

Supplement to Chapter 4 of *The Science of Digital Media* – Digital Audio Representation

Worksheet – Digital Audio > MIDI ¹

Exercise 1

Write a low-level C program that reads MIDI message from /dev/midi.

Run your program by attaching a MIDI device to your computer and playing a sequence of notes and messages such as this (assuming your MIDI input device allows these actions):

Play middle C.

Play middle C with more force.

Change the keyboard's voice to a violin.

Play the note G and move the pitch bend wheel.

Play C, E, and G as a chord.

Print out the messages and interpret them.

Exercise 2

See if your MIDI sequencing software allows you to read the low-level MIDI messages. (For example, Cakewalk Music Creator gives you a view like the one below.)

	Trk	HMSF	MBT	Ch	Kind	Data		
■	2	00:00:02:01	2:01:040	1	Note	E 6	36	399
■	2	00:00:02:07	2:01:476	1	Note	E \flat 6	52	476
■	2	00:00:02:16	2:02:069	1	Note	E 6	42	351
■	2	00:00:02:22	2:02:447	1	Note	E \flat 6	60	440
■	2	00:00:03:00	2:02:936	1	Note	E 6	42	456
■	2	00:00:03:06	2:03:384	1	Note	B 5	51	447
■	2	00:00:03:12	2:03:796	1	Note	D 6	57	484
■	2	00:00:03:21	2:04:364	1	Note	C 6	49	580
■	2	00:00:03:29	2:04:898	1	Note	A 3	42	1:649
■	2	00:00:03:29	2:04:915	1	Note	E 4	44	1:674
■	2	00:00:04:00	2:04:952	1	Note	A 4	36	1:645
■	2	00:00:04:00	3:01:001	1	Note	A 5	32	1:701

Do the same sequence of inputs as in the previous exercise and compare the results.

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