

Willis Allstead

CPE 201L

Section: 1102

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LAB 10: Display Driver

Work:

Lab 10 Display Driver

part 1: 7 segment display

	A	B	C	D	E	F	G	H
0	1	1	1	1	1	1	0	0
1	0	1	1	0	0	0	0	0
2	0	1	0	1	1	0	1	0
3	0	1	1	1	1	0	0	1
4	1	0	0	1	1	0	1	1
5	1	0	1	1	0	1	1	0
6	1	1	0	1	0	1	1	1
7	1	1	1	1	0	0	0	0

$D_0 = A'C' + AC + AB$
 $= B + A \odot C$

$D_1 = B'C' + A' + BC$
 $= A' + B \odot C$

$D_2 = A' + A + C$
 $= C$

$D_3 = A'C' + A'B + AB'C + BC'$

$D_4 = A'C' + BC'$

$D_5 = B'C' + AB'$

$D_6 = AB' + A'B + BC'$
 $= A \oplus B + BC'$

$D_7 = 0$

Part 2: JK - FlipFlop

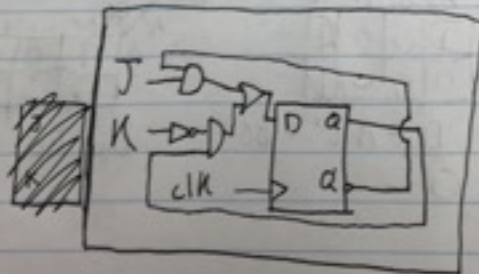
J	K	Q(t)	Q(t+1)	D
0	0	0	0	0
0	0	1	1	1
0	1	0	0	0
0	1	1	0	0
1	0	0	1	1
1	0	1	1	1
1	1	0	1	1
1	1	1	0	0

D

J	K	Q(t)	Q(t+1)
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

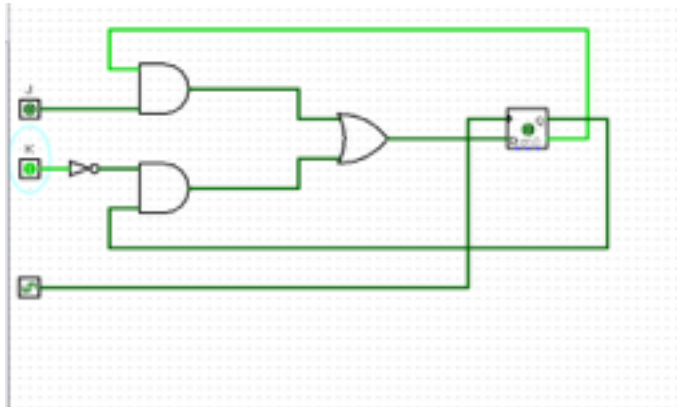
$$D = JQ' + K'Q \leftarrow \text{Logical Expression}$$

Circuit:

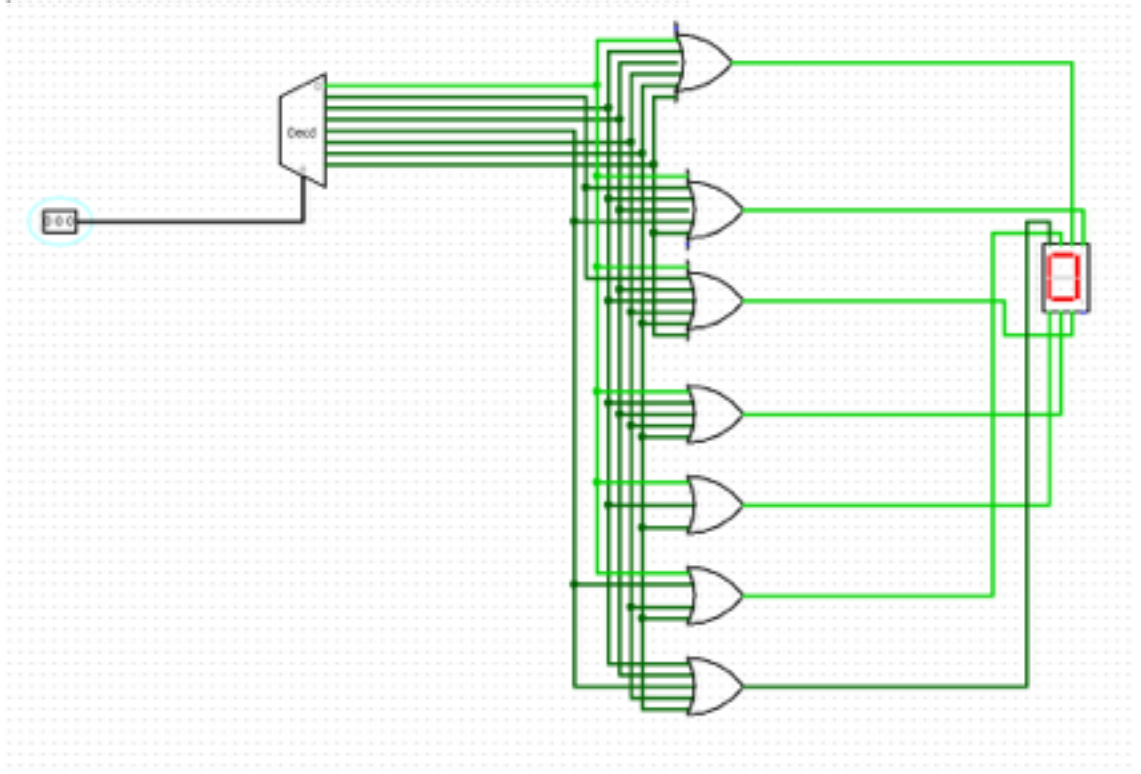


in Logism:

JK Flip-flop:



7-segment display:



On breadboard:

