut pro 10.2.2 or adobe premiere pro cc and most pro editing software come with basic motion effects you can apply to your clips. These are things like cropping, scaling, rotating, distorting, and more. Both Premiere pro and final cut pro 10.2.2 have these settings in the viewer. To access them, just load up a clip you want to edit and click correct tab. In final cut pro it is called Motion. In Premiere it is called Effects Settings. Once there you will see your options and a small timeline to the right of them. From there you can apply any adjustments you want but one well-ordered thing you can do is also add key frames. Adding key

frames will let you animate the video basic ways such as make it get bigger smaller and spin around. You cannot do anything really fancy here but it is useful for many simple operations you will need to perform when editing.
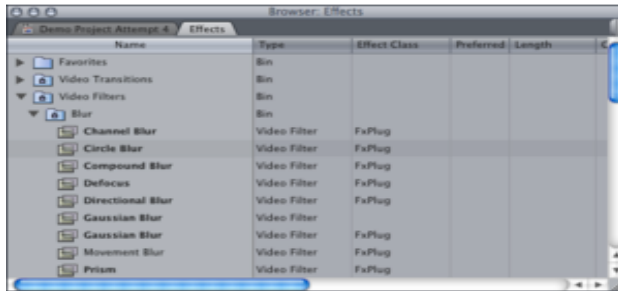
Filter & Transition Effects: -

Filter effects allow you to manipulate your video in various ways and transition effects allow you to transition your video in different ways. The key difference is that filters apply to an entire video clip and a transition is a means of enjoyably transitioning between two different clips. Filters will let you do things like interlaced video crop the frame to a tradition size and shape so you can possibly combine multiple video clips into one and alter the image in different ways. Attractive every video editing application comes with a huge array of filters and most of them are either useless. The best thing you can do is play around with all of them to get aimproved grasp on what they do. Transitions work in similar ways or cross dissolve is pretty much the only one you are going to use. To see a few demonstrations check out the video that's associated with this lesson.

Export: -

Digital video editing software packages come with features that allow for saving the digital video to other media such as a CD or a DVD. Some video editing software includes features that allow for transferring the final, edited video back to a digital camera or transferring the edited video onto a VHS tape. For the VHS tape transfer, the analog transfer media using RCA connectors are used to transfer the video. Users who have a need to copy digital videos to a DVD must have a computer equipped with a DVD writer. DVD offers a high storage capacity (up to 9 gig) where users can store more than 4 hours video on the DVD. The quality of the DVD video is also higher than other media. In Final Cut Pro and Premiere Pro CC you go to File > Export to see your options. In Final Cut Pro you choose either Quicktime Movie. The Quicktime Movie option will let you export a source file that's basically the same as your edit. This is great if you want to use additional application to compress your video into various formats. If you want to make a beaten version directly from final cut pro the Using Quicktime Conversion is probable. This will let you encode the file into any format maintained by Quicktime. In adobe premiere pro cc you only have one main selection media. Choose that and you will get an excellent export window that will even let you preview all your exporting options. Adobe premiere's media export is like final cut pro's options combined into one window that gives you even more options. Select the format you want and export your file. If you want to export your file to multiple formats, you can line them up as well. It's beautiful great. That is a basic overview of your exporting options. We're dedicating an entire lesson to exporting your edit later on so we will take a deep dive then.

Conclusion: -

In this paper digital audio video editing has become calmer outstanding to developments in hardware and software technology of computers while justification the processing steps for clients. Though improvements have been made digital audio video editing occasionally leftovers unclear and anxious to users. These problems can be associated to the many high-tech terms that are used in digital audio video editing. A lack of considerate on the steps to take to capture, transfer, and edit digital video files. But once the processing steps are basic and users understand the technical terms. Then the goal to edit digital videos can be realized by different computer users who have the advance knowledge of the technology.

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