How to Do Audio Stuff in DP (v. SD-S07)

The Unbearable Slowness of Zip disks and flash drives

Remember that zip disks and flash drives are too slow for audio and you will need to copy your project to the hard drive, eject your zip disk, work on the project, and then copy it back to the zip disk at the end of a work session:

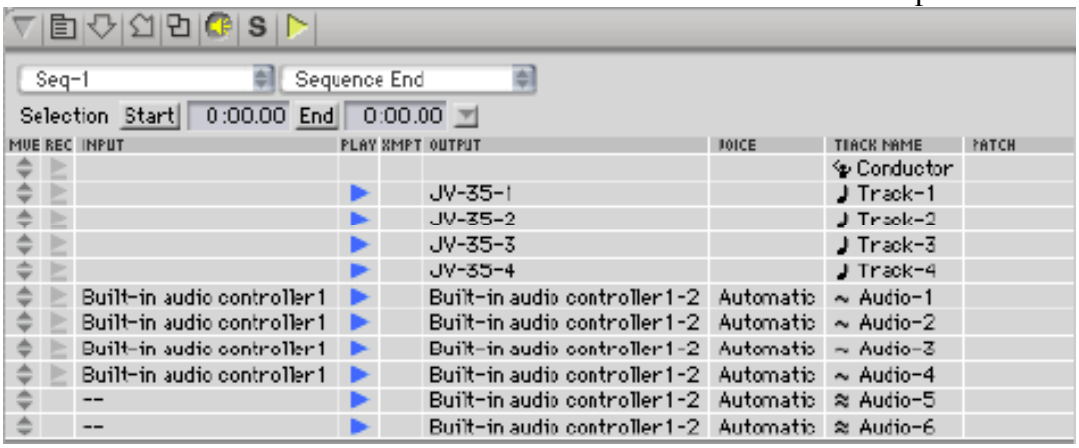
- Make sure that you have *quit* Digital Performer, drag the *entire* project folder (that includes both the sequencer document *and* the Audio Files folder) to the Documents folder of the mtl_student account on the hard drive (there's an alias to that location in the dock), *eject your zip or flash drive*, and work on the hard drive copy of your project.
- When you're done working at a computer for the day, insert your Zip disk or flash drive and copy your project from the Documents folder to the Zip or flash drive for backup. If you leave your project only on a lab computer, it could very well get erased.

Setting Up

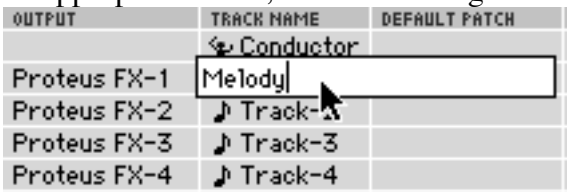
- *OPENING A FILE.* Once you've launched Digital Performer, choose **File→New→New** (this means click on the file menu, move the arrow to "New" and then over to "New" in the submenu; this convention will be used throughout this guide) to create a new sequence file or **File→Open** to open an existing file. Two windows open automatically: the Control Bar and the Tracks window for the current sequence. You can actually have many different sequences in a file, but for now we'll stick to one.
- *THE CONTROL BAR.* The top of the bar contains the transport controls, the clock, and the metronome settings. The bottom strip contains recording mode options such as metronome click, countoff, overdub, etc.

- *EDITOR BUTTONS*. The windows in digital performer that allow you to alter the information that you record are called editors. If the editors palette shown below doesn't appear, click once on the triangle at the upper right of the control bar to get to the editor buttons palette (use flyover help to find out what each icon means):

- *THE TRACKS WINDOW*. The left side of the tracks window contains specifications for each track including record-enable status, play status, track name, output destination, default patch, automation status, and comments. The right side contains an overview of information in the tracks with a time ruler across the top.



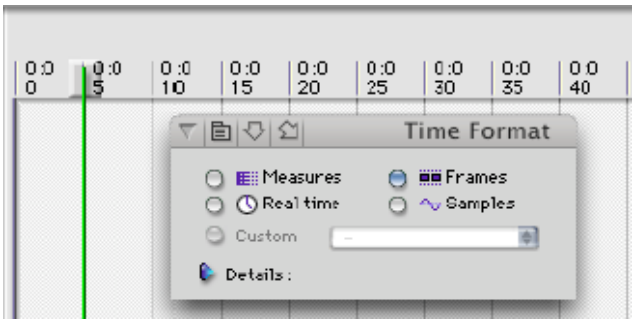
- *ADDING TRACKS*. The default DP file has several MIDI tracks (note icon), several audio tracks (wavy icons), and a conductor track (theoretically a conductor icon) that contains tempo, time signature, key signature, and marker information. You can immediately delete the MIDI tracks by clicking on the track name (or dragging down the track names to select multiple tracks and choosing **Project→Delete Tracks**. To add additional audio tracks, choose **Project→Add Track→Mono Audio Track** (or stereo if the audio files will be stereo).
- *NAME THE TRACKS*. For each track, option-click in the "track name" column, type an appropriate name, and hit enter. Ignore the "Conductor" track for now.



Time Formats

Digital Performer allows you to use either musical time (measures, beats, etc.) or clock time (either SMPTE time or regular time). To change to frame-time (SMPTE format measured in hours:minutes:seconds:frames), click the button next to the main clock until the film icon appears as below.

For the editors, time type is controlled by the Time Formats window (choose **Setup→Time Formats**). In this window, you can change the time type for time rulers, pointer coordinates, and event information. To choose frame time (which you will use almost exclusively in this class), click on the "Frames" radio button at the top of the window. Notice that the time ruler of the tracks window now shows hours:minutes:seconds.



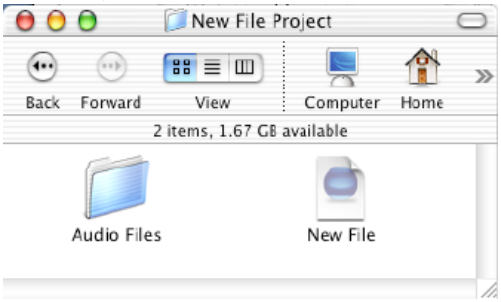
Playback: Mute, Solo, Loop

- *RECORD-ENABLE*. You record-enable a track by clicking on the icon in the "rec" column for the desired track.
- *MUTE*. You can disable playback on a track ("muting" a channel in traditional audio terms) by clicking on its "play" arrow—the normally blue arrow will become gray. This is valuable if you need to hear a mix without certain elements.
- *SOLO*. Solo works in the opposite way. Click the solo button at the top of the window, all the play buttons will turn orange. Click on the play buttons that you wish to hear and all the others will be muted. Multiple tracks can be soloed at one time. This method of soloing allows you to switch quickly between a set of soloed tracks and full playback. Soloing can also be used in the graphic, list, or notation editors to solo only the information in the track shown in that window.
- *LOOP*. To cause part of a track to repeat some number of times, use the loop feature (this is different than the memory-cycle recording mode). Select the information that you wish to loop either by clicking on a block when your cursor looks like an arrow, or by drag-enclosing information when your cursor looks like a crosshair (see below for details on information selection). Choose **Region→Set Loop**, make sure that the loop time is correct, and select the number of times that the information should be looped. A gray bar will show up in the track for the looped duration.

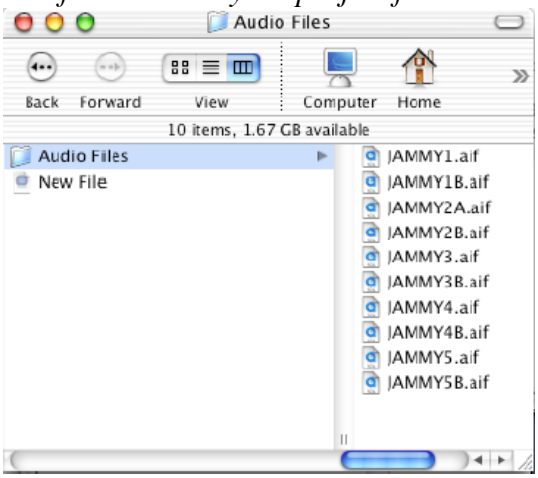
Importing Audio

Put Audio in Audio Files Folder

- Create a new project, or if you're adding to an old project duplicate your project folder in the Finder by double-clicking on your zip disk, then clicking (***not*** double-clicking) on your project folder, and then choosing **File→Duplicate** (or ⌘-D). You should now have a *folder* with your project file and an Audio Files folder inside. If you don't, make one!



- To use audio files from the 496H Resources folder on the server: click on the Music_Lab_Server icon in the dock, double-click on the 496H_Resources folder, and double-click on the appropriate audio folder. Drag the file(s) from the server to the Audio Files folder in your project folder on your Zip disk or the hard drive (do not attempt to "work from the server"). Drag the server icon to the trash icon in the dock after you've dragged the files to your Zip disk. *Always put audio files in the "Audio Files" folder inside your project folder*:

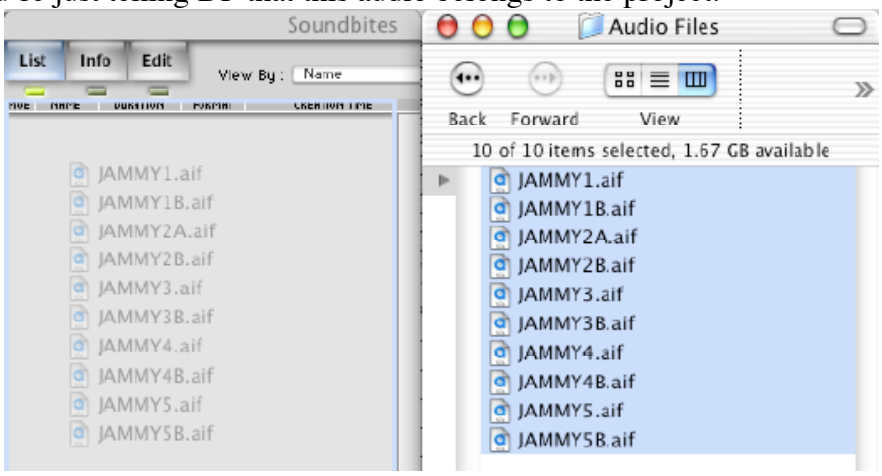


- To use audio files from another source: drag those audio files into the "Audio Files" folder of your project folder.
- To use audio from a CD: launch your DP project, open the soundbites window (**Project→Soundbites**), choose "Import Audio…" from the mini-menu, navigate to the CD, and choose the desired track (or part of a track). If you import audio from a CD, you don't have to go through the next step to "Associate" the CD audio with the project—it already appears in the soundbites window.

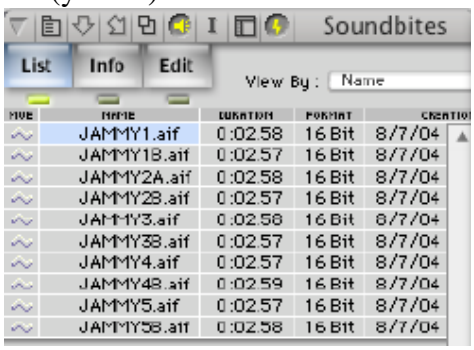
"Associate" the audio with your project

- Open the Soundbites window (**Project→Soundbites**)

- Drag the files from your zip disk or hard drive onto the soundbites window (you can also choose "Add Soundbite…" from the mini-menu of the soundbites window to do the same thing). You're not actually moving the audio anywhere; you're just telling DP that this audio belongs to the project.



- What you see in the soundbites window are now called—oddly enough—"soundbites." There is logic to not calling them "audio files," because you will not be changing or moving the original audio file, just a reference to it.
- To listen to a soundbite in the soundbites window, make sure that the speaker icon in the titlebar is active (yellow) and click on the name of the soundbite:



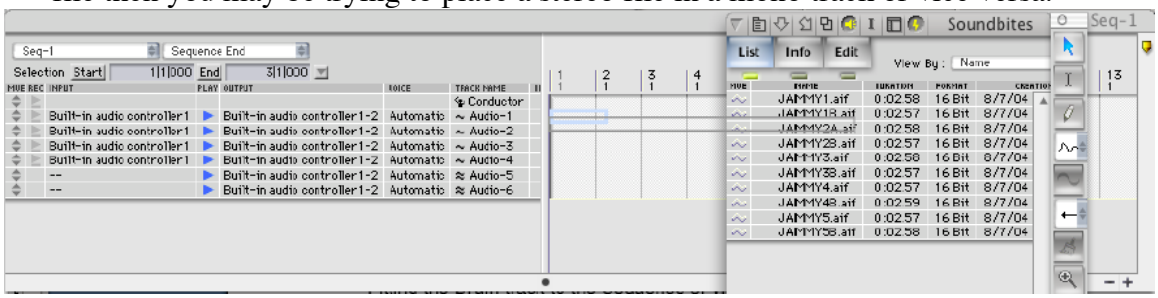
- Remember that the zip or flash drive will likely be too slow for this purpose, so you may have to quit DP, copy your *entire project folder* to the Documents folder of the MTL_Student account on the hard drive, *eject your zip disk or flash drive*, and work from the hard drive. At the end of a work session you will copy the file from the documents folder to your zip or flash drive.

Create an Audio Track(s)

- Choose **Project→Add Track→Mono Audio Track** or **→Stereo Audio Track** to create a track for the audio. You can tell if a file is stereo or mono by looking at the "wavy" icon next to the file name in the soundbites window (one wave means mono, two means stereo—the soundbites in the example above are all mono).
- You can move these tracks vertically in the tracks window by dragging their handles in the "Mve" column.
- Once you've added a track, you must assign it to an output. Click in the output column and choose "built-in 1-2". If that is not available, choose "New Stereo Bundle" and then "built-in 1-2".

Place a soundbite into the sequence

- Drag a soundbite from the Soundbites window to a mono or stereo audio track in the tracks editor by dragging the "Mve" handle of the soundbite (the wavy line). The blue outline will guide the placement of the soundbite. DP will follow column-snapping conventions and place the soundbite right on a column. If it won't let you drop the file then you may be trying to place a stereo file in a mono track or vice versa.

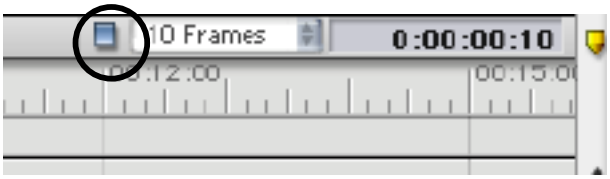


- You can also open the sequence editor for an audio track (by double-clicking on the track name) and drag a soundbite to the sequence editor. Here the Edit resolution will control the placement (see below).

Editing Audio in the Sequence Editor

Moving, Copying, Cutting, Pasting, Snipping, and Splicing

- All actions in the Sequence Editor, including selecting audio and moving audio, are governed by the "Edit Resolution". This causes all actions to snap to a grid. You will usually want to disable this, by clicking on the box next to the word "unit" to turn it off (not blue):

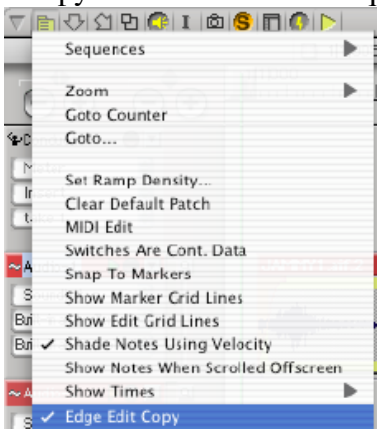


- You can move a soundbite by selecting the soundbite when the cursor looks like an arrow and then, with the cursor now looking like a finger icon, dragging it somewhere, perhaps even to a new track
- You can make a "copy" of a soundbite by selecting the soundbite and holding down the option key. Then, with the cursor looking like a two-finger icon, drag to the desired location and release. New audio is not actually creating by this "copying," the same audio file is just referenced again.
- You can also select *part* of a soundbite by holding your mouse over the bottom part of the soundbite until it looks like a cross-hair and dragging. Once selected, you can perform the various editing functions on that segment such as choosing copy, cut, or trim (this last one removes the part of the soundbite that is *not* selected) from the Edit menu. You can paste this copied or cut segment elsewhere by selected part of the target area and choosing paste from the Edit menu.
- "Cut" removes a soundbite (or part of a soundbite) leaving the remaining material in place. "Snip" (also in the Edit menu) removes the material and also removes the time. Similarly, "Paste" places the clipboard material over existing material, whereas "Splice" inserts the material (just like real tape!)

- To change just the edge of the soundbite hold your cursor near the edge of the soundbite until it turns into two facing arrows and drag (don't drag when the cursor looks like a hand—this will timestretch the audio)
- *When edge editing the audio, you will usually want to have "Edge Edit Copy" selected in the mini-menu of the sequence editor*. This function creates a new soundbite (*not* new audio) every time you move the edge. Otherwise, edge editing changes all copies of a soundbite.

Selecting and Editing—Watch the Changing Cursor!

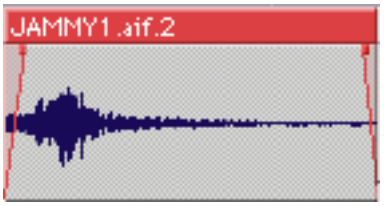
- Arrow—click soundbite to select
- Finger (shows up when something has been selected)—drag soundbite to move
- Double-finger (shows up when option key is held down)—drag to copy
- Cross-hair (within the soundbite near bottom)—drag to select time
  - To get rid of anything not selected, choose **Edit→Trim**
- Double-arrow (at edge of soundbite)—drag to edit edge
  - Be sure that "Edge Edit Copy" is checked in the sequence editor mini-menu



- Crossed lines (at edge of soundbite near top)—drag to create a fade
- Sideways Hand (at top edge of soundbite)—drag to time-stretch

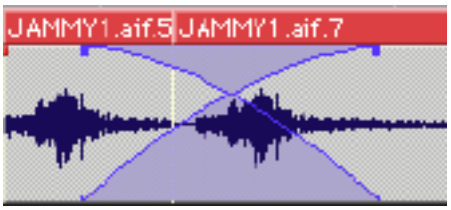
Fade in/out and Crossfade

- When you edge-edit or trim audio, you may end up with edges that do not start at silence. This can create annoying and unprofessional pops or clicks.
- To fix this, move your mouse at the edge of the soundbite near the top until the cursor turns into two crossed lines (there's a little "handle" there) and drag a little bit into the soundbite. This will create a fade in or out depending on which end of the sound bite your mouse is. In this picture there is both a fade in and a fade out indicated by the red lines:

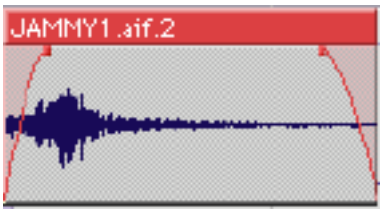


- You can "cross-fade" two sound bites by overlapping them, moving the mouse to the bottom of the soundbites until the cursor looks like a cross hair, dragging across the

end of the first soundbite and the beginning of the second, and then choosing **Audio→Fades…**

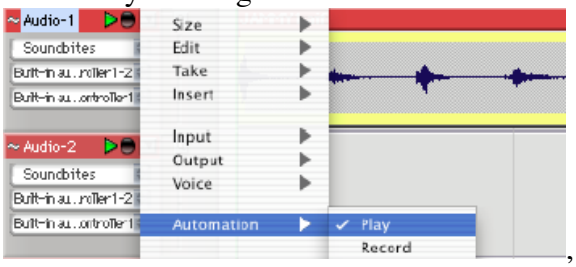


- You can control the shape the fades by choosing **Audio→Fades…** and choosing a different shape:

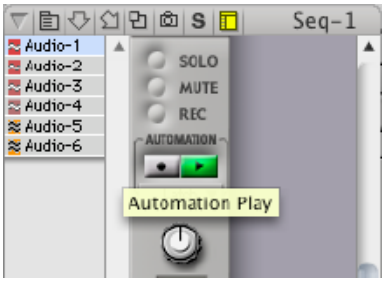


Pan and Volume Settings in the Sequence Editor

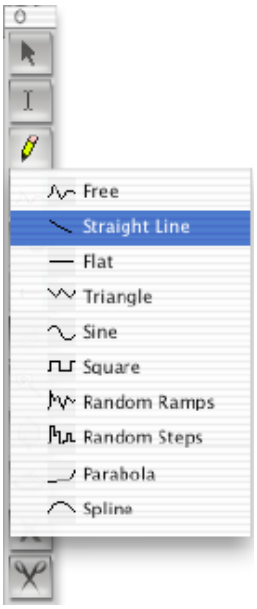
- Before you add pan or volume, first make sure that automation is play-enabled by clicking on the downward arrow next to each track and selecting automation→play from the pop-up menu or by clicking on the arrow in the mixer window.

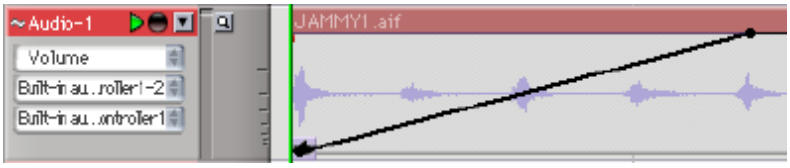


, or



- In the Sequence editor, click on the pop-up menu next to the desired track that initially reads "soundbites" and choose “Pan” or “Volume”. If that pop-up menu doesn’t show, you may need to make the track larger by clicking on the downward arrow and choosing size→medium
- From the “tools” palette (if they’re not onscreen, choose **Studio→Tools**) select the line type (for example, straight line), choose the pencil tool, and draw the desired shape.

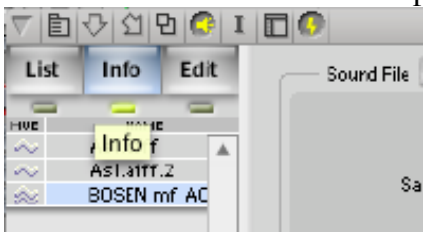




- Once you've inserted a line, you can choose the arrow tool, click on the line, and drag one of the line points to create the pan or volume shape that you desire. If the edit resolution is on, you will only be able to create breakpoints at edit resolution boundaries. (If your volume or pan line is dashed, then you need to enable automation playback).

Pitch-Shift, Time Stretch, Reverse, and Effects

- ***Pitch-shift*** a soundbite by selecting the soundbite and choosing **Region→Transpose** and then selecting two pitches whose interval represents the desired pitch shift (C3 to C4 is a lot, C3 to C#3 is a little).
- Pitch shifting noisy sounds can generate odd results sometimes. If you're getting strange results, try the "Standard" mode of pitch shifting (as opposed to the default "PureDSP" mode.
  - Open the soundbites window and click on the "info" pane



  - Select "Use Standard Pitch Shift" from the transpose pop-up menu

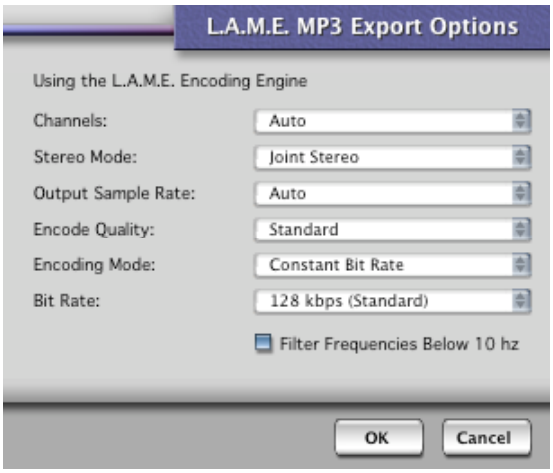
- ***Time Stretch or Compress*** a soundbite by holding the mouse over the upper edge of the soundbite so that it looks like a sideways hand and dragging. Time stretching or compressing too far can lead to audio that sounds overly "electronic".
- You can ***reverse*** a soundbite by selecting it (or part of it) and choosing **Audio→Plug-ins→Reverse**.
- You can apply plug-ins or "spectral effects" in the Sequence Editor by selecting the soundbite and choosing **Audio→Plug-ins→** and then whatever you want. Try the "presets" in the effect window's mini-menu and use the "preview" feature to see what the effect sounds like before you apply it.
- NOTE: Applying plug-ins in the sequence editor automatically creates new audio. You should use the sequence editor if you want to change one sound in a track by itself. If you want to apply an effect continuously, then you should apply it as a plug-in in the Mixer window (possibly with automation).

Bouncing to Disk

To turn audio tracks into an mp3 (or into a WAV or AIFF file suitable for burning to CD):
When you have more than one audio track you need to "bounce" all of the audio to one audio file.

- First, make sure that you're hearing what you want to hear (make sure that none of your elements are muted).
- In the tracks editor (or sequence editor) select the information that you want to bounce (you could just do a select all by choosing command-A). *Only audio that can be heard will be bounced.*
- Choose **Audio→Bounce to Disk**, make the following settings (for an mp3). Be sure that you name the file in an informative way and that the Destination Folder is your project folder on the hard drive, and click OK

- Next you'll get this window. Make the following settings, and click OK.



- Be sure to listen to the resultant MP3 before you turn it in.