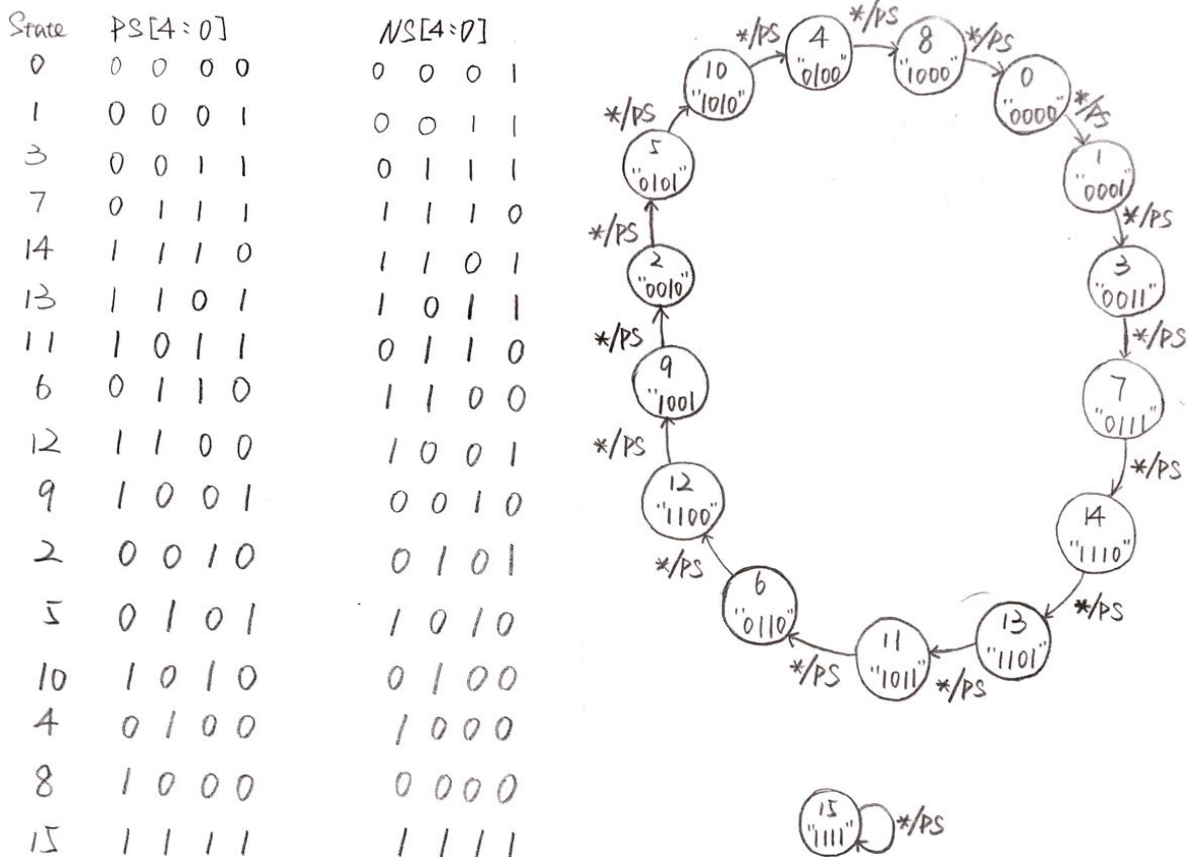


Lab7 Report

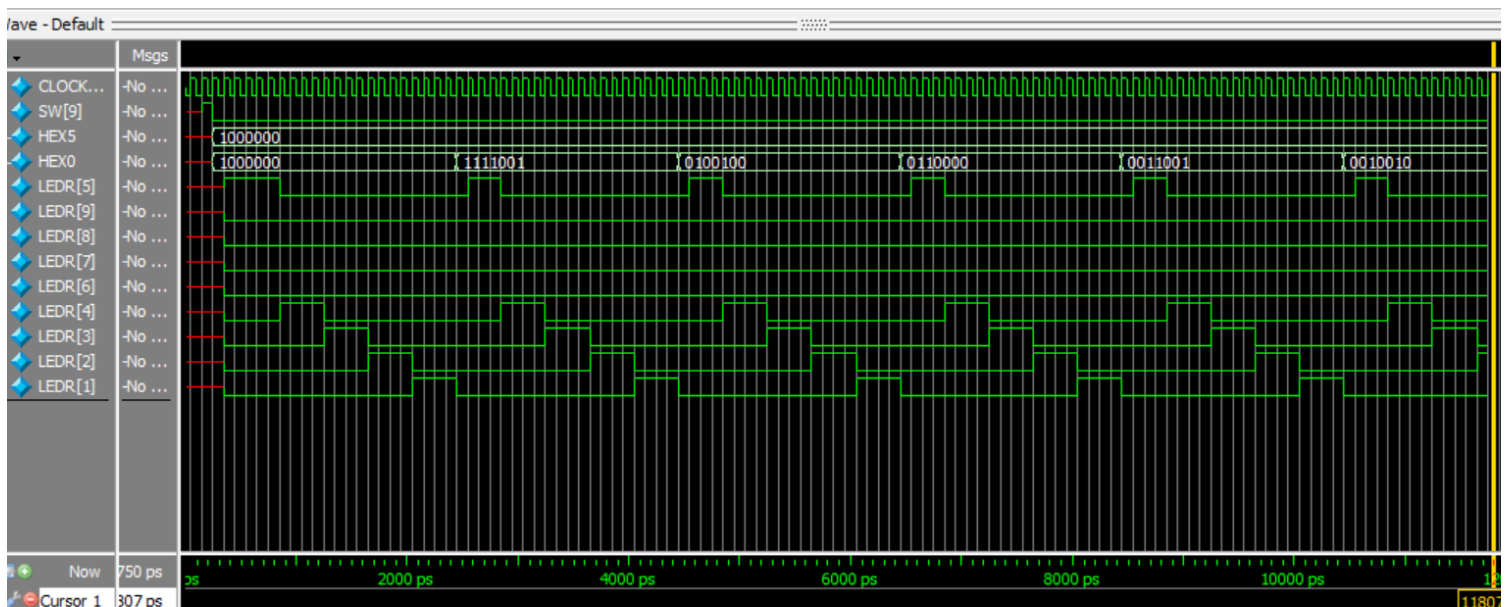
1. Demo:

<https://drive.google.com/file/d/1UiBXdUJq-TRaV8PSgkKHEPVEvNmBAPoe/view?usp=sharing>

2. A drawing of your state diagram derived from the 4-bit LFSR.



3. Screenshot of ModelSim simulation of your top-level entity showing the human player getting 5 points.



4. Screenshot of “Resource Utilization by Entity,” along with the computed size of your design.

Analysis & Synthesis Resource Utilization by Entity								
<<Filter>>								
	Compilation Hierarchy Node	Combinational ALUTs	Dedicated Logic Registers	Block Memory Bits	DSP Blocks	Pins	Virtual Pins	Full
1	▼ tugOfWar	64 (0)	45 (0)	0	0	67	0	tugOf
1	centerLight:l5]	2 (2)	1 (1)	0	0	0	0	tugOf
2	clock_divider:cdiv]	16 (16)	16 (16)	0	0	0	0	tugOf
3	comparator:com]	10 (10)	0 (0)	0	0	0	0	tugOf
4	▼ counter:scoreboard]	24 (10)	7 (7)	0	0	0	0	tugOf
1	count_display:c_player]	7 (7)	0 (0)	0	0	0	0	tugOf
2	count_display:h_player]	7 (7)	0 (0)	0	0	0	0	tugOf
5	lfsr:random_n]	1 (1)	10 (10)	0	0	0	0	tugOf
6	meta:m2]	1 (1)	2 (2)	0	0	0	0	tugOf
7	normalLight:l1]	1 (1)	1 (1)	0	0	0	0	tugOf
8	normalLight:l2]	1 (1)	1 (1)	0	0	0	0	tugOf
9	normalLight:l3]	1 (1)	1 (1)	0	0	0	0	tugOf
10	normalLight:l4]	1 (1)	1 (1)	0	0	0	0	tugOf
11	normalLight:l6]	1 (1)	1 (1)	0	0	0	0	tugOf
12	normalLight:l7]	1 (1)	1 (1)	0	0	0	0	tugOf
13	normalLight:l8]	1 (1)	1 (1)	0	0	0	0	tugOf
14	normalLight:l9]	1 (1)	1 (1)	0	0	0	0	tugOf
15	userInput:rightkey]	2 (2)	1 (1)	0	0	0	0	tugOf

$$\text{Size} = (64 + 45) - (16 + 16) = 77$$

5. Approximately how much time did you spend on this lab (including reading, planning, design, coding, debugging etc.)?

Reading and planning: 1.5h

Coding and debugging: 18h

Revising testbench and finalizing report: 3h

Total: 22.5h