MIDI Sequencing
Sequencing Software

• Most today are capable of recording and processing:
  – MIDI data
  – digital audio data
MIDI Data

• a set of instructions
  – some type of sound bank is required in order to hear a MIDI sequence
    • computer sound bank
    • keyboard with sound bank
    • sound module
Sequencing Programs

• resemble analog tape decks in function, far more flexible

• sequencers allow you to:
  – add notes
  – change tempo and key
  – add controllers
  – change attack/sustain times
Sequencing Programs

• Fix errors
  – correct wrong notes
  – clean up pedaling
  – fix controller info
• Editing
  – add, copy, paste, delete, reorganize musical sections
Finale vs. Logic

• The primary function of *Finale* is to notate music; sequencing is secondary.

• The primary functions of *Logic* are sequencing MIDI and working with digital audio; its notation capabilities are secondary and basic.
Sequencing:
Important Terminology

- **Track** – the way the software visually represents a location for entered MIDI data.
  - a linear sequence of MIDI data
  - tracks can contain large amounts of information, and different types.

- **Patch** – an individual timbre
  - eg. piano, flute, string section.
• **Transport Controls** – similar to the traditional functions of analog tape decks
  – stop, play, pause, fast forward, rewind, and record.

• **Looping** - a track or a section of a track can be told to repeat as many times as you want, while the other tracks play through normally.
Note Entry Methods

• Step-Time Recording
  – Allows you to enter notes one at a time according to the pre-selected note value
  – The sequence time will advance as each note is entered (by the note value selected).
Note Entry Methods

• Real-Time Recording – similar to traditional recording methods:
  – Choose a tempo
  – Enable the metronome
  – Record enable a track
  – Record
  – Overdubbing – allows you to record data without erasing anything
  – Merging – combining data from different tracks
Standard Views For Editing

• Graphic – similar to the piano roll, notes can be:
  − added with a pencil tool
  − dragged to different location
  − dragged to shorten/lengthen duration
• Notation – traditional music notation
• Event List – numerical representation of events
  − note number, location, velocity, duration
• Track Overview – shows all tracks in sequence
  − you can cut/copy/paste between them
Standard Views For Editing

• Mixer – modeled on analog mixers
  – different from other editors
  – shows graphical representation of volume, pan, and other settings instead of time
Measuring Time

• PPQN Resolution (Parts Per Quarter-Note)
  – Logic’s default PPQN is 960 ticks per quarter-note (240/sixteenth)
  – 960 is evenly divisible by every number from 1-12 except for 7, 9, and 11
  – used for position as well as duration of notes
Quantizing

• Sets a user-definable grid
  – notes are pulled towards the nearest grid location

• Used to tighten up a performance
  – overuse can de-humanize music
Standard MIDI File (SMF)

• Universal File Format
  – extension = .mid

• Type 1
  – Multi Track format (most used)
  – Tracks saved as staves (and vice-versa)
Standard MIDI File (SMF)

- Information stored in an SMF
  - track names
  - tempo
  - time signature
  - key signatures

- Not stored in an SMF
  - audio files
  - plug-in settings
  - DAW/sequencer specific information