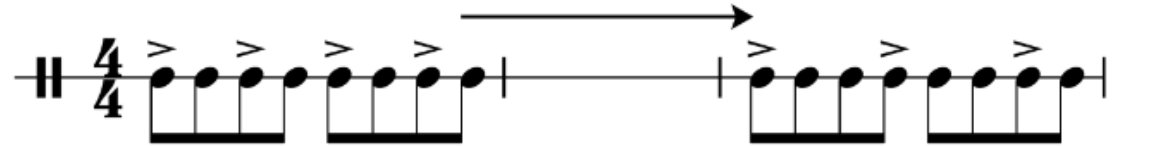


MIDI: Features and Wish Lists

Timing issues

- Barring
- Accent
- Beams
- Grouping

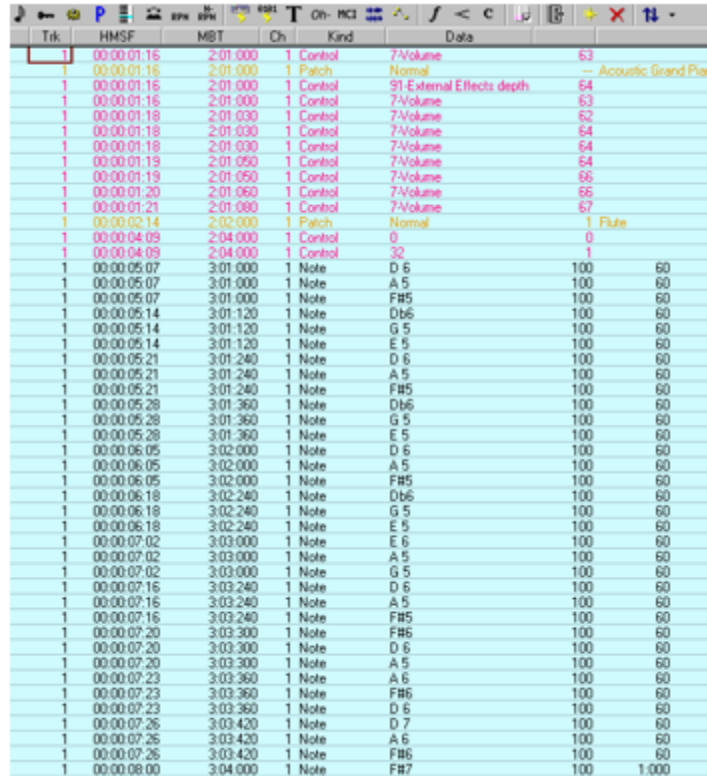


Clock-time in MIDI event list

Absolute (machine)

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

Midi time stamps



Trk	HMSF	MBT	Ch	Kind	Data
1	00:00:01:16	2:01:000	1	Control	7:Volume 63
1	00:00:01:16	2:01:000	1	Patch	Normal -- Acoustic Grand Piano
1	00:00:01:16	2:01:000	1	Control	91:External Effects depth 64
1	00:00:01:16	2:01:000	1	Control	7:Volume 63
1	00:00:01:18	2:01:030	1	Control	7:Volume 62
1	00:00:01:18	2:01:030	1	Control	7:Volume 64
1	00:00:01:18	2:01:030	1	Control	7:Volume 64
1	00:00:01:19	2:01:050	1	Control	7:Volume 64
1	00:00:01:19	2:01:050	1	Control	7:Volume 66
1	00:00:01:20	2:01:060	1	Control	7:Volume 66
1	00:00:01:21	2:01:080	1	Control	7:Volume 67
1	00:00:02:14	2:02:000	1	Patch	Normal 1 Flute
1	00:00:04:09	2:04:000	1	Control	0
1	00:00:04:09	2:04:000	1	Control	32 1
1	00:00:05:07	3:01:000	1	Note	D 6 100 60
1	00:00:05:07	3:01:000	1	Note	A 5 100 60
1	00:00:05:07	3:01:000	1	Note	F#5 100 60
1	00:00:05:14	3:01:120	1	Note	D#6 100 60
1	00:00:05:14	3:01:120	1	Note	G 5 100 60
1	00:00:05:14	3:01:120	1	Note	E 5 100 60
1	00:00:05:21	3:01:240	1	Note	D 6 100 60
1	00:00:05:21	3:01:240	1	Note	A 5 100 60
1	00:00:05:21	3:01:240	1	Note	F#5 100 60
1	00:00:05:28	3:01:360	1	Note	D#6 100 60
1	00:00:05:28	3:01:360	1	Note	G 5 100 60
1	00:00:05:28	3:01:360	1	Note	E 5 100 60
1	00:00:06:05	3:02:000	1	Note	D 6 100 60
1	00:00:06:05	3:02:000	1	Note	A 5 100 60
1	00:00:06:05	3:02:000	1	Note	F#5 100 60
1	00:00:06:18	3:02:240	1	Note	D#6 100 60
1	00:00:06:18	3:02:240	1	Note	G 5 100 60
1	00:00:06:18	3:02:240	1	Note	E 5 100 60
1	00:00:07:02	3:03:000	1	Note	E 6 100 60
1	00:00:07:02	3:03:000	1	Note	A 5 100 60
1	00:00:07:02	3:03:000	1	Note	G 5 100 60
1	00:00:07:16	3:03:240	1	Note	D 6 100 60
1	00:00:07:16	3:03:240	1	Note	A 5 100 60
1	00:00:07:16	3:03:240	1	Note	F#5 100 60
1	00:00:07:20	3:03:300	1	Note	F#6 100 60
1	00:00:07:20	3:03:300	1	Note	D 6 100 60
1	00:00:07:20	3:03:300	1	Note	A 5 100 60
1	00:00:07:23	3:03:360	1	Note	A 6 100 60
1	00:00:07:23	3:03:360	1	Note	F#6 100 60
1	00:00:07:23	3:03:360	1	Note	D 6 100 60
1	00:00:07:26	3:03:420	1	Note	D 7 100 60
1	00:00:07:26	3:03:420	1	Note	A 6 100 60
1	00:00:07:26	3:03:420	1	Note	F#6 100 60
1	00:00:08:00	3:04:000	1	Note	F#7 100 1:000

Video synchronization via MIDI

Early arrangement
(through 1990s)

- Score (track)
- Moving images
- Frame numbers
- Bar numbers
- Sound track

2024 Eleanor Selfridge-Field

SMPTE Code

Designed to permitted later addition of dialogue.

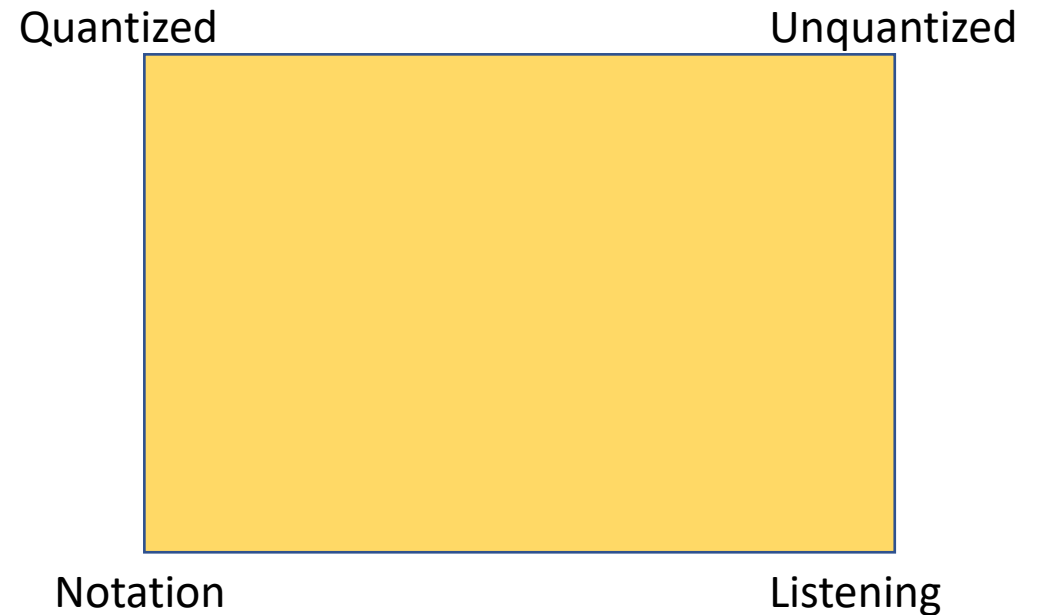
Originally: complex apparatus relaying on MIDI ticks.

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.