

Lecture 7: Introduction of Pro Tools

About Pro Tools

Pro Tools is one of the most popular music production software.

It can record, edit and play back multi-track MIDI, audio and video files.

The version in Lab 207 is Pro Tools LE 7.3. This version does not require an external DSP processor for signal processing and the CPU handles all the digital processes.

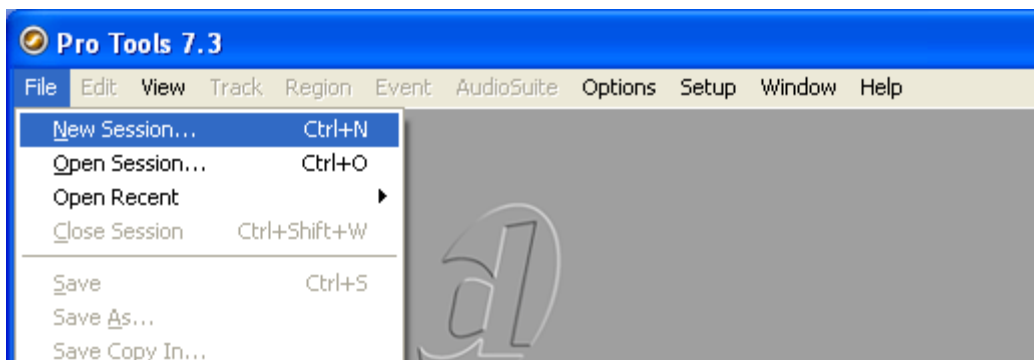
This lecture will cover the basic operations on Pro Tools. Please refer to the Pro Tools Reference Manual for more detailed description.

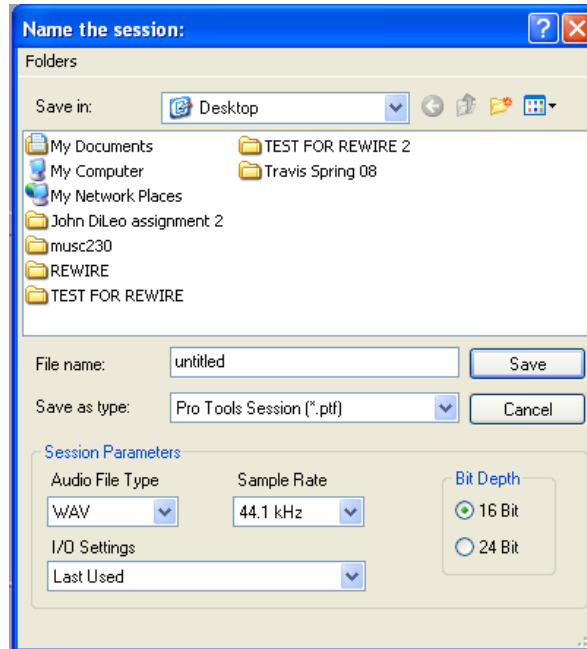
Session and Track

Make New Session

The first thing after you open up Pro Tools is to make a new session that will be used for you project.

Open up Pro Tools → make new session





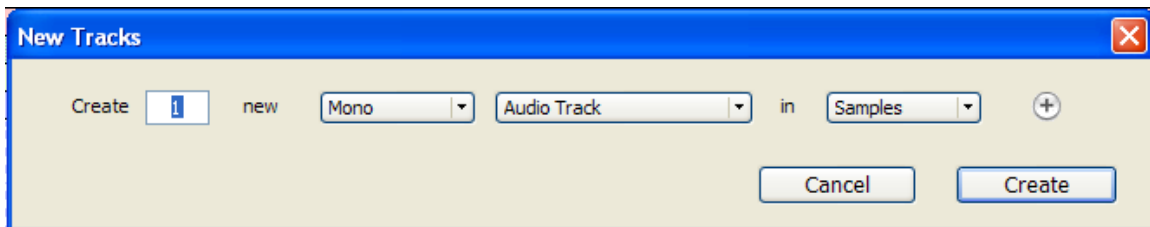
Name the session and select a sampling rate, bit depth and I/O setting. The sampling rate and bit depth are associated with the audio interface hardware, and all the audio signals will be played back or recorded in this session with this specific sampling rate and bit resolution.

Tracks

In order to process audio, a new track needs to be made.

Click on the *track* popup menu → *new*

A window will pop up.



Here you can choose how many tracks you want to make, the type of the track, mono or stereo, and the viewing format of the audio signal.

Mono and Stereo

On stereo tracks, all the audio signals are played in two channels (left and right) while mono track is for one channel audio.

Type of Tracks

There are different types of tracks in Pro Tools – audio tracks, aux input tracks, MIDI tracks, instrument tracks and master fader track.

Audio Track

Audio tracks let you record to disk and play back from disk recorded or imported audio files.

Aux Input Track

Auxiliary Input tracks can be used as effects sends, destinations for submixes, as a bounce destination, as inputs to monitor or process audio (such as audio from external MIDI instruments), and for many other audio routing tasks.

MIDI Track

MIDI tracks store MIDI note, instrument, and controller data. You cannot select a track format when you create a MIDI track, because audio does not pass through it.

Instrument Track

Instrument tracks are a special type of track that provides both MIDI and audio capabilities in a single channel strip. Instrument tracks simplify using software and hardware instruments to record and monitor MIDI instruments

Master Fader Track

Master Fader tracks control the overall level of audio paths that are routed to physical output paths. For example, if we have eight stereo tracks and all of them are routed to analog output channel 1 and 2, then we can use a master fader track to control the overall level of the mix.

Delete Tracks

You can also delete selected tracks using the *track* popup menu.

Track → *delete*

Track vs. Channel

Track and Channel are different concepts here. One Pro Tools audio track can contain one channel audio (mono) or two-channel audio (stereo). Channel is associated with the output ports. Audio from different channels are recorded or played back from different port.

Track Names

The names of each track can be edited by clicking on the *name* block of each track.

I/O

Input and output ports for each track can be selected by clicking on the I/O popup menu of each track.

Question: Based on the current wiring of our DAW, what input and output ports should be selected for a stereo audio track?

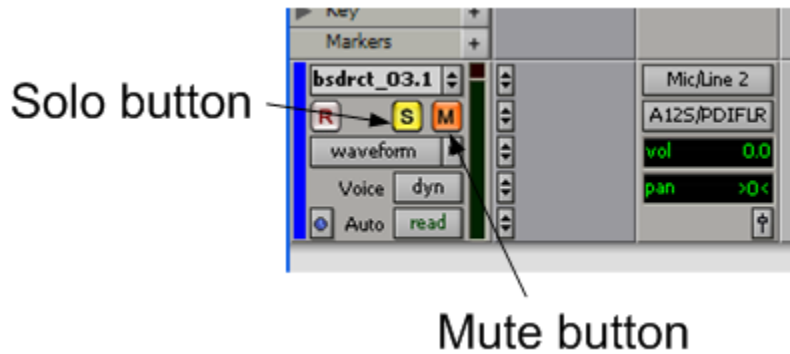
Import audio

To import an audio file to the current session, go to *file* → *import audio*. You will be asked to choose a folder for the audio file and whether you want the imported audio in a new track.

Solo and Mute

On each track there are solo and mute button that are used to solo or mute this track from the output.

There is also another method to mute a track or a region on a track: select the track or region you want to mute, and press *ctrl + m*, you can use the same method to unmute tracks or regions.



Basic Editing

Edit Mode

In Pro Tools there are four edit modes: Shuffle, Slip, Spot and Grid. You can find these buttons on the upper left corner of the Pro Tools interface.

Shuffle – In Shuffle mode, you can move, trim, cut, or paste regions freely within a track or to other tracks, but their movement are constrained by other regions. That is, if you place several regions in a track, they automatically snap to each other. You can then “shuffle” their order, but you cannot separate them from each other and you cannot make them overlap as in Slip mode.

Slip – In Slip mode, regions can be moved freely within a track or to other tracks. In this mode, it is possible to place a region so that there is space between it and other regions in a track, and it’s also possible to overlap two regions.

Grid – In Grid mode, regions and MIDI notes that are moved, trimmed or inserted “snap” to the currently selected Grid value, or to precise increments on a user-definable time grid.

Spot – Spot mode is used to place regions at precise locations.

Edit Tools

On the tool bar you can see several editing tools that include Zoomer, Trim, Selector, Grabber, Scrubber, Pencil Tools and Smart Tool.

Zoomer – Zoomer buttons allow users to zoom the selected track or region on a track both horizontally or vertically.

Trim – Trim tools are used to trim the regions.

Selector – Selector tool is used to make selections on tracks.

Grabber – Grabber can select, separate or move regions on tracks.

Scrubber – Scrubber tools is used to scrub through the track materials.

Pencil Tool – Pencil Tool is used to draw MIDI notes on MIDI tracks.

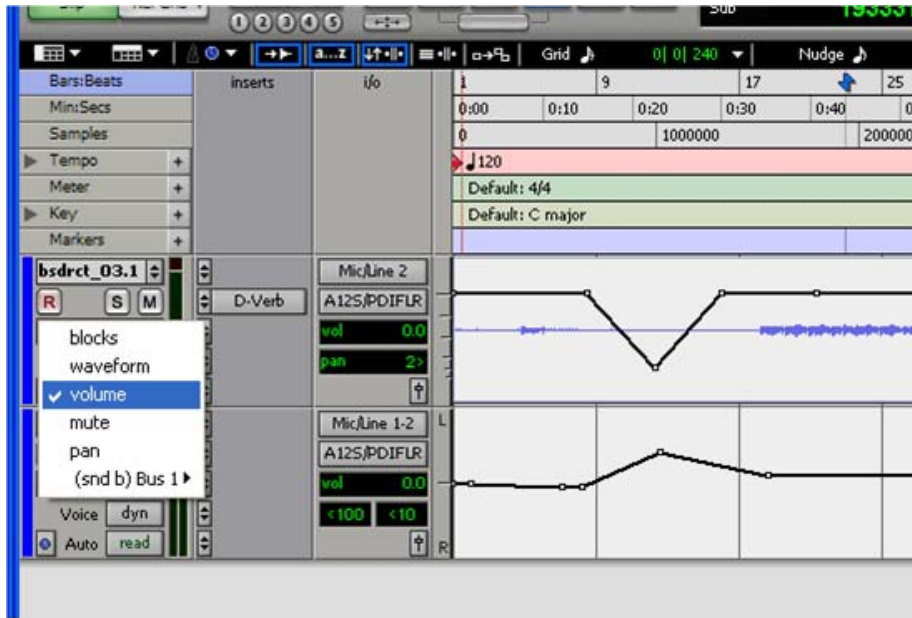
Smart Tool – When Smart Tool button is selected, the Trim, Selector and Grabber functions can be used at the same time.

Volume

The volume of each audio track can be edited with the editing tools. Click on the *waveform* popup menu (or Automation popup menu), choose *volume*. Then you will see a volume line on the track. You can use the Trim, Selector, Grabber or Smart tool to edit the volume of this audio track. You can also delete the edited volume over a region by selecting the region and pressing the “delete” key from your keyboard.

Panning

Just like volume editing, panning of each track can also be edited. Go to the automation popup menu and choose *pan* (for stereo track *pan L* and *pan R*), and use the same method as you edit the volume line to edit the panning curve for this track. When played back, the track will be panned in the way you have edited.



Volume and panning editing

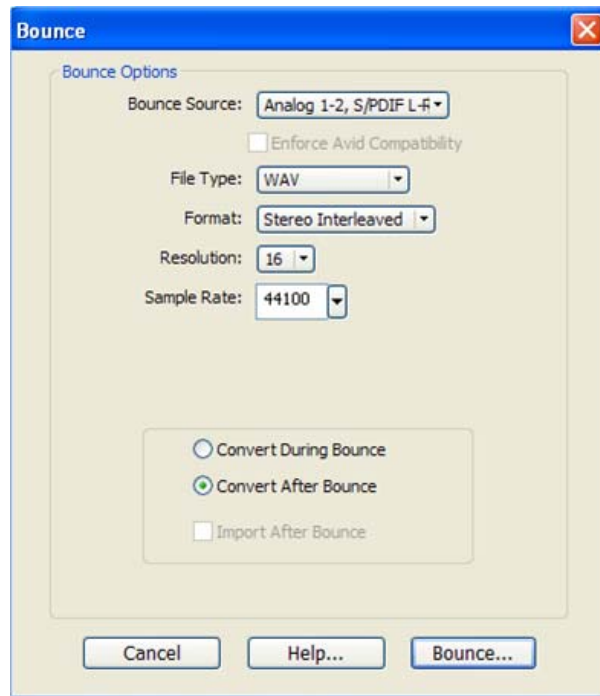
Fading

To fade in or fade out a region on an audio track, select the Smart Tool and move the cursor to the edges you want to fade where the cursor becomes a fading icon, and then drag the mouse over the fading area. One can use the same method to cross fade two blocks of audio on one audio track.

Question: Can you think of another way to do the fading editing?

Bouncing to Disk

After editing an audio file, you will want to bounce this audio to a .wav file on your disk. Go to *File* → *Bounce to disk*, then the following window will popup where you can choose the place where you want to store the file, the format of the file as well as other parameters.



Bouncing to disk window

Basic recording

1. Make an audio track/tracks for recording. (Two mono tracks for stereo recording)
2. Select the correct audio input ports.
3. Enable recording by clicking on the *record* button on the left of each track strip.
4. Click on the *record* button and then *play* button on the transport window to start recording.
5. Click on the *stop* button on the transport window to stop recording.

Exercise:

Use the headphone as microphone to record a 30-second-long speech signal. Fade in and fade out this signal by editing volume. Take out the middle 10 second and merge the rest into a 15 second long audio by using cross fading.