MIDI: Features and Wish Lists
Timing issues

- Barring
- Accent
- Beams
- Grouping
Clock-time in MIDI event list

**Absolute (machine)**
- Clock ticks/measure (120, 192, 240)
- Ticks/quarter note (30, 48, 60)

**MIDI time stamps**
Video synchronization via MIDI

Early arrangement (through 1990s)

• Score (track)
• Moving images
• Frame numbers
• Bar numbers
• Sound track
SMPTE Code

Designed to permitted later addition of dialogue.
Originally: complex apparatus relaying on MIDI ticks.

Now: special chips today, based on real time
Technical details
Quantized vs unquantized MIDI files

- **Expression** requires **unquantized** files
- **Unquantized** files messy to work with
- **Quantized files** preferable for transcription and hard to listen to
Listening quiz: Quantized or Unquantized?

1.
2.
3.
4.
5.