

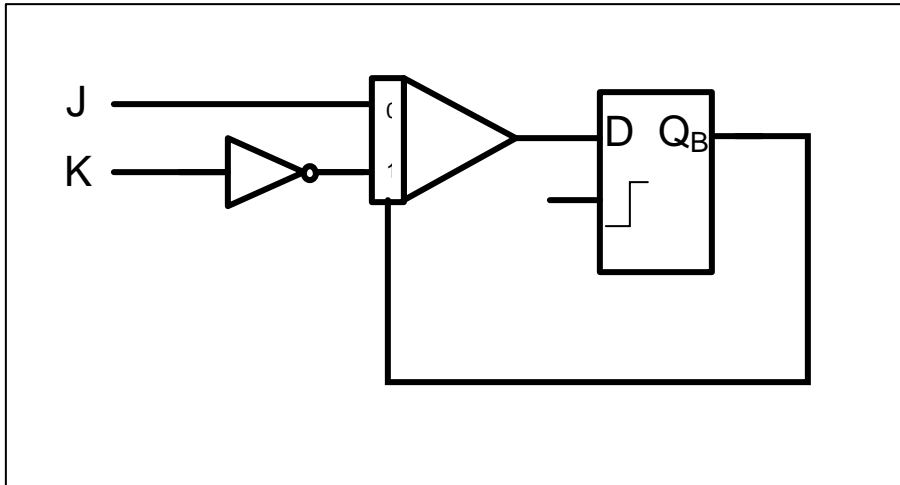
Homework 7 – due 6/10

5-2) Construct a JK flip-flop using a D flip-flop, a 2-to-1 line multiplexer and an inverter.

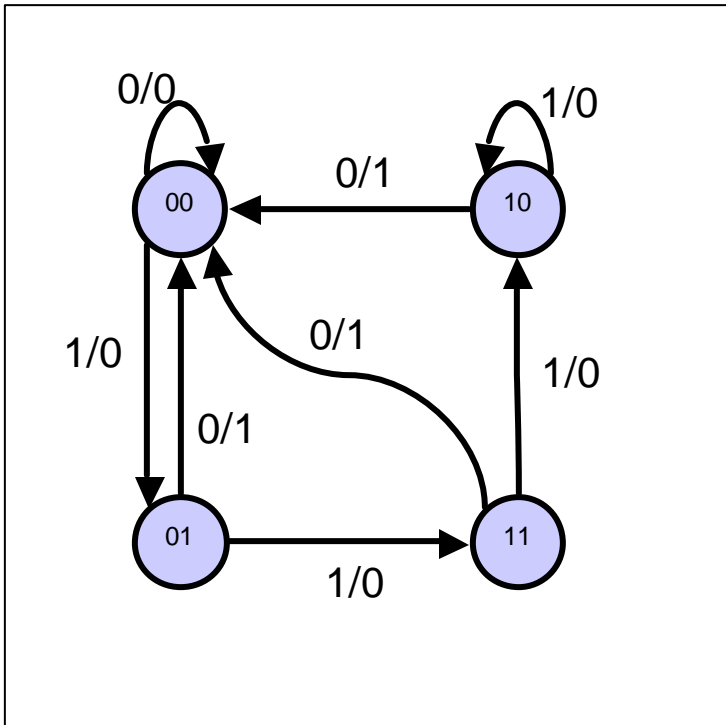
State	Input		Next state
Q	J	K	D
0	0	0	0
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	0

Q\JK	00	01	11	10
0	0	0	1	1
1	1	0	0	1

$$D = JQ' + K'Q$$



5-11) Starting from state 00 in the state diagram of Fig. 5-16, determine the state transitions and output sequence that will be generated when an input sequence of 010110111011110 is applied



State	Input	Next state	Output
00	0	00	0
00	1	01	0
01	0	00	1
00	1	01	0
01	1	11	0
11	0	00	1
00	1	01	0
01	1	11	0
11	1	10	0
10	0	00	1
00	1	01	0
01	1	11	0
11	1	10	0
10	1	10	0
10	0	00	1