

REG NO:19BCS0012

NAME:NITHISH.G

Name: G. Nithish
Reg. No: 19BCS0012

0 → 1 → 2 → 9

State Diagram

```

    graph TD
      0((0000)) --> 1((0001))
      1 --> 2((0010))
      2 --> 9((1001))
      9 --> 0
  
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Present State	Next State	J_A	K_A	J_B	K_B	J_C	K_C	J_D	K_D
0 A B C D 0 0 0 0	A B C D 0 0 0 1	0 X	0 X	0 X	0 X	1 X	1 X	1 X	1 X
1 0 0 0 1	0 0 1 0	0 X	0 X	1 X	1 X	X 1	X 1	X 1	X 1
2 0 0 1 0	1 0 0 1	1 X	0 X	X 1	0 X	0 X	0 X	X 1	X 1
9 1 0 0 1	0 0 0 0	X 1	0 X	0 X	0 X	0 X	0 X	X 1	X 1

K-Map - J_A

AB \ CD	00	01	11	10
00	0	0	1	1
01	0	0	1	1
11	1	1	1	1
10	1	1	1	1

K-Map J_B

AB \ CD	00	01	11	10
00	0	0	1	1
01	0	0	1	1
11	1	1	1	1
10	1	1	1	1

$J_B = 0$

$J_A = 1$

K-Map J_C

AB \ CD	00	01	11	10
00	0	1	1	1
01	0	1	1	1
11	1	1	1	1
10	1	1	1	1

K-Map J_D

AB \ CD	00	01	11	10
00	0	1	1	1
01	0	1	1	1
11	1	1	1	1
10	1	1	1	1

$J_D = 1$

$J_C = \bar{A}D$

K_A

AB \ CD	00	01	11	10
00	x	x	x	x
01	x	x	x	x
11	x	x	x	x
10	x	1	x	x

$K_A = 1$

K_B

AB \ CD	00	01	11	10
00	x	x	x	x
01	x	x	x	x
11	x	x	x	x
10	x	x	x	x

$K_B = 1$

$K_C = 1$

AB \ CD	00	01	11	10
00	x	x	x	1
01	x	x	x	x
11	x	x	x	x
10	x	x	x	x

K_D

AB \ CD	00	01	11	10
00	x	1	x	x
01	x	x	x	x
11	x	x	x	x
10	x	1	x	x

$K_D = 1$

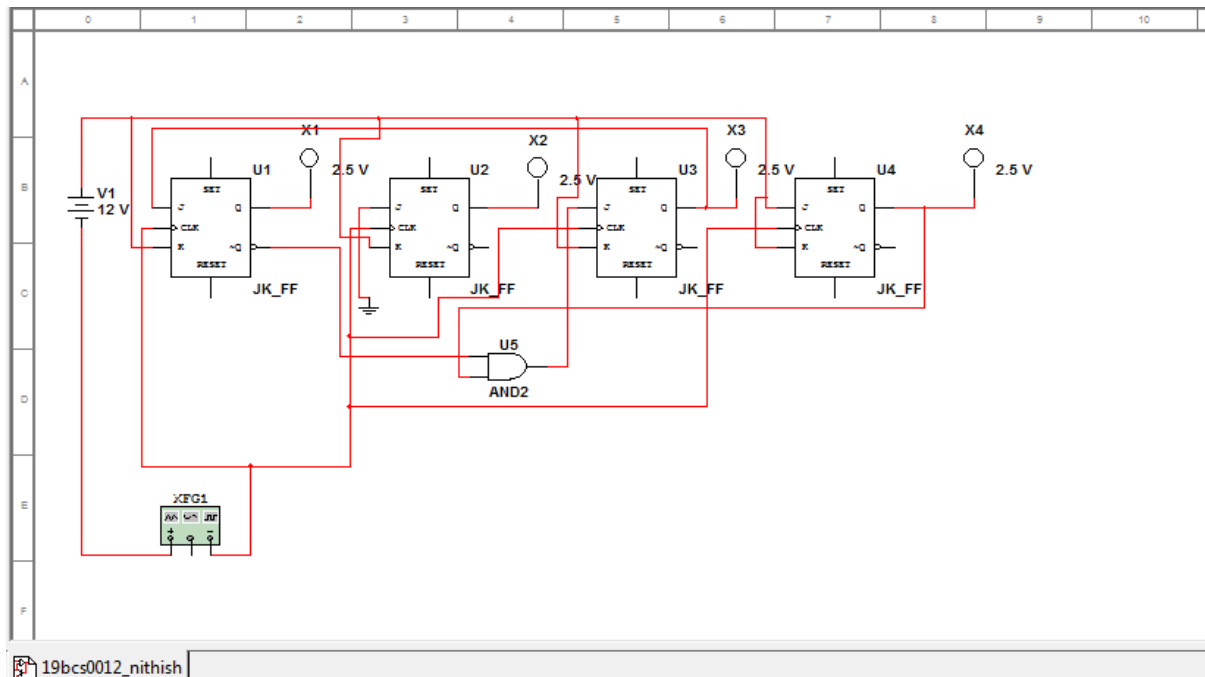
$K_A = J_A = C$ $K_B = 1$
 $J_B = 0$ $K_C = 1$
 $J_C = \bar{A}D$ $K_D = 1$
 $J_D = 1$

0
1
3
9

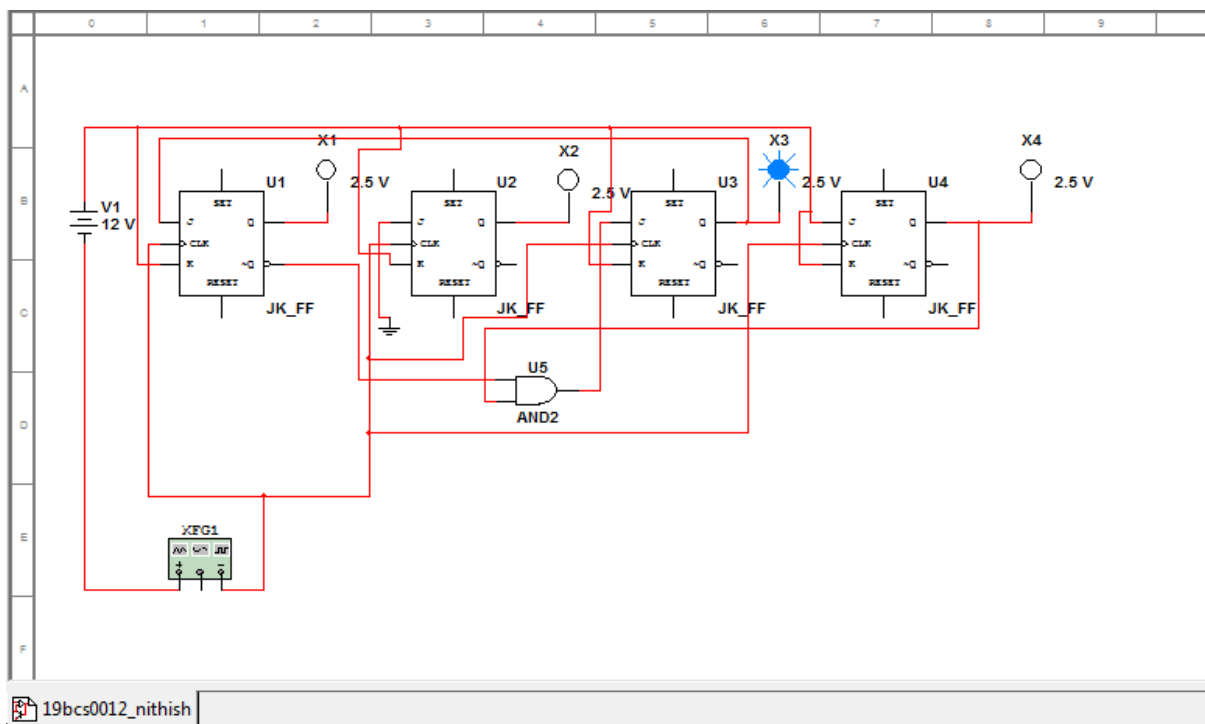
AB
00
01
11
10

AB
00
01
11
10

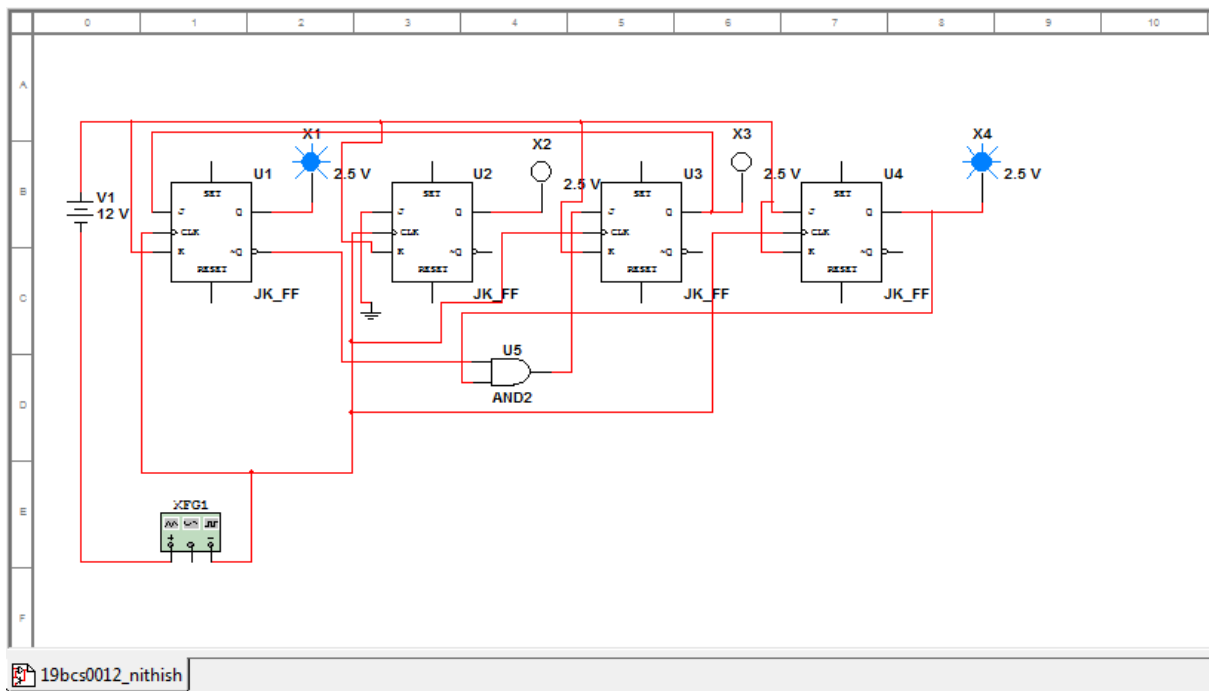
0000



0010



1001



0001

