



Diagram 1.2 – Logisim Implementation

Truth Table 1.1 – Signal to Counters

ON/OFF	RESET	SCANNER			COUNTERS							
		S2	S1	S0	C0	C1	C2	C3	C4	C5	C6	C7
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0	0	0	0	0	0
0	0	0	1	1	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	0	0	0	0	0
0	0	1	0	1	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	0	0	0	0	0	0
0	0	1	1	1	0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0	0	0	0	0	0
0	1	0	0	1	0	0	0	0	0	0	0	0
0	1	0	1	0	0	0	0	0	0	0	0	0
0	1	0	1	1	0	0	0	0	0	0	0	0
0	1	1	0	0	0	0	0	0	0	0	0	0
0	1	1	0	1	0	0	0	0	0	0	0	0
0	1	1	1	0	0	0	0	0	0	0	0	0
0	1	1	1	1	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	1	0	0	0	0	0	0	0	0
1	0	0	1	0	0	0	0	0	0	0	0	0
1	0	0	1	1	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0	0	0	0	0	0
1	0	1	0	1	0	0	0	0	0	0	0	0
1	0	1	1	0	0	0	0	0	0	0	0	0
1	0	1	1	1	0	0	0	0	0	0	0	0
1	1	0	0	0	1	0	0	0	0	0	0	0
1	1	0	0	1	0	1	0	0	0	0	0	0
1	1	0	1	0	0	0	1	0	0	0	0	0
1	1	0	1	1	0	0	0	1	0	0	0	0
1	1	1	0	0	0	0	0	0	1	0	0	0
1	1	1	0	1	0	0	0	0	0	1	0	0
1	1	1	1	0	0	0	0	0	0	0	1	0
1	1	1	1	1	0	0	0	0	0	0	0	1

Truth Table 1.2 – Counter States

Input	COUNTER					
	c1	c2	c3	c1+	c2+	c3+
0	0	0	0	0	0	0
0	0	0	1	0	0	1
0	0	1	0	0	1	0
0	0	1	1	0	1	1
0	1	0	0	1	0	0
0	1	0	1	1	0	1
0	1	1	0	1	1	0
0	1	1	1	1	1	1
1	0	0	0	0	0	1
1	0	0	1	0	1	0
1	0	1	0	0	1	1
1	0	1	1	1	0	0
1	1	0	0	1	0	1
1	1	0	1	1	1	0
1	1	1	0	1	1	1
1	1	1	1	1	1	1

Truth Table 1.3 – Count and LEDs

COUNTER			LEDs				
c1+	c2+	c3+	BLUE	GREEN	YELLOW	ORANGE	RED
0	0	0	0	1	0	0	0
0	0	1	0	0	1	0	0
0	1	0	0	0	1	0	0
0	1	1	0	0	1	0	0
1	0	0	0	0	0	1	0
1	0	1	0	0	0	1	0
1	1	0	0	0	0	1	0
1	1	1	1	0	0	0	1
1	1	1	1	0	0	0	1