MODUL 6

DIGITAL SYSTEM

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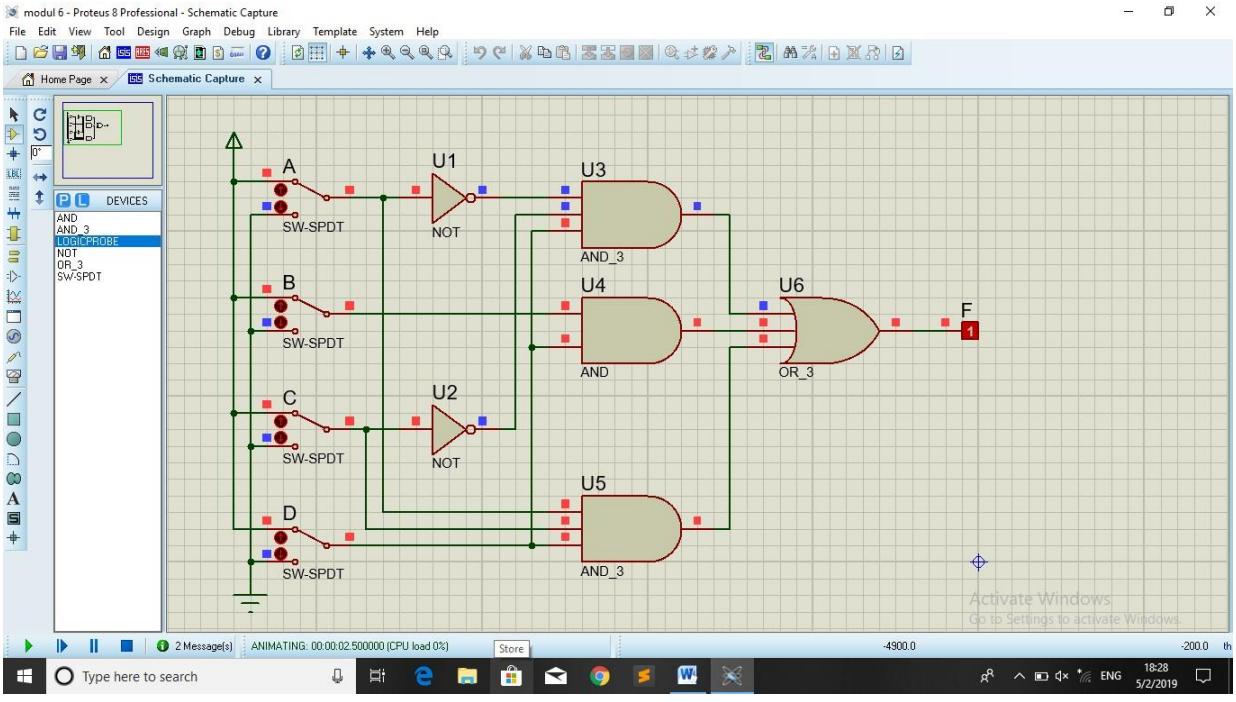
1. **Trial 1**

1. Make the logic gate combination based on the following K map!

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

2. Boolean function: **F = A'C'D + BD + ACD**
3. Make the logic gates based on your Boolean function!



Trial 2

1. Make the logic gate combination based on the following K map!

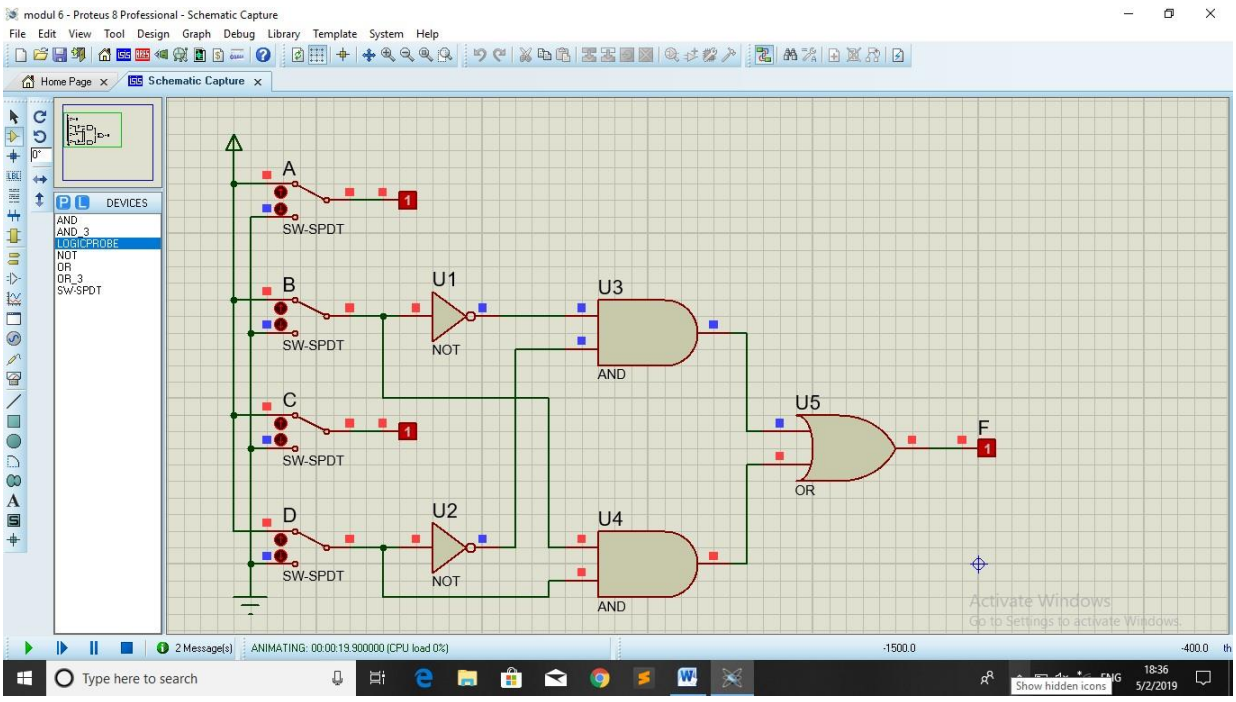
		AB			
		00	01	11	10
CD	00	1	0	0	1
	01	0	1	1	0
	11	0	1	1	0
	10	1	0	0	1

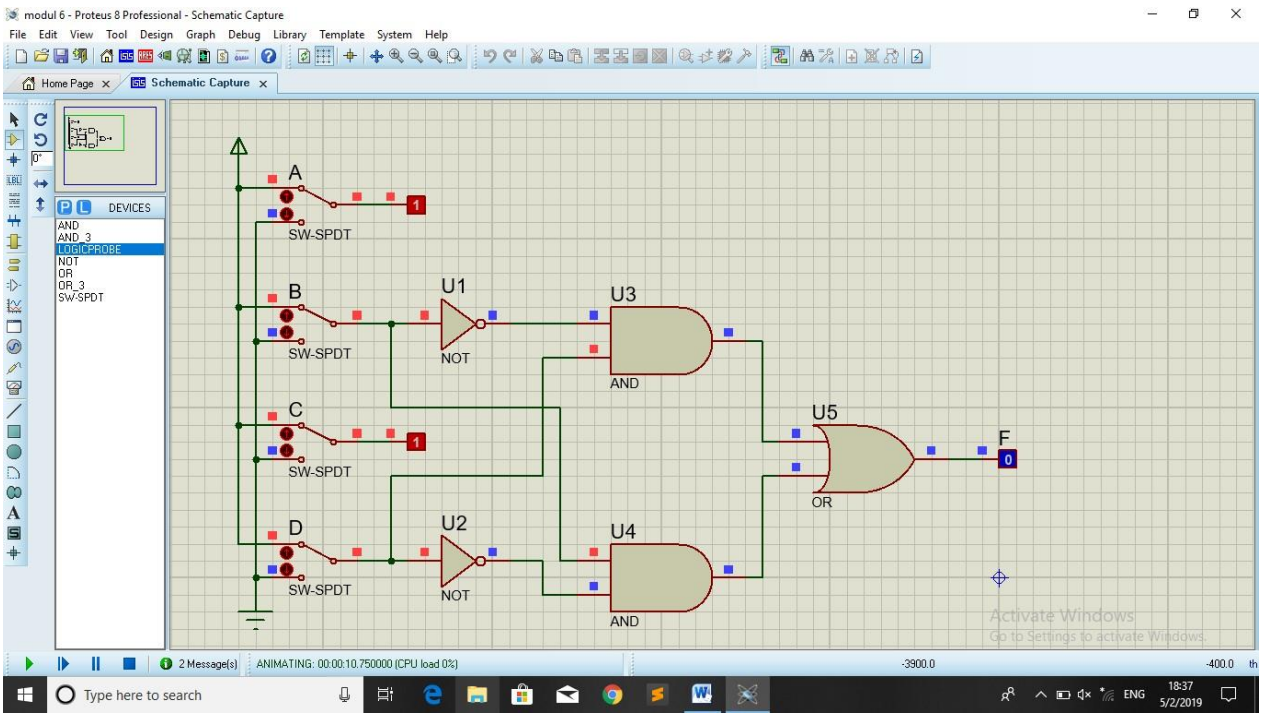
2. Boolean function:

   F = B'D' + BD *(AND-OR)*

   F = B'D + BD' *(OR-AND)*

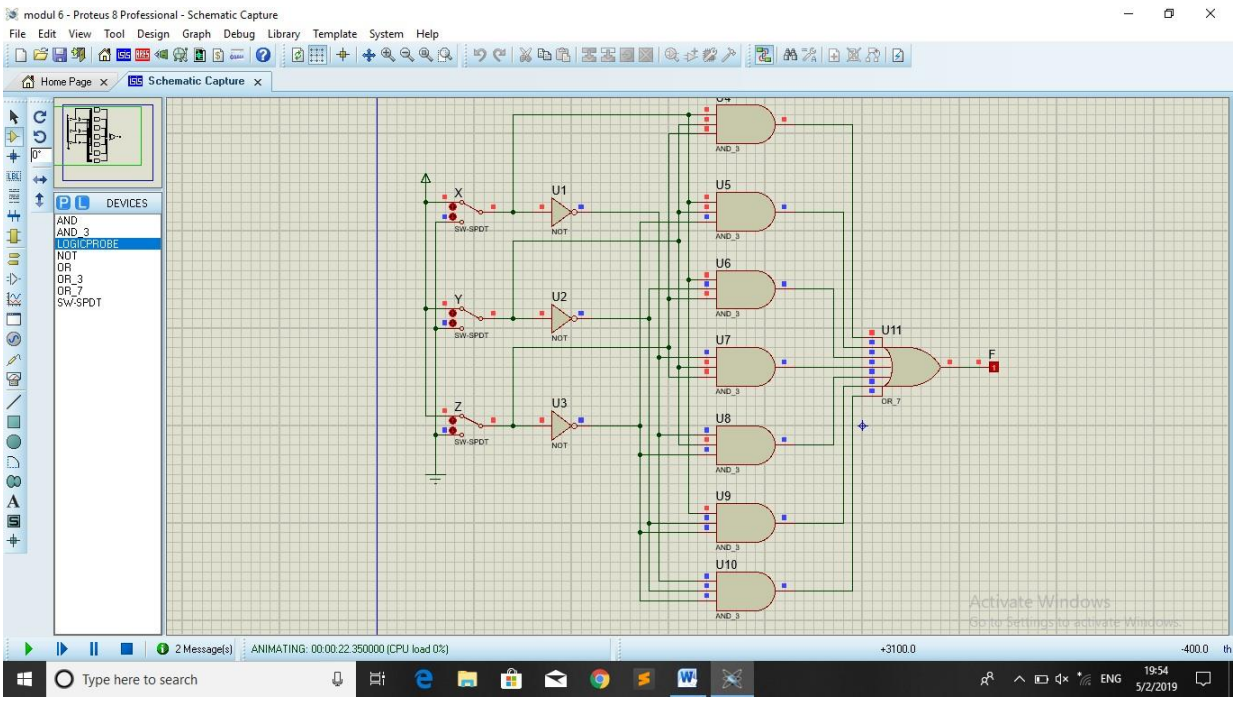
3. Make the logic gates based on your Boolean function!





Trial 3

1. Boolean function: **F = XYZ + XYZ' + XY'Z + X'YZ + X'YZ' + XY'Z' + X'Y'Z'**

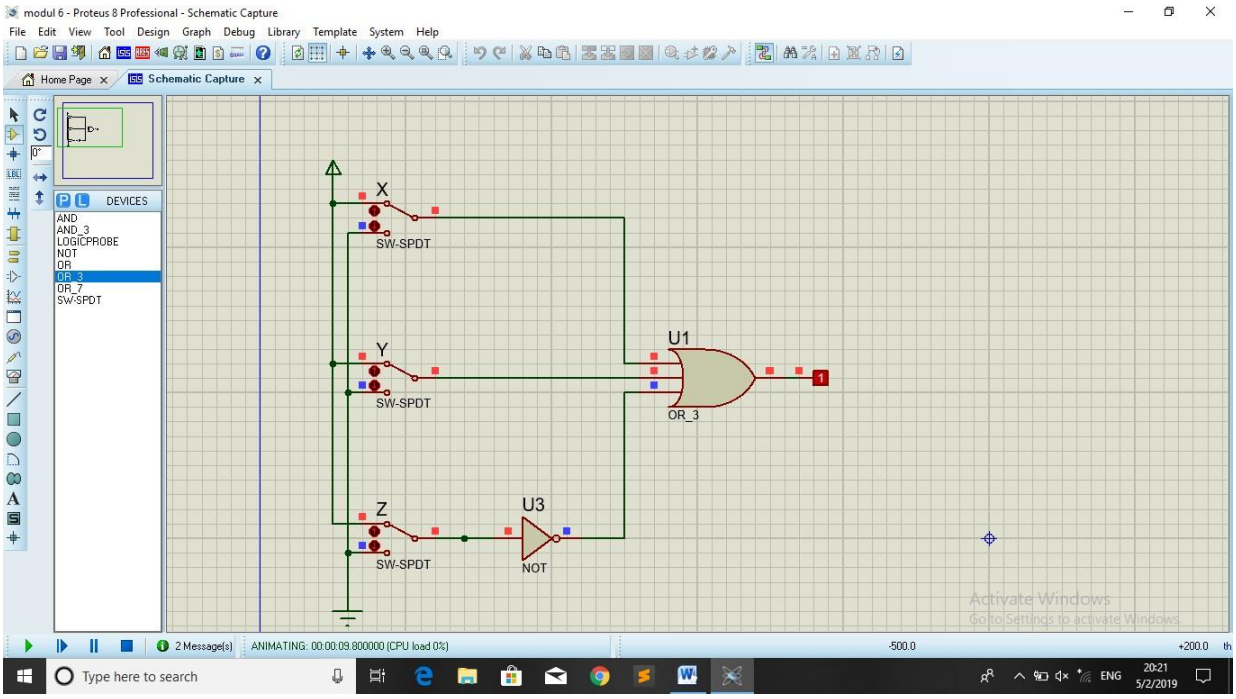


2. Based on the Boolean function, fill the blank in the following K map!

		XY			
		00	01	11	10
Z	0	1	1	1	1
	1	0	1	1	1

3. Simplify the Boolean function: **F = X + Y + Z'**

4. Draw the logic gates based on your Boolean function!

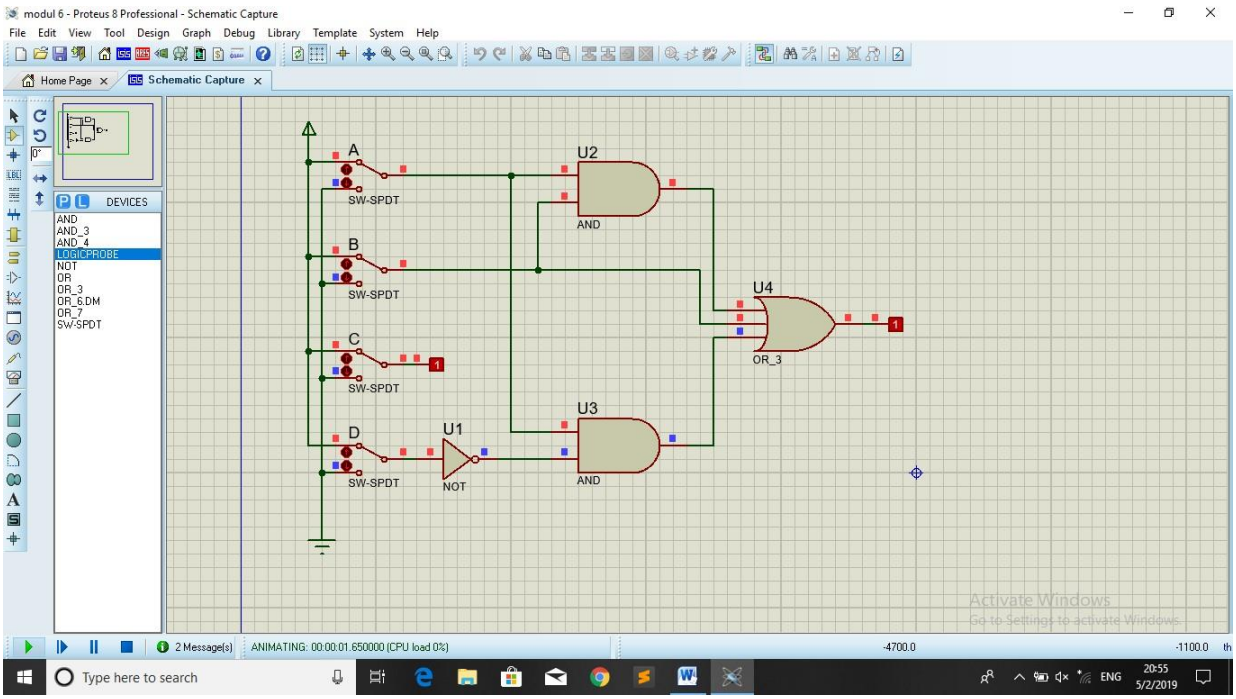


Trial 4

1. Boolean function: **F = AD' + ABC + ABC' + BCD + BC'D' + AB'CD'**
2. Based on the Boolean function, fill the blank in the following K map!

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

3. Simplify the Boolean function: **F = AB + AD' + B**
4. Draw the logic gates based on your Boolean function!



Trial 5

1. Boolean function table.

A	B	C	D	F
0	0	0	0	1
1	0	0	0	0
0	1	0	0	0
1	1	0	0	1
0	0	1	0	1
1	0	1	0	1
0	1	1	0	0
1	1	1	0	0
0	0	0	1	1
1	0	0	1	1
0	1	0	1	0
1	1	0	1	1
0	0	1	1	1
1	0	1	1	0
0	1	1	1	1
1	1	1	1	0

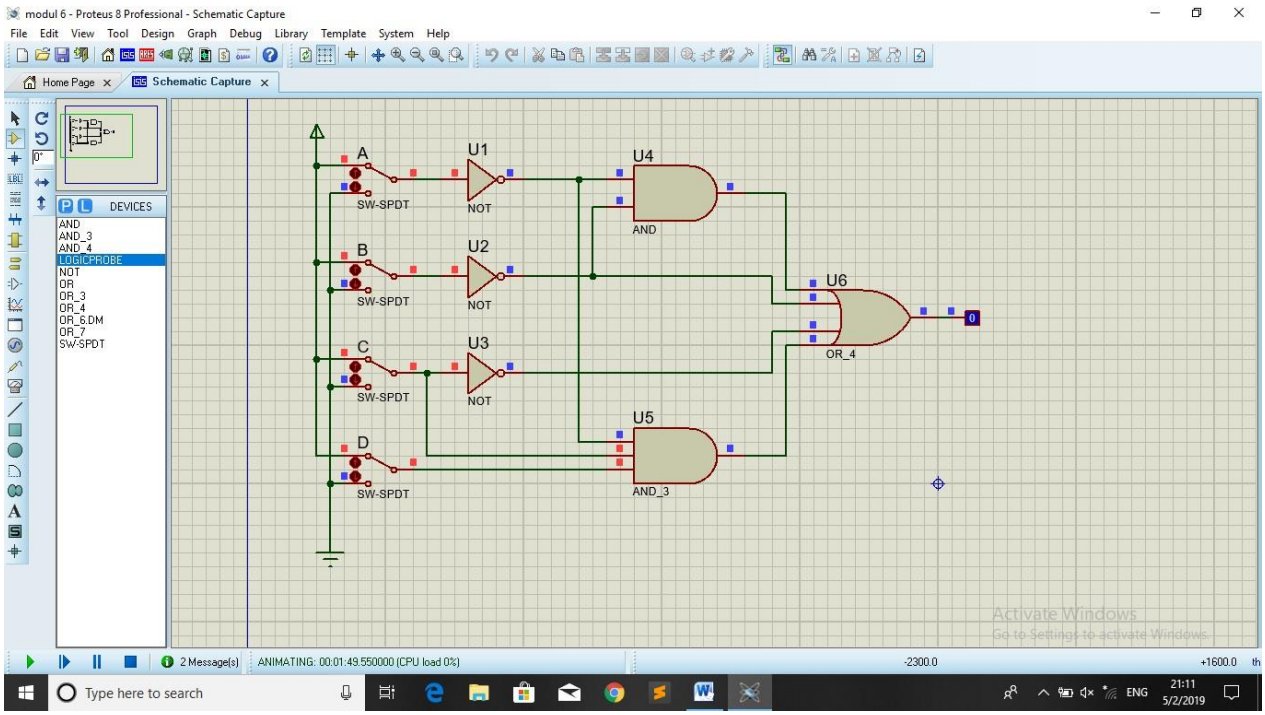
2. Based on the table, fill the blank on the following K map!

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

3. Simplify the Boolean function!

   F = A'B' + B' + A'CD + C'

4. Draw the logic gates based on your Boolean function!



Is all the two combinations give the same result? **NO**