INTRODUCTION

Welcome to EditStudio, the professional video editing program for everyone. With EditStudio we aim to provide you with the tools to make creating professional quality movies easily. Enjoy your new role as a movie producer!

<div align="right">- The Pure Motion team</div>

This Guide

This guide acts as an introduction to EditStudio and the other programs in the package. We'll take a look at what you can use EditStudio for as well as some of the basic concepts behind editing video with the program.

A large part of this guide is dedicated to a tutorial which will create our own mountain biking movie. We will have a close look at all the steps required right through to building the final movie. You can follow the steps of the tutorial by using the files provided on the EditStudio CD, giving you immediate hands-on experience with EditStudio.

This guide is designed to let you understand and get using EditStudio as soon as possible – it is not a replacement for the comprehensive user guide which is available through the online help system.

Installing EditStudio

Insert the CD into your drive and a welcome window will popup up automatically with a number of options.

If you do not see this window, it's probably because autorun is turned off on your CD drive and you will have to start the installer manually. To do this, open the contents of the CD in an Explorer window and double-click on Setup.exe to run the welcome screen.
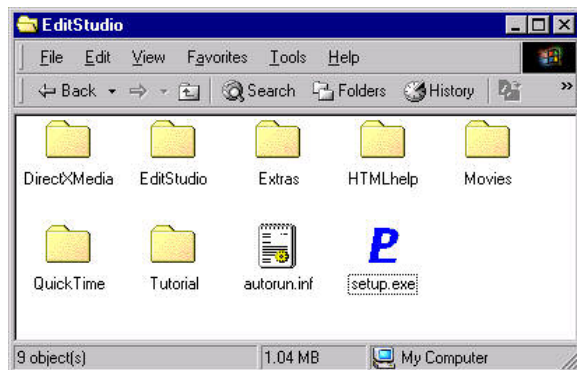
You are presented with the following options:

Install EditStudio

This option will install EditStudio, Capture and all of the programs' online help. After installation, these items can be accessed from the Pure Motion folder in the Programs group of the Start Menu.

All of the items on the CD use Microsoft's new Windows Installer 2000 – clicking on any install option will first check to see if the Windows Installer is present and install it if necessary. This installation will happen automatically, after which the EditStudio installation will continue.
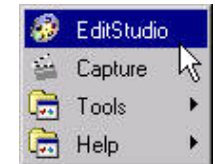
Install QuickTime

If you intend to work with QuickTime movies in EditStudio, you will need to install QuickTime using this option. QuickTime (.mov) files are suitable for placing on web pages. Ensure that you perform a full install of QuickTime - this will install the necessary drivers for creating movies as well as playing them.

Install Tutorial

The files required for the tutorial contained in this guide are included on the CD and should be installed to your hard disk before you start the tutorial. The tutorial files require a total of around 60MB of hard disk space.

Explore Movies

The CD contains a number of example movies created with EditStudio. Select this option to open the folder on the CD which contains the movies – double-click on any movie to see it play.

Close

Click the Close button to close the welcome screen.

What is EditStudio?

EditStudio is a video editing program for the PC. The program allows you to take a number of video clips and combine them to build a movie file. This movie can then be recorded to a camcorder, played back on the PC using a program like Microsoft's Media Player, Emailed to a friend or placed on a web site for anyone to view.

Using Pure Motion Capture (included as part of the installation), video and audio can be captured from a variety of capture cards including TV cards, dedicated capture cards and Firewire cards. If you do not have a capture card yet, don't worry as there are example movie clips for you to use included on the CD.

What You Need

Basic Elements

To perform video editing on your PC, you will need these basic elements:

- A suitable specification PC
- A capture card
- A video source (eg. camcorder)
- EditStudio

PC Specification

Shown below are EditStudio's minimum and typical machine requirements.

Minimum PC requirements:

- 200 MHz processor (350 MHz required for DV editing)
- Sound card
- Windows 95, 98, ME, NT4 or 2000
- 4 GB hard drive space
- Internet Explorer 4
- 32 MB of RAM
- 800 x 600 screen resolution
- 15/16/24/32 bit screen depth (32,000 to 16 million colours)

A more typical configuration would be as above, with the following changes:

- 400MHz processor
- 128 MB of RAM
- 10 GB hard drive space
- 1024 x 768 screen resolution
- 24 bit screen depth

Obviously, the faster your processor, more memory and larger your screen then the more fun EditStudio is to use!

A Word About Capture Cards

There are two types of capture card available: Firewire (also called DV, IEEE1394 or i-Link) and analogue. Some capture cards combine both DV and analogue abilities. We'll take a close look at capture cards later (page 43).

CONCEPTS

Before we dive into editing and arranging a movie with EditStudio, we will just take a moment to look at a few of the important concepts behind editing video with EditStudio. For the impatient, it's not essential to read this section, however it will make using EditStudio so much easier.

Media Files

All movies are built from original *footage*. Usually this footage is shot by a camcorder, but it can also include audio in the form of music and still images in the form of photographs. In order for EditStudio to make sense of this original footage, it must be stored on the computer in the form a file. We refer to these files as *media files*, as they can represent many different types of media.

So, how do we get these media files onto the computer?

Video Capture

The primary tool for getting video footage onto the computer is to capture it – usually from your camcorder. *Video capture* is the

process of copying the video footage from your camcorder into a media file on your computer. Video capture requires a video capture program (like Pure Motion's Capture application) and a hardware capture card to allow you to connect your camcorder to your computer.

Capturing still photographs can be done using a digital camera or scanner and audio can be captured using a sound card.

Layers

EditStudio arranges its media files on *layers* – you can have as many layers as you want in a movie. Layers allow you to arrange media files so that they are used at the correct time in the movie. Additionally, layers are ordered so that a media file above another in the layers is given priority (eg. is displayed in the movie). This ordering of layers gives you incredible flexibility in arranging your projects, as we will see later.

Items

When you place a media file on a layer, it is displayed as an *item*. Items allow you to reuse a media file many times, by creating lots of items which all refer to the same media file. Because items only require a small amount of memory and media files require a large amount of hard disk space, it is better to duplicate items rather than media files.

Time And Frames

EditStudio allows you to edit your movie in *time*. This might sound a little odd or obvious, but some video editor packages only allow you to edit in *frames*. Editing in time means that you place items at any time (to the nearest $1/1000^{th}$ of a second) and EditStudio takes care of everything. Frame based video editors force you to place all items to the nearest frame of your output movie, but this can cause problems if you change the frame rate later.

Audio And Video

Audio and video items can be freely mixed on EditStudio's layers. Placing an audio item above a video item will not affect the movie picture in any way. Similarly, any number of video items placed around an audio item will not affect the movie's sound. You are

free to mix and arrange audio and video items as you wish. There is no such thing as an audio layer or video layer like there are with other video editing programs.

Empty layers (layers without any items) are invisible to both video and audio.

Transitions, Effects And Filters

If you want to move from one scene to another in a movie, you use a *transition*. Transitions can be either audio or video and there are a wide range supplied with EditStudio. A simple *cut* transition (quickly changing from one scene to the next) can be achieved by simply placing two items next to each other on a layer.

In order to change the video or audio, you apply *effects* or *filters* respectively. A video effect changes the appearance of the underlying video items. An audio filter changes the sound of the underlying audio items. You always place effects and filters on a layer above the items you wish to change.

EditStudio's Interface

EditStudio has a standard Windows interface, making it familiar to use.

Toolbars

Preview layer

Layer bar

Preview

Layers

Tabbed lists
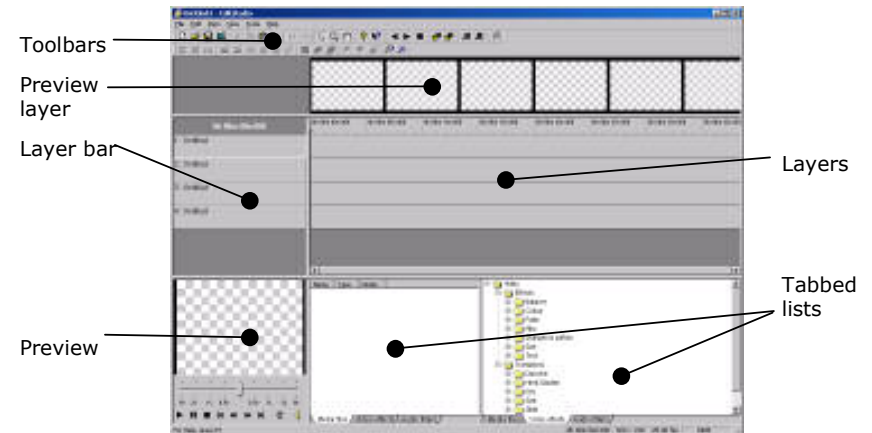
Toolbars

The main window contains toolbars and the program's menus at the top. The toolbars provide instant access to commonly used operations within EditStudio – hover over a toolbar button with your mouse pointer and you will see a tooltip describing the purpose of the toolbar button.

Preview Layer

At the top of the main work area is the preview layer. This preview shows how the final video output changes with time. The preview layer can be resized by clicking on the divider between the preview layer and the layers area.

Layers

This is where the video project is built. EditStudio allows you to place items on the layers which can contain audio, video and bitmaps as well as video effects and audio filters. By layering video and audio on top of each other, complex movies can be built easily and simply.

Layer Bar

The layer bar shows the currently selected layer as well as each of the layers' names and notes. Layers can be resized by clicking and dragging between the layers. The layer bar itself can be resized by clicking on the divider between the layer bar and the layers.

Preview

EditStudio provides an instant preview for all operations. The preview can play back the video in real-time (and at the correct frame rate if your PC is fast enough), allowing you to immediately inspect your movie as you create it. The preview has controls similar to a video recorder, as well as controls to change the playback speed and view specific layers.

Tabbed Lists

EditStudio has lists for media files, video effects and audio filters. These lists are shown at the bottom of the EditStudio window and are accessed by clicking on the appropriate tab. Two tabbed lists

are provided, so that you can arrange the lists as you wish. The lists allow dragging of media files, video effects and audio filters to the layers as well as providing demos (where appropriate).

MAKING A MOVIE

The Steps To Making A Movie

The procedure for making a movie is very similar no matter what type of movie you are going to create. The basic steps are:

1. Plan your movie

2. Shoot the footage with your camcorder

3. Capture this footage onto your computer's hard disk

4. Edit the footage into a movie

5. Build the movie, ready for viewing

We'll take a closer look at these steps.

Planning Your Movie

You probably don't want to hear this, but the key to successful movie making is in the preparation. The good news is that this planning stage need only take a few minutes and can add significant quality to the final results.

The popular method of planning a movie is to *storyboard* it. This simply means that you think of an idea for the movie and sketch out the key scenes on a piece of paper. When storyboarding, try not to think of how you will achieve a particular effect but of how you would ideally like to present the movie's story to the viewer. Worry about the details of how you are going to do this later.

At this stage you should ask yourself:

• Does the movie sequence make sense?

• Are all the main details included?

• Does the movie have too many / too few scenes for the required length?

If you are unsure about any of these questions, ask your family and colleagues for advice and suggestions – the storyboard should be clear enough for anyone to understand.

Taking The Raw Footage

The next step of making the movie is to go out and shoot the footage. EditStudio can't really help you here I'm afraid! As you now have the ability to edit your movies, you can approach the process of taking camcorder footage differently than you did before. Remember the following when taking footage:

• As you will be editing the footage later, you do not have to worry about making sure that all the footage is kept tidy on the original tapes. Don't worry if one scene doesn't follow naturally into the next, you can always edit this later.

• Don't use any special effects on your camcorder that you could add later using EditStudio. Titling and fades added by your camcorder cannot be removed or changed later.

• Be creative with your shots. Experiment with different angles and camera positions. If they don't work, you don't have to use them, but if they do work they can really add variety to a movie.

There are many books written on shooting footage with a camcorder and this guide cannot possibly cover this. See the Resource section (page 47) for more information on some suitable titles.

Capturing The Footage To The Computer

Before you can start editing your movie, you will have a large amount of raw video footage taken with a camcorder. Somehow, you have to get this footage into a format that your computer can understand and edit. This process is called *video capture*.

In order to capture the video you will need a video capture card and some video capture software. This process is covered in more detail on page 42.

Editing The Movie

This is the fun part! Using a video editing program, you put together the video footage taken with your camcorder into an interesting movie. It is at this stage that you put the transitions between scenes as well as add titles and other video effects.

The challenge of the editing process is to match the storyboard as closely as possible with the footage you've taken. There is also an opportunity at the editing stage to improve or modify the storyboard to produce a better movie.

Building The Movie

Once your movie has been edited you will want to output a movie in a form that people can watch. Building your movie creates a file that can be burnt to a CD, Emailed, put on a web page or sent to a camcorder. You may wish to create several versions of a movie for different applications (eg. a web movie and a CD version).

Now we know the basic procedure for creating a movie, you probably want to get straight in there with EditStudio and make a start. You can try the editing and building movie steps by following the tutorial in the next section.

Tutorial

For our tutorial example "Making A Splash", we intend to build a short movie (around 15 seconds long) that must be quick and interesting. We're choosing to use mountain biking as our subject as it's fast moving and brightly coloured. The end of the movie will end with a bike splashing through some water.

We recommend that you install the tutorial from the EditStudio CD before you continue. See page 3 for details on how to do this.

In order to evolve this idea into a storyboard, we've put together the following idea:
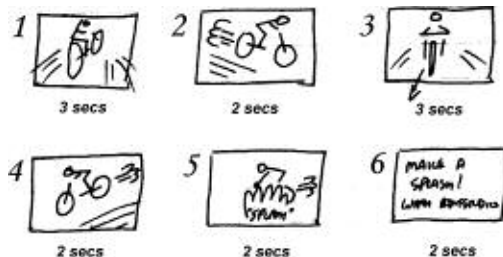
This represents the following possible scenes in the movie:

1. Following a bike fast along a path

2. Bike going down hill, left to right
3. Bike heading towards viewer
4. Bike going down hill, right to left
5. Splashing through water
6. End text "Make A Splash with EditStudio"

The first thing you'll notice about our storyboard is that a career in graphic design is unlikely. Then, you'll notice that the storyboard only shows the essentials of our movie but gives enough detail to allow us to visualise how the movie will turn out. Approximate running times for each of the scenes are shown below the storyboard frames.

For our tutorial movie, the wide range of camera angles, large number of scenes for the short running time and fast moving mountain bikes should ensure that the final movie remains interesting and "punchy".

If you were doing this movie for real, you would now go out with your camcorder and shoot some suitable footage. To save the trouble of going outside and doing this (besides, the weather doesn't look too good today), we've already taken some footage and captured it for you. You will find these captured clips in your tutorial folder.

Although the tutorial can be followed step by step, you can just read through the section to get a better understanding of the concepts of working with EditStudio. Each step of the movie is available on the CD if you just wish to load in the project at key stages.

You can now dive straight into the editing process...

Starting Editing With EditStudio

Creating A New Project

Start EditStudio by selecting it from the Windows Start menu – it is found under the Pure Motion program group. Once EditStudio has started and you have closed the welcome window, you will be presented with the main interface.
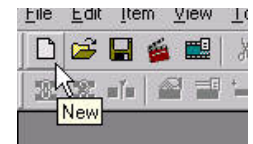
To make it easier to build the tutorial project, we will set the movie up to use one of the default project styles that is provided with EditStudio. Click on the New Project button in the toolbar to open the Project Presets dialog.
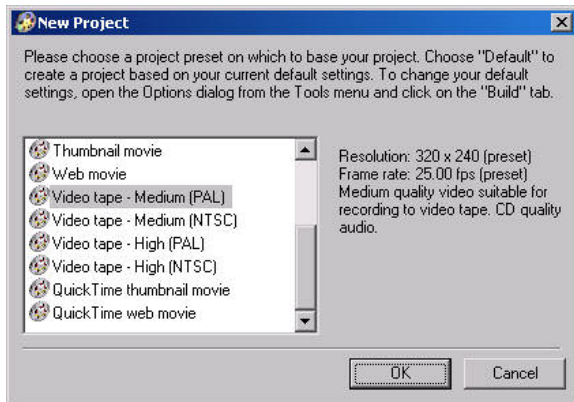
Choose *Video tape – Medium (PAL)* from the list. Don't worry if you're not in a country that uses the PAL TV standard, this is only for the tutorial and you can choose another preset for your own projects. Choosing the preset and clicking OK will set up the project to use a medium resolution frame (320 x 240 pixels) at a frame rate of 25 frames per second. This will produce a movie of similar quality to VHS video.

We now have a blank project, we are ready to start building our movie.

Organising The Layers

EditStudio's main tool for building movies are *layers*. Layers are areas in the project where you can place media files (video, audio or bitmap files) and control where in the project they will be used. Layers are powerful because you can use them to add video effects and transitions above media files to create more complex movies. There are no limits to the number of layers an EditStudio project can have, so an EditStudio project can have as many video effects and transitions as you want and be as complex as you wish!

For the tutorial movie, we'll be using 5 layers. Our project at the moment contains 4 default layers, so we'll have to add another layer. Do this by right-clicking (use the right button on your mouse) anywhere over EditStudio's layer bar to open a popup menu. Select Insert / Layer from the menu.

We now have 5 layers, named "1: Untitled" through to "5: Untitled".

In order to make the layers easier to recognise, we'll give them sensible names which will reflect the uses we'll be using them for during the project.

To rename a layer, right-click on the top layer in the layer bar. This will open the popup menu again. This time select Properties and the layer properties dialog will open. Change the name of the layer to "Transitions" and click OK to close the dialog box. You will notice that the top layer is now called "1: Transitions" – the "1" simply refers to its order, with the layers being numbered sequentially from the top.
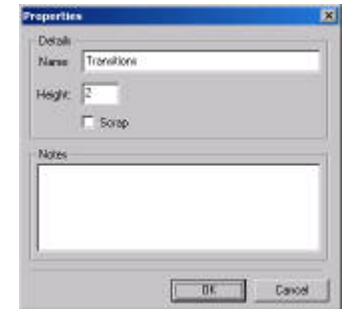
Repeat the naming process with the remaining layers in the layer bar, calling them "Video A", "Audio A", "Video B" and "Audio B" for layers 2 to 5 respectively.

Although EditStudio layers can contain any type of item, by naming the layers as above we will be keeping our video and audio items separated to keep the project neat and tidy. After working with EditStudio for some time, it's likely that you will develop your own style for arranging projects that you feel comfortable with.

Adding Media Files

A project which only contains layers is not very interesting – it needs some media files to add content. Media files can be video, audio or still bitmap image files and they are added to EditStudio's layers where they can be arranged to play back in any order. Transitions and video effects can
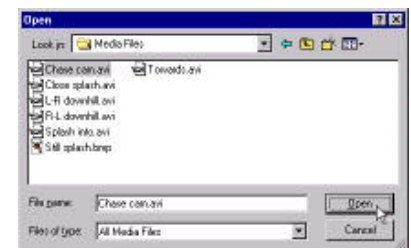
also be added if required.

Looking at our original storyboard, our tutorial movie will start with a scene where the camera follows a moving bike. We need to load the video footage of this onto an EditStudio layer. To do this, right-click over the Video A layer in the layer bar and select Insert / Media file to open a file dialog. Use the dialog to select the file *Chase cam.avi* from the tutorial directory (by default in C:\Program Files\Pure Motion\Tutorial) and click Open.

The video file will be loaded onto the Video A layer and the video clip's audio will be loaded onto the layer below – Audio A. EditStudio will now look like:
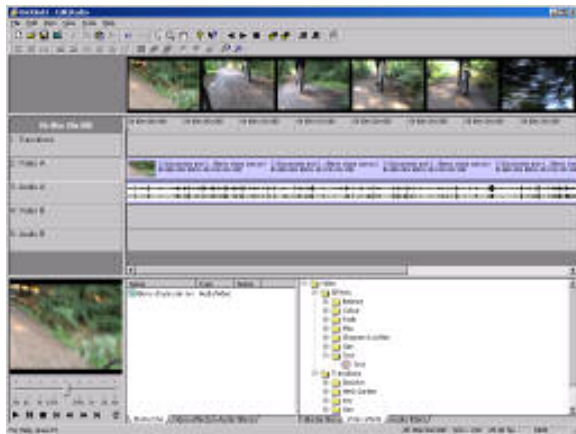
Notice how the preview layer at the top of the window shows frames from the movie as a whole and the preview at the bottom left of the window is showing the first frame of the movie.

Previewing The Movie

One the powerful features of EditStudio is the ability to preview the movie at any time. The preview is shown in the preview at the bottom left of the main window.

To start the preview playing, click on the Play button ▶ - the movie should run for just over 1

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minute (don't worry if the movie looks blurred – it was shot like this!). We will return to the preview later in the section.

Trimming A Media File

Looking at our storyboard, it shows that we are looking for the initial scene of following a bike to last about 3 seconds and yet the movie we just previewed was closer to a minute long. We obviously have to cut this video clip down to be a more manageable size.

EditStudio allows you to start each item some duration into the media file (called the *mark in* time) and end the item some time before the end of the media file (called the *mark out* time). Mark in and mark out times are the way in which you control how much of your source video clips you show to the viewer.

We are now going to choose a very short section of the item to use as part of our first scene. Right-click on either the video or audio item in the layers to open a popup menu. Choose Mark in / out from the menu.

Notice how the popup menu was different from the one that we used with the layers. Popup menus are *context sensitive*, which means that they show information that is relevant to the item that you've clicked on. After selecting Mark in / out, the Mark in / out dialog will open:
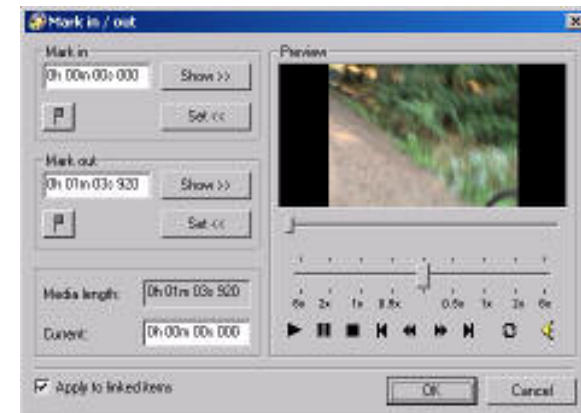
The dialog shows several pieces of information, the main ones being:

Mark in time

How far into the media file the item should start. The mark in time will correspond to the time in the media file of the first frame that will be shown in the item.

Mark out time

How far into the media file that the item should end. The mark out time will correspond to the time in the media file of the last frame that will be shown in the item. The mark out time must be after the mark in time.

To change the mark in or out times, you can type new times into the time controls. Alternatively, you can use the slider below the preview to move back and forth through the media file. When you are happy with the frame you are viewing, click the "Set<<" button next to either the mark in or mark out time to set the time.

In the tutorial movie, set the mark in time of the item to be 3s770 (type in "3s770", without the quotes). This sets the mark in time to be 3 seconds and 770 milliseconds (3.77 seconds) into the media file. Similarly, set the mark out time to be 5s650, this time entering the time as "5.65". EditStudio allows a wide range of ways of entering times into time controls and full details are found in the online help.

Click OK to apply your changes. You will now notice that the item has been reduced in size considerably. The items on the layers now only show a small part of the media file – the file is still there, although now only a small part of it is being used.

Linked Items

When you load a media file onto a layer in EditStudio, the file may contain both video and audio elements. If the media file contains both, two individual items are created – one containing the video, one the audio. These two items are then linked*, to ensure that they move around together and do not get separated easily. It's quite likely that you will want to keep the audio with the video.*

When you changed the mark in and out times above, the option in the dialog to "Apply to linked items" was checked to ensure that

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the mark in and out times of both the video and audio items were changed together. If you want to separate the video and audio items and change them individually, you may break the link using the option from the item popup menu.
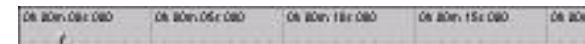
The Time Cursor

If you preview the movie now by pressing the Play button ▶ as before, you will see that the movie plays for only about 2 seconds. You will also notice that there is a vertical line which moves from left to right in the layers as the movie is playing – you may have noticed this line before. This line is called the time cursor*.*

In the same way as with a word processor you have a cursor which shows where you are about to enter text, the time cursor is used in EditStudio to perform various actions as well as show the location of the frame for the preview. Items can be moved to, inserted or broken at the time cursor and you will learn that it is a very powerful tool within EditStudio.

You can move the time cursor by clicking in the time bar above the layers.

You can use the up and down cursors to move the time cursor to the next item start or end. Experiment with moving the time cursor and seeing the effect on the preview. When you have finished, press Home on your keyboard to move the time cursor back to the start of the movie.

Extending Scene One

Our storyboard shows that scene one should be about 3 seconds long, but so far the scene is only about half this length. We are going to add 2 more clips to the scene now and choose two more camera angles to add to the scene.

Insert another copy of *Chase cam.avi* onto Video A layer, using the method described above. EditStudio will attempt to insert the items at the time cursor, but as this is at the start of the movie which is occupied by our first clip, EditStudio will insert the movie after these clips. When the new items have been inserted, right-click on the items and change their mark in and out times to 48s197 and 49s167 respectively using the same method as before.

Now insert a third copy of *Chase cam.avi* onto Video A layer and set its mark in and out times to 52s483 and 55s170 respectively. You should now have a project which looks like the items shown below.


This project is found in the tutorial folder as *Step1.eds*

Improving Scene One

Play the movie in the preview. What do you think? A bit rough, but not bad for a start? We're going to polish the scene up a little and to do that we'll need to edit a couple of the items. You might find that the items are too small at the moment, so you can zoom in at any time by selecting the zoom tool in the toolbar and clicking on the layers to magnify them. If you zoom too much, right-click to zoom back out. When you are happy with the zoom level, reselect the pointer tool before you continue.

The first change we're going to make is to the middle video clip of the close up of the bike's rear wheel. When we preview the movie, it's difficult to spot the change between the end of this clip and the start of the last clip. One easy way of emphasizing this difference is to mirror the second clip from left to right, so that the camera angle changes by a large amount.

Do this in EditStudio by right-clicking over the middle video
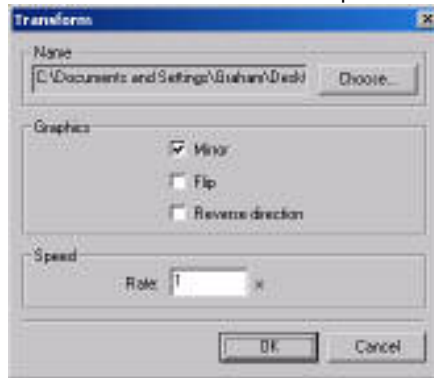
clip on the Video A layer and selecting Transform from the popup menu. This opens the transform dialog.

This dialog allows you to change various aspects of the clip, but we will just be selecting "Mirror" before clicking OK to close the dialog. Preview the movie now and we see that the middle video clip is mirrored which emphasizes the change of camera angle. (Hawk-eyed cyclists will now notice that the chain and gears are now on the wrong side of the wheel. Television and cinema are full of tricks like this, we just have to hope that there aren't many hawk-eyed cyclists in the audience!).

To further emphasize the change of camera angle, we can change the volume of the audio on the middle video clip. To easily change the volume of an audio item, we can drop an audio filter onto the audio item.

First show the list of audio filters by clicking on the *Audio filters* tab at the bottom of the main window (the tab under either list will work fine).


Now open the Volume folder to show the list of audio volume filters. Drag the "Volume" filter from the list over the top of the middle audio item; the item will turn a light pink colour to show that you can drop over it. Drop the volume filter over the item.
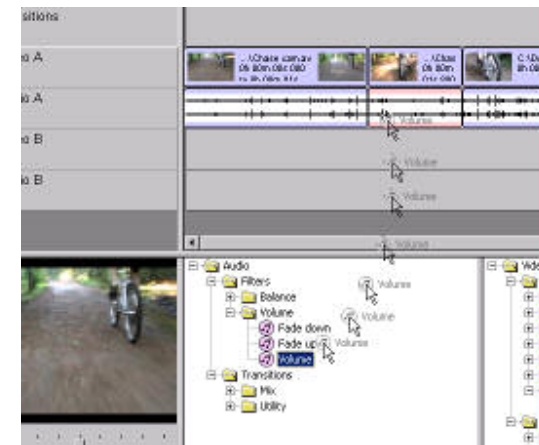
Just dropping the filter over the audio item won't actually change the item's audio volume yet – we have to set the amount that the filter affects the audio. Right-click over the audio item and select Toppings from the popup menu. This will open the toppings dialog which shows that there is one audio topping applied to the audio item which sets the volume to 100%.
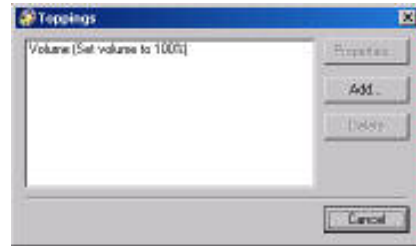
Select this topping from the list and click on the Properties button in the dialog to open the audio volume filter properties dialog.
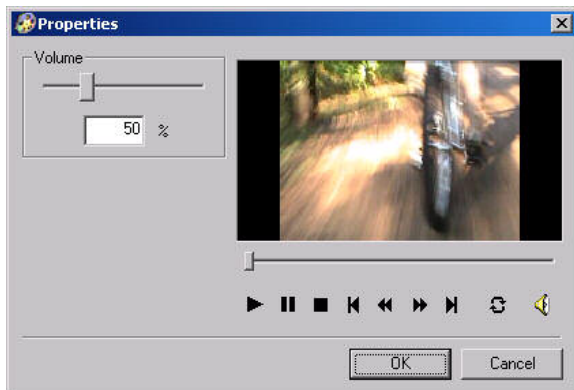
Change the audio volume to 50% and click OK to close the dialog. Click Close on the toppings dialog to apply the changes. Now preview the movie. Not only will the middle video clip be mirrored, the audio will drop in volume to emphasize the change. At the end of the clip, the last clip will return to the original audio volume.

This project is found in the tutorial folder as *Step2.eds*

Toppings

So what was this topping that we just applied? Toppings are the easiest method of applying audio filters or video effects to media files. Simply drag an audio filter or video effect from the lists at the bottom of the main window onto a layer item to apply the topping. Some toppings don't require any settings (for example, the video

negative effect), however most will require some form of user settings. Opening the item's toppings dialog will allow you to change the properties of the filter or effect.

Note that you can only apply simple filters and effects as toppings – transitions must be applied as separate layer items and we'll learn how to do this soon.

Tooltips

Any time you wish to investigate an item further, you can just hover your mouse pointer over it to display a tooltip. In the tooltip below we see the name of the media file of the item as well as the start and end times of the item.
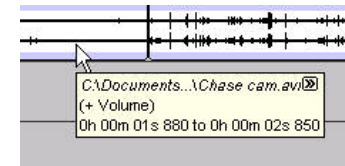
Any toppings applied to the item are shown inside parentheses – this item has a Volume topping applied to it. Finally, we see that the tooltip has a "more" icon , allowing us to click on the tooltip to show more information.

In this case, clicking on the tooltip shows a preview of the item repeatedly playing. This is ideal for quickly previewing individual items without having to use the main preview window.

Clicking on the preview starts and stops the action and a slider is provided to allow you to move back and forth through the item. To close the tooltip, simply move your mouse cursor away from the tooltip.

Scene Two – Bike L-R Downhill

Now we're happy with the first scene, we can move on to scene 2. Consulting our storyboard, this shows that the next scene shows a bike going downhill, from left to right. This scene is captured in the file *L-R downhill.avi*. Before we add the media file to the project, lets take a quick think about how we are going to lead the viewer on to this next scene.

In scene 1, we changed camera angles quickly with sharp, simple, cuts between each camera angle. Now we are changing location and the content of the scene, we might now want to use a different transition between the first scene and the second. A popular type of transition is the *dissolve*, which fades from one scene to the next over a short period (typically less than a second). This will look something like:

We notice that with the dissolve transition, both scenes are present at the same time as one is slowly faded out and the new scene is faded in. Lets see how to do this in EditStudio.

We'll use the time cursor to place the new video clip, *L-R downhill.avi*, half a second before the end of the last clip of scene 1. Do this by pressing End on your keyboard – this moves the time cursor to the end of the movie.

Now move the time cursor back half a second by right clicking on the time bar to open the popup menu and selecting Go to...
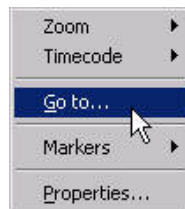
This opens the Go to time dialog which allows you to enter a new time for the time cursor. The dialog opens with the current position of the time cursor.

We can either manually work out what the new time cursor's position should be by subtracting half a second from the current time (quite easy to do in this case), or we can let the time control do the work for us.
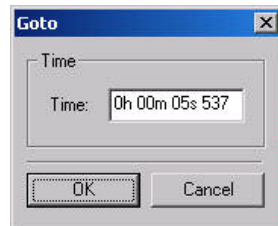
Enter "-0.5s" into the time control and click OK. This will subtract half a second from the current time and close the dialog. The time cursor will move back half a second from its current position. Similarly, you may also enter times prefixed with a plus sign "+" to add to times in time controls.

Now, insert the *L-R downhill.avi* to the Video B layer using the methods described previously. Change the mark in and out times of the new items to 1s200 and 4s250 respectively. Your final project should look like the figure below.
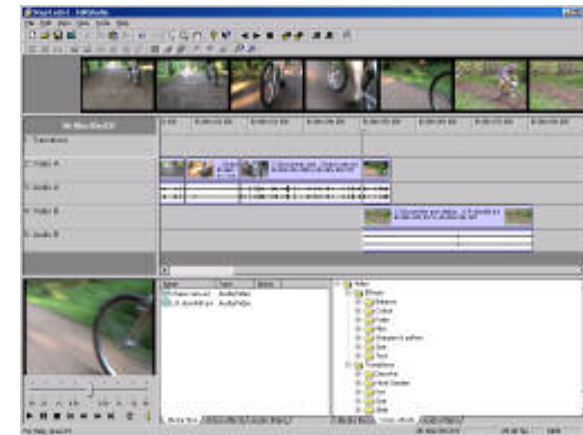
Press Play in the preview to view the movie. The movie will play past scene 1 and into scene 2, however the transition between the two scenes will still be very sharp. This is because the video clip on the upper layer (Video A) takes priority over the video on the lower layer (Video B). Video A will continue to draw until it ends, after which Video B will be shown.

To add a dissolve transition, we need to add a transition to a layer above both of these layers – the Transitions layer.

Adding A Transition

To add a transition, we use drag and drop in a similar way to adding the audio topping previously. Select the Video effects tab in the lists at the bottom of the window.

Find the Dissolve transition (in the Transitions / Dissolve folder of the list) and drag it from the list to the Transitions layer above the overlap of the scene 1 and scene 2 video. The result should look like the figure below:
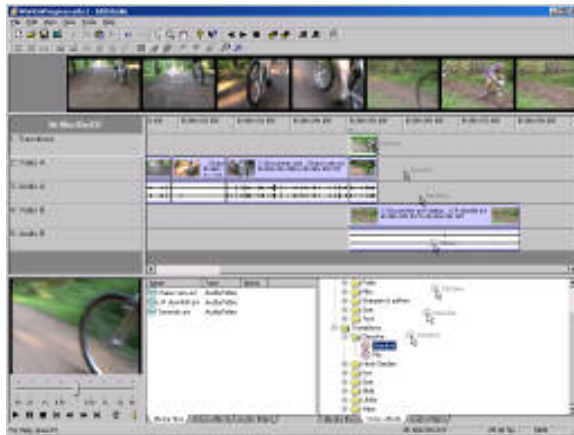
Snapping

To help you position items in EditStudio, the program has a number of snapping features which attempt to snap the movement of items to nearby objects. You will have noticed that when you dragged the dissolve transition on the top layer, the item's start and end points snapped to the edges of the nearby items. This should have enabled you to accurately place the transition to start at the same time as scene 2 and end at the same time as scene 1.

If you haven't managed to place the transition correctly, you can always use Undo on the toolbar and try again.

Play the movie again. This time, rather than there being a sharp transition from scene 1 to scene 2, the scenes should dissolve smoothly into each other. To take a closer look at this, move the time cursor manually around the time of the transition to see how the dissolve works.

But how does EditStudio know that we wanted to dissolve from scene 1 into scene 2 and not the other way around? The secret here is in the ability for all EditStudio transitions to automatically configure themselves. When you dragged the transition onto the top layer, the snapping enabled the transition to exactly match the start and end times of scenes 2 and 1 respectively. The transition could then make an intelligent guess as to which scene it was expected to dissolve from and which scene to go to.

We will now check that the transition has set itself up correctly by looking at its properties. Right-click over the transition on the top layer to open a popup menu and select Properties.

The properties dialog will then open showing the layers that the transition uses to go from and to – in our case, the transition goes from Video A to Video B.

The properties dialog also shows a preview, which allows you to play the transition.
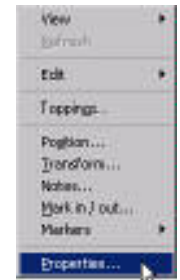
This project is found in the tutorial folder as *Step3.eds*

Scene Three – Bike Towards Viewer

Now we've learnt how to do transitions and use layers, we have all the tools we need to produce a movie. Looking at our storyboard, we now need to add the scene where the bike comes towards us. Again, we'll use a transition to change from scene 2 to 3, however this time we'll use a slide transition rather than a dissolve. It's not usually a good idea to mix lots of transition styles in a movie, but

just for you we'll make an exception. It will also give us the opportunity to look at a transition type with more options.

Using the same technique as before, move the time cursor to the end of the project by pressing End on the keyboard. Move the time cursor back half a second and it should now be located at 7s587. Insert the media file *Towards.avi* on the Video A layer at the time cursor. Change the mark in and out times of the items to be 2s500 and 6s050 respectively.

This project is found in the tutorial folder as *Step4.eds*

Play the movie. Again, the transition between scenes 2 and 3 is sharp, so drag a *Horizontal Slide* transition (in the Transitions / Slide folder of the video effects list) from the list at the bottom of the window to the top Transitions layer, placing the new transition above the overlap of scenes 2 and 3.
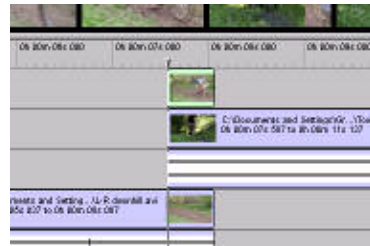
Play the movie again. This time, scene 3 will slide over the second scene.

We can investigate the new transition by right-clicking over the item on the Transitions layer and selecting Properties from the popup menu. This opens the transition's properties dialog.

This transition has several more user options than the dissolve property, but the dialog looks basically the same. The transition layers are shown at the bottom left of the dialog (again, configured automatically) and the dialog has a large preview to show the transition at work. Try experimenting with the options and using the preview to see the results. When you are finished, click Cancel to lose your changes.

This project is found in the tutorial folder as *Step5.eds*

Adding The Remaining Scenes

We're getting pretty close to finishing the basic movie now, we only have to add the last few scenes. The storyboard says that the next scene is the right-to-left downhill clip, which we will add to the Video B layer.

Move the time cursor to the end of the project, move back half a second (to 10s637) and insert *R-L Downhill.avi* on the Video B layer. Set the items' mark in and out times to be 1s063 and 2s800 respectively. Add a dissolve transition above scenes 3 and 4.

After the end of scene 4, also on the Video B layer, add *Splash into.avi*. Set the mark in and out times of the items to be 3s361 and 4s461 respectively.

After the end of scene 5, also on the Video B layer, add *Close splash.avi*. Set the mark in and out times of the items to be 2s072 and 2s431 respectively.

This project is found in the tutorial folder as *Step6.eds*

Play the movie.

The basics of the end of the movie are there, but we need to do some additional work to neaten it up. First, mirror the video clip of the *Splash into.avi* so that the direction of the bikes is more natural.

You will also notice that the close up of the water splash (*Close splash.avi*) at the end of the movie has very loud audio volume, so we will remove this audio and use the audio from the previous item instead. We can't delete just the audio item at the

moment as they are linked, so we will first need to break this link. Right-click on either the audio or video item to open the popup menu – select Edit / Break link.

Now click anywhere on a blank area of a layer to deselect the items. Now, just click on the audio item of *Close splash.avi.* to select it. Right click on the item and select Edit / Delete from the popup menu. This will delete the audio item. The end of your movie will now look like the figure below.
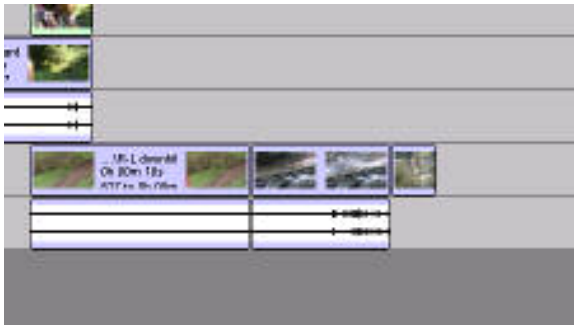

Selecting Items

One of the important concepts in EditStudio is the idea of a selected item. When an item is selected, you can delete it, move it, resize it as well as a number of other operations. This is analogous to selecting text in a word processor before you can change its font or delete it. Selected items in EditStudio are drawn in a dark blue, whereas unselected items are light blue or light green.

You can select an item by clicking on it. You can select more items, or unselect items by control-clicking (holding down the Control key while clicking) on the items.

One item can also be the focussed item. The focussed item is usually the last selected item and is used whenever you do something which can only apply to one item – for example, open its properties dialog. The focussed item has a yellow border to distinguish it from the other items.

We now want to extend the audio from the *Splash into.avi* clip to run for longer. The easiest way to do this is to move our mouse pointer over the end of the audio item until it changes to a ✛. Now

click down and drag the item as far as you can to the right; when the item won't resize any further, release it.
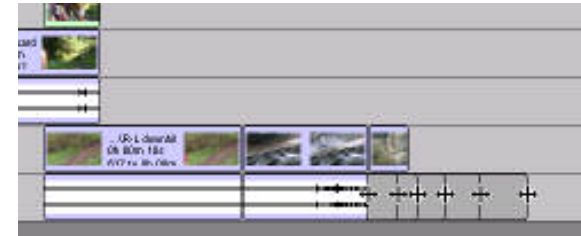
becomes
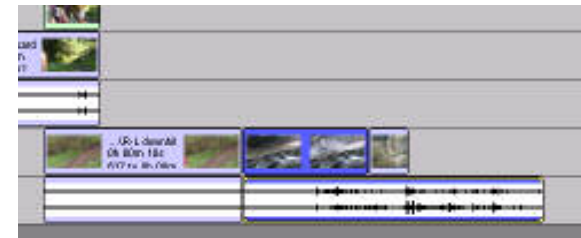
Press Play to see how your movie ends now. Notice how the sound continues even after the images have ended.

This project is found in the tutorial folder as *Step7.eds*

Inserting Still Frames

So far we've built the movie using media file clips which contain both video and audio. You can also add still frames from bitmap files to the project to produce still frames. We will end the movie with a still frame of a water splash, over which we can add some text.

Move the time cursor to 13s833 (the end of the last video frame of the movie) and insert the file *Still splash.bmp* on the Video B layer using the same method you used to insert video files. As bitmap files don't have any definite length in time, the bitmap item is set to be 1 minute long by default. This is too long for our purpose, so set the mark out time of the bitmap to 1 second - notice how the mark out dialog is very much simpler when dealing with bitmap items than with video items. You may now drag the end of the

bitmap item with the mouse pointer until it lines up with the end of the underlying audio item – the end will snap into place.
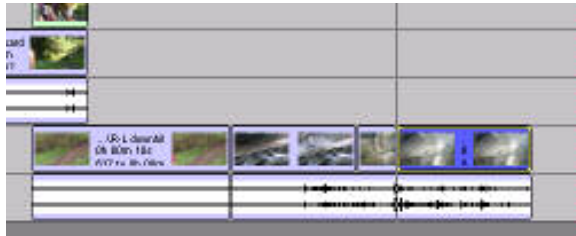
You will find as you move the time cursor over this bitmap image, the preview will not change as it replays the same frame over again. Play the movie to see the current state of the ending.

This project is found in the tutorial folder as *Step8.eds*

Saving A Frame

EditStudio lets you save out the current preview's frame. Right-click over the preview to open a popup menu and select Save as bitmap*.*

Adding Text

According to our storyboard, all we have to do now is put some text at the end and we can finish the movie. Luckily, EditStudio has a powerful text effect which makes adding titles very easy. Drag the text effect from the video effects list onto the Video A layer above the last 2 video items – you will notice that the item still attempts to snap to the neighbour items to help you position it. Resize the text item until it looks like the item shown to the right.

Right-click on the text effect item and select Properties from the popup menu, from which we can change the text.
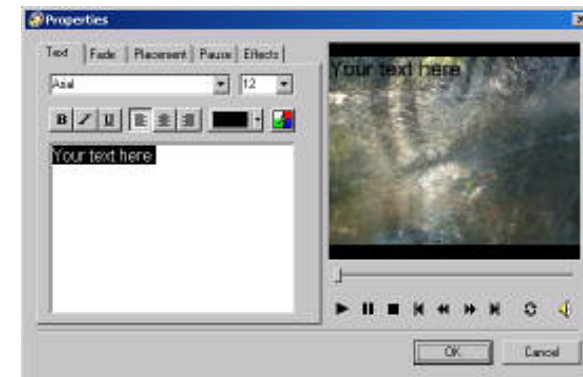
The text effect works very much like a word processor – you can change the font, size and style of as much or little of the text as you wish. The default text "Your text here" should be changed to "make a splash with EditStudio" in any style you wish. The preview to the right of the dialog shows the effect of your text on the final video.

You may notice that the default text colour of black doesn't show up very well on the dark background of the video – feel free to change the text colour to any you feel is clearer to read.
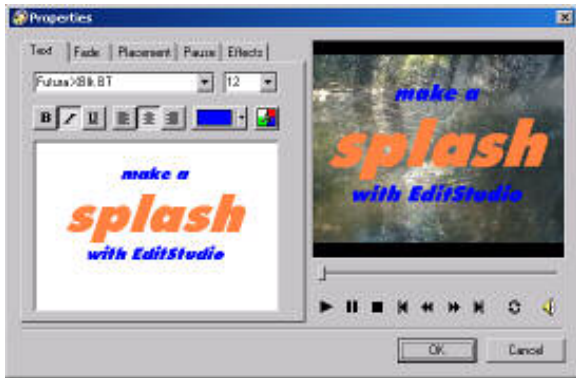
In our example we've chosen a very bold font (Futura XBlk) to make the text readable. We can further improve the readability by clicking on the Effects tab of the dialog and giving the text a soft white shadow – this produces a halo effect over the dark video.
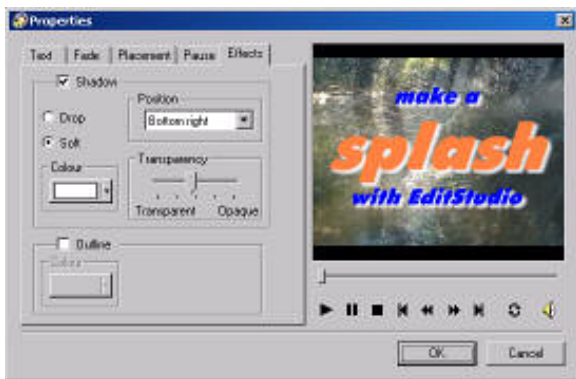
Experiment with the style of the text until you are happy with it. Click OK to apply your changes to the movie. Play the movie to preview your new text.

The text appears very suddenly, so we will need to fade the text in to make it more suitable for the movie. The text effect provides a way of doing this – open its properties dialog, click on the Fade tab and set a fade in time of 1 second. Play the movie again to see the text fade in nicely.

This project is found in the tutorial folder as *Step9.eds*

Although the movie plays well at the moment, we can just neaten up the end of the movie by fading out the audio volume so that it doesn't just stop abruptly.

Move the time cursor to the end of the project and then move it back 1 second (to 14s013). Drag a *Fade Down* audio filter from the Volume folder of the audio filters list to the cursor – the new item will snap its start to the time cursor and its end to the end of the project.
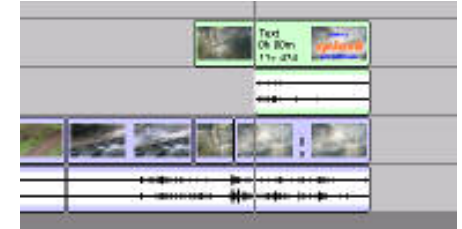
Play the project again to hear the audio fade out at the end.

This project is found in the tutorial folder as *Step10.eds*

This is now the end of the editing section of this tutorial – we'll now look at how we can build this movie into a format that people can watch.

Building Your Movie

You can arrange and edit your movie all you want, but at some point you will want to transfer your movie from EditStudio into some format which other people can watch it. You may wish to create a movie for:
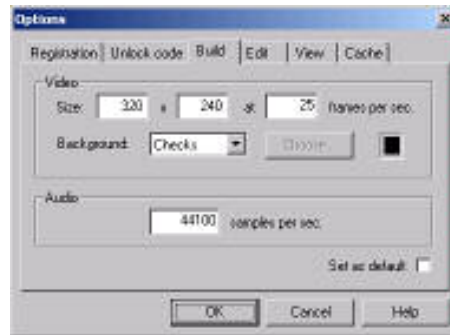
- The web

- CD-ROM

- DV Camcorder

Although EditStudio provides you with a range of popular formats when you create a new project, you can change any aspect of the movie at any time using the Options dialog (available from the Tools menu).

We'll look at how you might now create a movie from the tutorial suitable for each of the formats described above. All these movies are built using the Build Wizard, which can be opened by selecting Build from the File menu.

The Web

Using the internet to distribute your movie will allow it to be seen by the maximum number of viewers. Alternatively, you might want to put a family movie on the web and only give the web address out to a select number of people. This would be an ideal method for showing the movie to friends and family who live far away.

The main points to remember with a web movie is that it should be:

a) short in length, because it will cost less to download for viewers who pay for their time on the internet

b) highly compressed, so that it can be downloaded over slow internet connections

c) it should be usable on a wide range of computers (PC, Mac and Linux)

A good format for web movies is Apple's QuickTime format and there is a preset in the Build Wizard to create a suitable movie. We will create a QuickTime file, which we can then upload to a web site to put on a web page.

Open the Build Wizard by clicking the Build button on the toolbar.
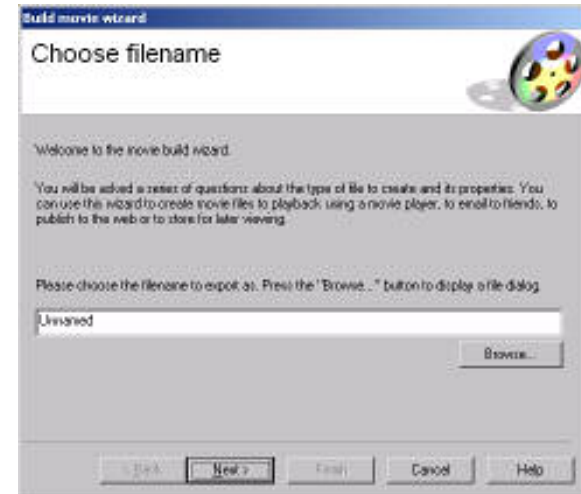
The wizard will guide through each step of the process. The first step is to choose the filename for the QuickTime file. You can choose any name you wish, but for this tutorial we are going to choose C:\tutorial – choose any appropriate name for your own movie. Notice how you don't have to specify a filename extension; EditStudio will add the correct one later in the wizard. Click Next to continue.

You now have to choose from a pre-defined preset to set the format of the movie. Click on the "Choose from a list of presets"

and select *QuickTime web movie* from the list. The details of the movie are described in the wizard and you may now click Finish to start building the movie.

After a few minutes, the movie will finish building and you will be asked if you want to play it. Click Yes and see your final web movie play back in the QuickTime player.

QuickTime Problems

If you are having problems creating or playing a QuickTime movie it is most likely due to you not having a suitable version of QuickTime installed. Simply insert the EditStudio CD and click "Install QuickTime" from the welcome window. Ensure that you install the full version of QuickTime when asked, otherwise you will not be able to

create new QuickTime movies.

Notice how simple the process of creating a movie in EditStudio is – choose the filename and the format for the movie and EditStudio's Build Wizard does the rest for you.

If you want more control over the final movie, instead of clicking Finish at the end of the second step of the wizard you can click Next. You will be taken to pages where you can select the video resolution, compressor and audio format. This gives you total control over the output movie. More details can be found in the online help.

CD-ROM

Distributing a movie on CD-ROM has a number of advantages over alternative formats:

- a CD can store around 1 hour of VHS quality video per disk
- a CD is smaller and lighter than a VHS video cassette for sending through the post
- the CD can also contain separate audio, still images, text and other files

The popular format for storing video on a CD is MPEG. MPEG allows you to store the same amount of video and high quality audio on a CD that normally stores only audio. MPEG files are also usable on a wide number of systems, so users with PCs, Mac and Linux systems can watch the movies.

MPEG movies are available in two formats: MPEG-1 and MPEG-2. The technical differences between the two formats takes many pages of explanation, but the following table provides a very general summary:

MPEG-1	Medium resolution VHS quality Compatible with a large number of systems Highly compressed – small files
MPEG-2	High resolution DVD quality Playable on a smaller number of systems Large files

We will create an MPEG-1 movie for our tutorial.

Creating an MPEG file with EditStudio is very similar to creating the web movie described above. Choose a filename (EditStudio will append a .mpg file extension if you don't add one) and choose *MPEG1 movie* from the list of presets.

When EditStudio has finished creating the movie, you can copy the MPEG file from your hard disk to a CD for distribution.

DV Camcorder

If your are lucky enough to have one of the new range of DV camcorders to take your footage, you can use EditStudio to copy your movie back to your camcorder. Once on your camcorder, you can play it back on a normal TV or copy it to a VHS cassette using a VHS recorder. The great thing about using DV is that if you keep the movie in DV format throughout the capture, editing and copying process then the resultant movie is of extremely high quality.

Your camcorder must support DV-in for this process to work. Some European model camcorders have DV-in disabled (ie. they only have DV-out) as this reduces their cost due to European taxation laws on video recorders. The good news is that a large number of DV-in disabled camcorders can have their DV-in re-enabled using a "widget" for a small cost. Look in your favourite camcorder magazine for many companies that provide this service.
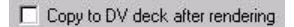
EditStudio has a few tricks up its sleeve when building DV movies. Simply connect your camcorder to your Firewire card, insert a blank tape and set it to VCR mode. When EditStudio has finished building your movie it will then automatically start your camcorder recording and send the movie to it.

Navigating the Build Wizard is very similar to the web and CD examples above. Choose a filename for your movie and ensure the disk that the file is on has a lot of spare space – DV movies are very large in size (about 3.5MB for every *second* of movie!). Then choose a DV preset from the list; make sure you choose a PAL or NTSC preset that is compatible with your camcorder.

You will have a choice of two audio rates – 32kHz and 48kHz. 48kHz provides the best quality audio (better than CD!), but will not allow you to dub on additional audio later. 32kHz provides FM radio quality audio and allows you to use a second audio track to dub on additional audio later using your camcorder. If in doubt, we

recommend choosing 32kHz audio as the difference in sound quality is very small and it provides flexibility later on if you need it.

Before you finish the wizard, you will also notice that there is an option to copy your movie to a DV deck. Click this option to have EditStudio send your movie to your DV camcorder after it has finished building it. Now click Finish.

DV movies take a while to create as they are very high resolution, but the results are worth it! Play your movie back from your camcorder to a TV to fully appreciate the quality.

DV Problems

If you have problems copying the movie to your camcorder, this might be due to either:

- Your camcorder is not DV-in enabled
- Your Firewire card does not support automatic control of your camcorder (usually this applies to old Firewire cards)
- Your hard disk and / or processor is not fast enough to copy the movie in real time to your camcorder. This usually results in missing frames and poor quality audio.

We have tested EditStudio with several Firewire cards and camcorders and recommend a PentiumII 350MHz processor or faster when copying files to a DV camcorder for reliable results.

In the next section we look at using Capture to capture some video from a camcorder.

Capturing Your Movie

The tutorial has shown you how you can edit and build a movie. For completeness we'll now take a look at the process that's needed before all of this – video capture. There are two main requirements for video capture:

- A video capture hardware card
- A video capture software program

Video Capture Card

In order to transfer the video footage from your camcorder to your computer you will need some way of connecting the two together. This is the job of a capture card. A capture card takes the video footage as it is output from your camcorder, converts it to a digital picture and allows the computer (with the video capture program) to read this picture and store it on the computer's hard disk.

There are two types of video capture card: analogue and Firewire. If you have an older camcorder, or you wish to capture video from a VHS video recorder, you will need an analogue capture card. Analogue capture cards take the video output from your camcorder (usually from the composite video or S-video connectors) and convert this signal to a digital picture.

Analogue capture cards work with all camcorders and are very low cost. A budget TV card for your PC, which will work fine as a capture card, costs as little as £30 at the moment here in the UK.

When capturing from an analogue source, the audio is usually captured separately. Some analogue capture cards have their own audio inputs which can be used, but most use the audio inputs of the computer's sound card.

Firewire capture cards have only become popular over the last few years and allow video to be captured from any camcorder with a DV output. DV format camcorders and Sony's Digital8 format camcorders have a suitable connector. Firewire capture cards are also known as IEEE1394 or i-Link cards by different manufacturers.

Video captured with a Firewire capture card from a DV camcorder gives stunning quality video, usually much better than analogue capture. Firewire capture obtains its high quality largely due to the fact that the video signal remains digital at all stages of the capture process. The video footage is stored in a digital format on video tape and transferred directly through the Firewire connection to the computer. Here, the digital signal is decoded in software to produce a picture.

The audio from a DV camcorder is contained in the DV signal, so there is no need for further connections for the audio.

Video Capture Software

Whether you use an analogue or Firewire capture card to transfer your video footage to your computer, you need a video capture program to read the information from the capture card and store the video on your hard disk. This is the job of the video capture software.

With EditStudio, we recommend using Pure Motion's own *Capture* program for this purpose. Capture supports video capture from both analogue and DV. Additionally, Capture allows you to transfer your captured video clip and automatically insert it into EditStudio.

We'll just have a look at how you would go about capturing footage from your camcorder. We'll assume that you're capturing from a DV camcorder – the process is very similar for capturing from an analogue camcorder.

First, ensure that your camcorder is turned on (set to VCR mode) and connected to your PC. Run Capture and ensure that the drop-down list at the top-right of the main window is set to DV Capture. If you don't turn on and connect your camcorder before running Capture, the program may not recognise the camcorder. Capture will now have a blank preview and be ready to capture.
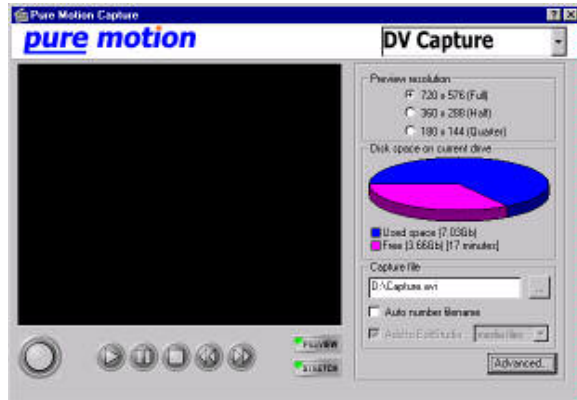
You now have to find the section from the raw footage on your camcorder that you wish to capture. You can either use the controls on your camcorder to fast-forward and rewind the tape or, if your Firewire capture card supports it, use the tape transport controls in Capture.

Press the Play ⊙ button to preview the video in Capture.

When you are happy with the start of the clip you want to capture, stop the preview playing by pressing the Stop ⊙ button.

Before starting the capture, ensure that you are capturing to a suitable place on your hard disk – DV capture requires a large, fast hard disk. Choose the location of the captured file in the main Capture window.

Here, you also have the option of auto-numbering the created capture files. Files will be numbered sequentially for every clip captured, allowing you to easily capture multiple clips.

If you are running EditStudio while using Capture, you can add the newly captured files to EditStudio's timeline or media files list. This makes it very easy to add newly captured clips to an EditStudio project.

When you are happy with the location of the capture file, click the Record button 🔴 to start capturing. If your Firewire card supports control of your camcorder, the camcorder will start automatically; if not, you will have to start the camcorder manually.

The preview in Capture will show you what you are capturing.

When you are happy that you have captured a suitable clip, click the Stop 🟦 button (the Record button changes to the Stop button).

You can repeat this process to capture all the clips you need for your movie. Don't worry if you don't capture all the clips correctly first time, one of the great things about desktop video editing is that you go back and try again until you are happy.

We suggest that you always try to capture slightly more video than you require for a clip (ie. capture more at the start and end), so that you can resize the clip or use the start and end for fades if you decide to do so later.

For full details on Capture, we recommend reading the program's online help.

WHAT NEXT?

Video editing can be hugely creative and rewarding process for everyone involved and the time taken to edit a movie will be repaid many times over in the enjoyment experienced by your audience. Above all, have fun!

Other resources

There are many places to learn more about creating great movies. We suggest:

Books

John Hedgecoe's Camcorder Basics, John Hedgecoe, Collins & Brown, ISBN 1-85585-225-X

A good book that all new camcorder users should read before attempting to use their camcorder. Remember, you'll only go on that holiday once and you can't go back and fix all your camera work later, so learn the basics first!

Digital Guerrilla Video, Avi Hoffer, Miller Freeman Books, ISBN 0-87930-575-4

Extremely interesting and amusing book that will get you "in the mood" for trying some more creative video. Probably best read through in order to get a good overall flavour of the desktop video editing revolution.

Internet

www.puremotion.com/videoediting

Our own web site has a comprehensive section on desktop video editing. As well as tips, technical information and ideas on technique, the site contains a review section for books, hardware and software.

www.adamwilt.com

DV can be confusing in places, but this site contains the answer to any DV question that you can possibly have! Adam has a lot of knowledge of the subject and the site is well organised.

www.computervideo.net

Contains an active discussion group, visited by many knowledgeable desktop video editors. Just read the group to learn, or take part and contribute and ask questions.

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