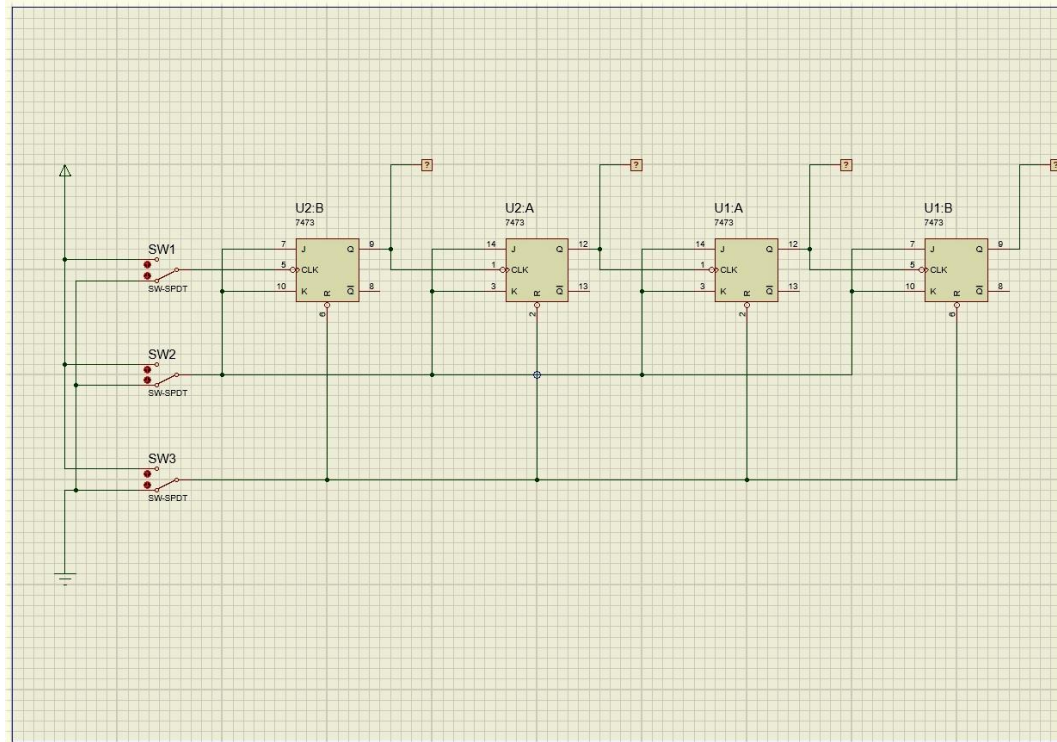


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## Experiment 1



Picture 1.1. JK flip-flop combination

### 1. Simulation 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

<b>13</b>	1	1	0	0	1	1	0
<b>14</b>	1	1	1	0	1	1	0
<b>15</b>	1	0	0	0	1	1	0
<b>16</b>	1	0	1	0	1	1	0
<b>17</b>	1	1	0	0	1	1	1
<b>18</b>	1	1	1	0	1	1	1
<b>19</b>	0	1	0	0	0	0	0
<b>20</b>	0	1	1	0	0	0	0

2. What is the function of

a. Switch CLK:

Answer: Functions to continue to the next binary number at the output.

b. Switch JK:

Answer: Functions as an increase in binary numbers if the value is 1, if the JK input is 0 then the output of the binary number is not forwarded or remains the last output.

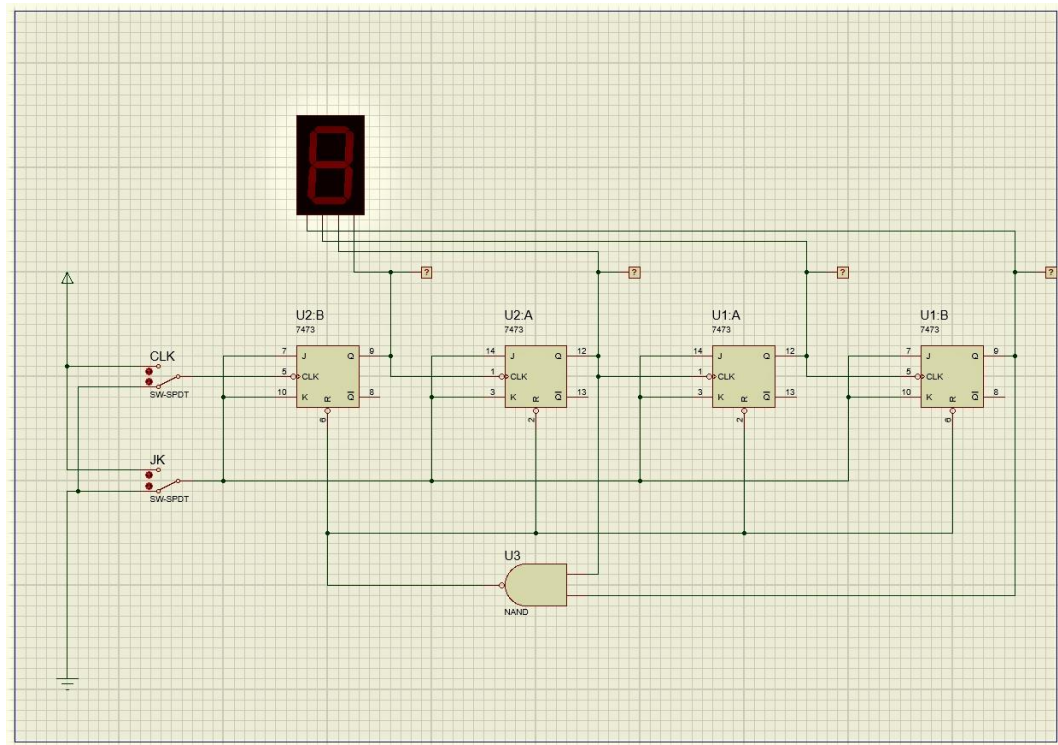
c. Switch CLEAR:

Answer: Functions to display the binary number output, if the CLEAR input is 0 then all the output results are 0

3. Conclusion

If the CLEAR input is 0 then all the output results are 0, if the JK input is 0 then the output of the binary number is not forwarded or remains the last output.

## Experiment 2



Picture 2.1. JK flip-flop combination

### 1. Simulation 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



Simulation table

	INPUT			OUTPUT			
	CLEAR	JK	CLK	A	B	C	D
<b>1</b>	0	X	-	0	0	0	0
<b>2</b>	1	1	-	0	0	0	0
<b>3</b>	1	1	1	0	0	0	0
<b>4</b>	1	1	2	0	0	0	1
<b>5</b>	1	1	3	0	1	1	1
<b>6</b>	1	0	4	0	1	1	1
<b>7</b>	1	0	5	1	1	1	0
<b>8</b>	1	0	6	1	0	0	0
<b>9</b>	1	0	7	1	0	0	0
<b>10</b>	1	0	8	0	0	0	0
<b>11</b>	1	1	9	0	0	0	1
<b>12</b>	1	0	10	0	0	1	1
<b>13</b>	1	0	11	0	1	1	0
<b>14</b>	1	0	12	1	1	0	0
<b>15</b>	1	0	13	1	0	0	0

## 2. Conclusion

If the CLK switch is not connected then all output results will produce 0. If the input value of JK 0 then the output will move to the output part that is located in front of it and the last output part changes to 0 until all output results are 0