

Lab 4 Timing Diagrams

Tristan Abner

Julia Wang

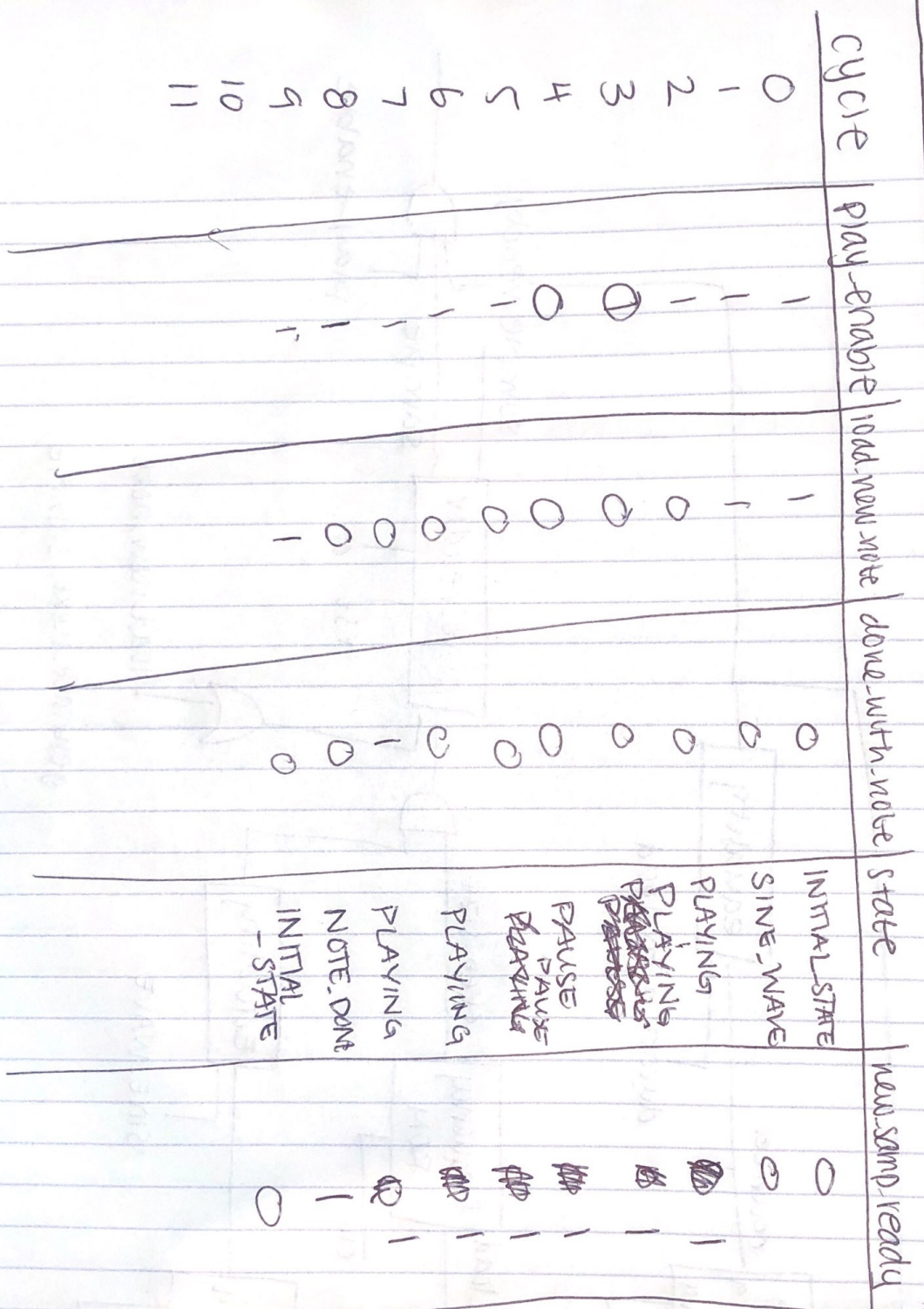
Troy Lawrence

Song-reader.v

Cycle	Reset	Play	Increment Address	Read Rom	^{new_note} {song, duration}	Song done	note done	State
0	1	x	x	x	x	x	x	Default
1	0	0	0	0	x	0	0	RESET
2	0	1	0	0	{0, 0 ⁰ 111}	0	0	RESET
3	0	0	1	0	{0, 0 ⁰ 111}	0	0	INCREMENTED
4	0	0	1	1	{0, 1 ¹ 111}	0	0	ROM_OUT
5	0	0	1	1	{0, 0 ⁰ 111}	0	1	CHECK_DONE
6	0	0	2	1	{0, 0 ⁰ 111}	0	0	INCREMENTED
7	0	0	2	2	{0, 0 ¹ 0110}	0	0	ROM_OUT

Note_Player.v

Note Player Timing Diagram



Sine_Reader.v

Timing Diagram Sine_Reader (Step-size 5)

Cycle	Gen_next	Add_step	Address	Sample	Sample ready	State
0	1	0	0	0	0	Initial_state
1	0	5	0	0	0	Generate
2	0	0	0	0	0	Search
3	0	0	0	0	0	Wait
4	0	0	0	0	1	Set
5	1	0	0	0	0	Initial State
6	0	10	5	0	0	Gen
7	0	10	5	0	0	Search
8	0	10	5	0	0	Wait
9	0	10	5	ROM(5)	1	Set
10	1	5	10	ROM(5)	0	Initial_State