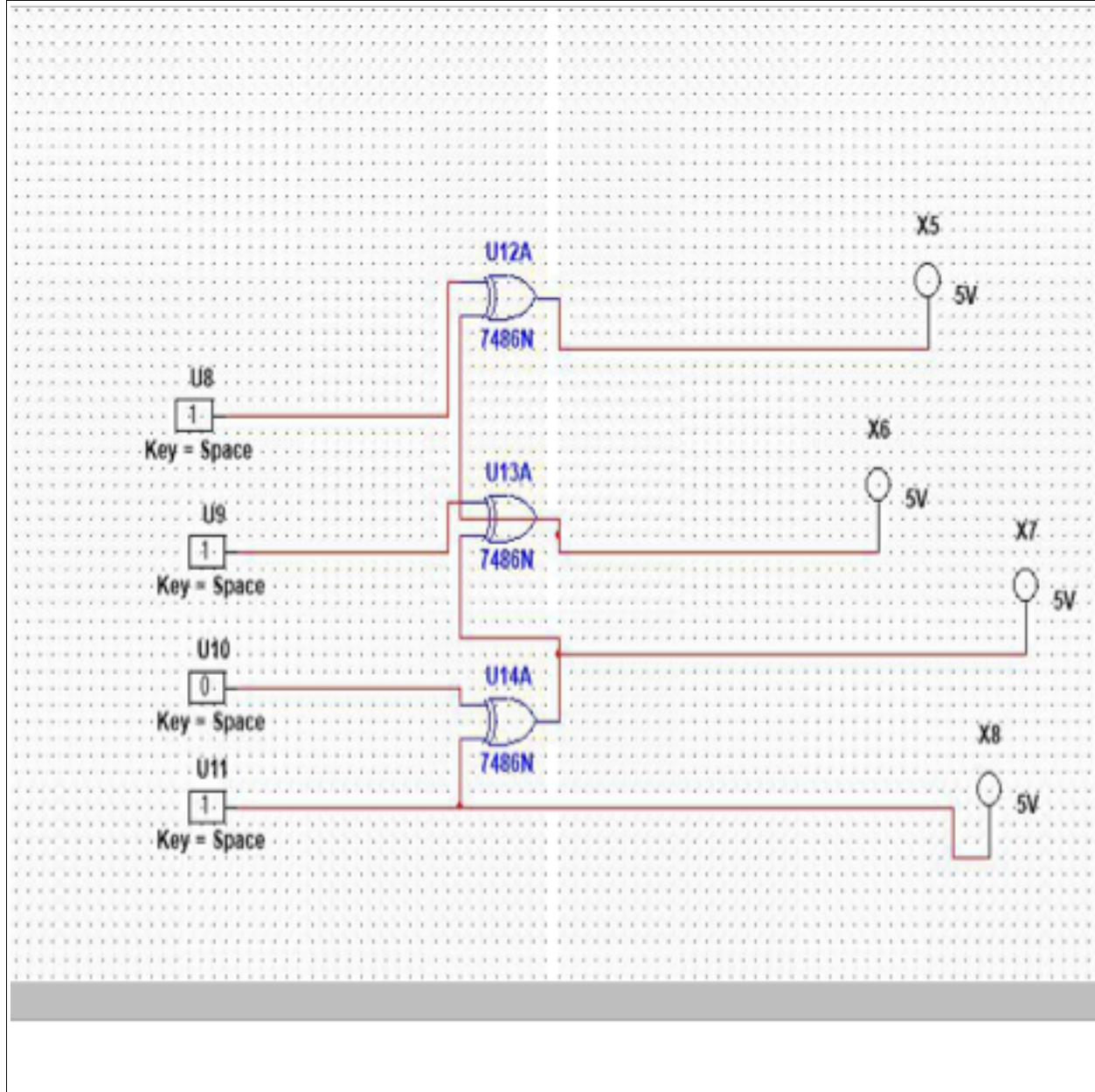


To Design and verify the truth table of code conversion from gray to binary code (4 bit) using basic Logic Gates

Observation Table:  
: Input Variable: A B C D Output Variable: B3 B2 B1 B0 LED ON: RED Light: Logic 1  
LED OFF: Green Light: Logic 0



		G1G0			
		00	01	11	10
G3G2	00	0	0	0	0
	01	0	0	0	0
	11	1	1	1	1
	10	1	1	1	1

**K-Map for B<sub>2</sub>:**

		G1G0			
		00	01	11	10
G3G2	00	0	0	0	0
	01	1	1	1	1
	11	0	0	0	0
	10	1	1	1	1

### K-Map for B<sub>1</sub>:

		G1G0			
		00	01	11	10
G3G2	00	0	0	1	1
	01	1	1	0	0
	11	0	0	1	1
	10	1	1	0	0

$$B_1 = G_3 \oplus G_2 \oplus G_1$$

### K-Map for B<sub>0</sub>:

---

		G1G0			
		00	01	11	10
G3G2	00	0	①	0	①
	01	①	0	①	0
	11	0	①	0	①
	10	①	0	①	0

---

**TRUTH TABLE:****| Gray Code to | Binary Code |**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>B3</b>	<b>B2</b>	<b>B1</b>	<b>B0</b>
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1
0	0	1	1	0	0	1	0
0	0	1	0	0	0	1	1
0	1	1	0	0	1	0	0
0	1	1	1	0	1	0	1
0	1	0	1	0	1	1	0
0	1	0	0	0	1	1	1
1	1	0	0	1	0	0	0
1	1	0	1	1	0	0	1
1	1	1	1	1	0	1	0
1	1	1	0	1	0	1	1
1	0	1	0	1	1	0	0
1	0	1	1	1	1	0	1
1	0	0	1	1	1	1	0
1	0	0	0	1	1	1	1