

DIGITAL SYSTEM

PRACTICUM REPORT 8 : FLIP-FLOP APPLICATION



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INFORMATION TECHNOLOGY

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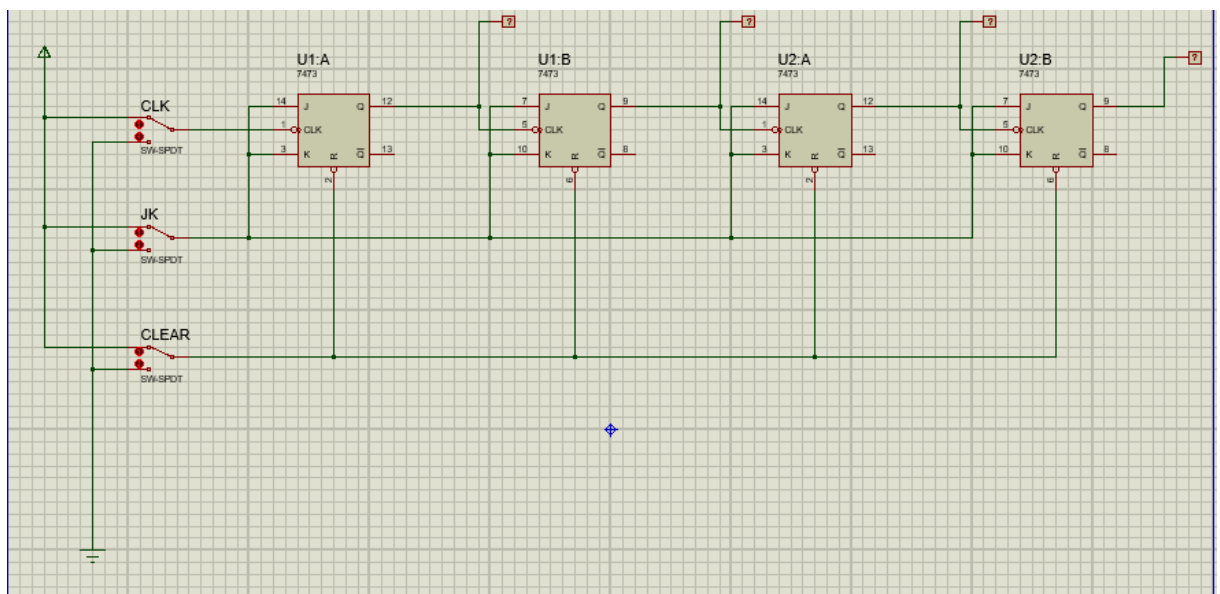
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Exercise 1

1. Make a JK-FF Counter



2. Table

	INPUT			OUTPUT			
	CLEAR	JK	CLK	A	B	C	D
1	1	1	0	0	0	0	0
2	1	1	1	0	0	0	0
3	1	1	0	0	0	0	1
4	1	1	1	0	0	0	1
5	1	1	0	0	0	1	0
6	1	1	1	0	0	1	0

7	1	1	0	0	0	1	1
8	1	1	1	0	0	1	1
9	1	1	0	0	1	0	0
10	1	1	1	0	1	0	0
11	1	1	0	0	1	0	1
12	1	1	1	0	1	0	1
13	1	1	0	0	1	1	0
14	1	1	1	0	1	1	0
15	1	0	0	0	1	1	0
16	1	0	1	0	1	1	0
17	1	1	0	0	1	1	1
18	1	1	1	0	1	1	1
19	0	1	0	0	0	0	0
20	0	1	1	0	0	0	0

3. FUNCTION

a) Switch CLK

Save biner

b) Switch JK

Main counter

c) Switch CLEAR

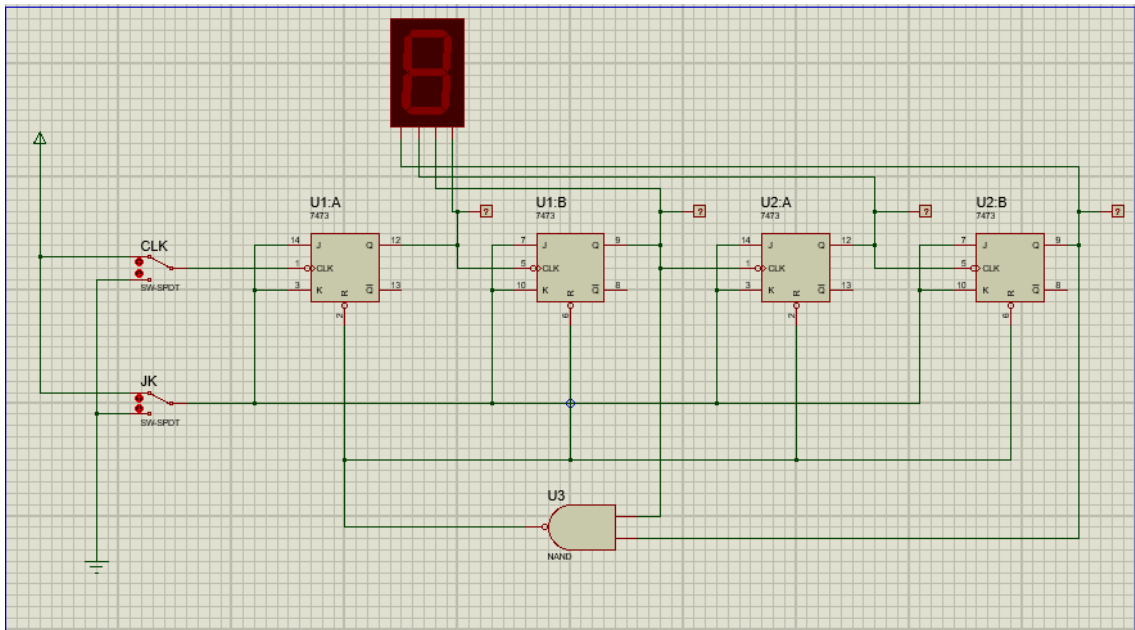
As reset

4. CONCLUSION

on the JK FF counter, the condition will change when $CLK = 0$

#Exercise 2

1. Make a combination of JK Flip-Flop



2. Table

	INPUT		OUTPUT			
	JK	CLK	A	B	C	D
1	1	0	0	0	0	0
2	1	1	0	0	0	0
3	1	0	0	0	0	1
4	1	1	0	0	0	1
5	1	0	0	0	1	0
6	1	1	0	0	1	0
7	1	0	0	0	1	1
8	1	1	0	0	1	1
9	1	0	0	1	0	0
10	1	1	0	1	0	0
11	1	0	0	1	0	1
12	1	1	0	1	0	1
13	1	0	0	1	1	0
14	1	1	0	1	1	0

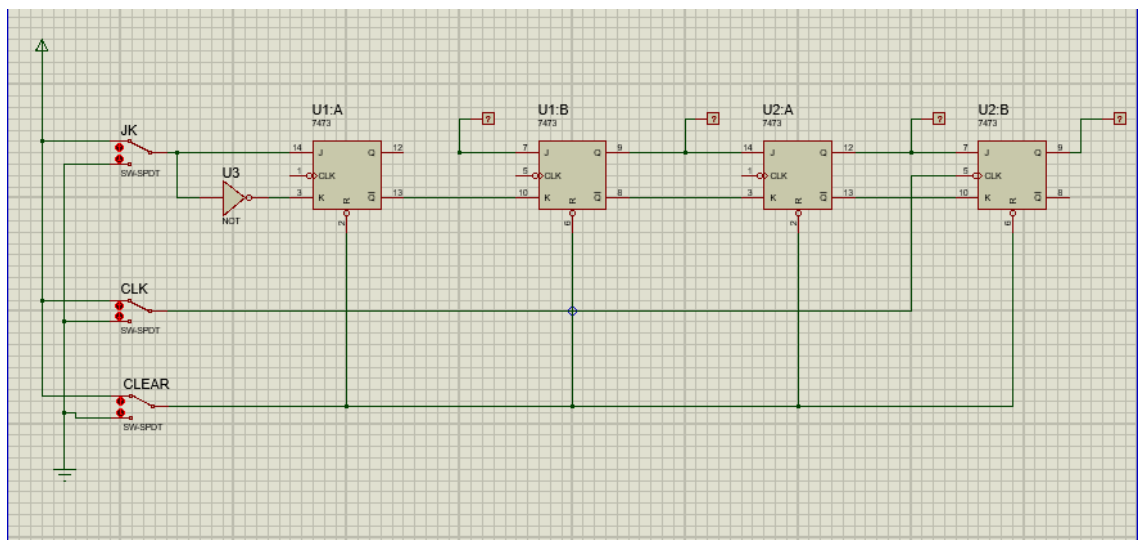
15	1	0	0	1	1	1
16	1	1	0	1	1	1
17	1	0	1	0	0	0
18	1	1	1	0	0	0
19	1	0	1	0	0	1
20	1	1	1	0	0	1
21	0	0	0	0	0	0
22	0	1	0	0	0	0
23	1	0	0	0	0	0
24	1	1	0	0	0	0

3. Conclusion

- when JK = 1 CLK = 1 it will store the previous variable
- when JK = 1 CLK = 0, the value changes to +1
- when JK = 0 CLK = 0 or 1 then the result is 0

#Exercise 3

1. Make a combination of Flip-flop JK



2. Table

	CLR	JK	CLK	A	B	C	D
1	0	X	-	0	0	0	0
2	1	1	-	0	0	0	0
3	1	1	1	0	0	0	1
4	1	1	2	0	0	1	1
5	1	1	3	0	1	1	1
6	1	0	4	1	1	1	0
7	1	0	5	1	1	0	0
8	1	0	6	1	0	0	0
9	1	0	7	0	0	0	0
10	1	0	8	0	0	0	0
11	1	1	9	0	0	0	1
12	1	0	10	0	0	1	0
13	1	0	11	0	1	0	0
14	1	0	12	1	0	0	0
15	1	0	13	0	0	0	0
16	1	0					

3. Conclusion

- CLEAR = RESET -> when clear = 0, then the value is 0
- Happens exchange of the value if click 2x
- For JK value = 1 and the KLOP in, then can calculate