

Digital systems

Practicum 6



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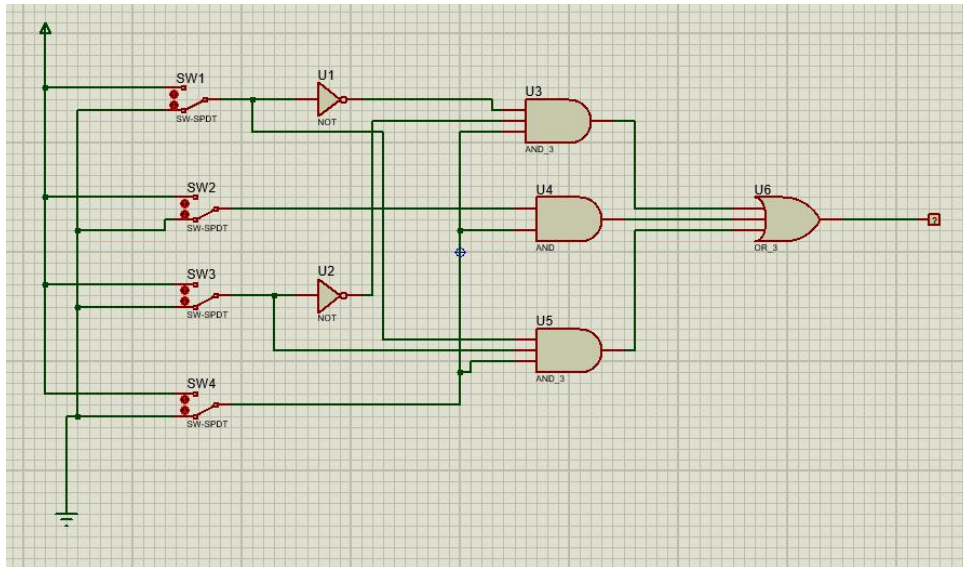
Percobaan 1

1. Karnaugh 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. Fungsi boolean : $F = A' C' D + BD + ACD$

3. Logic gate combination :



Percobaan 2

1. Karnaugh map

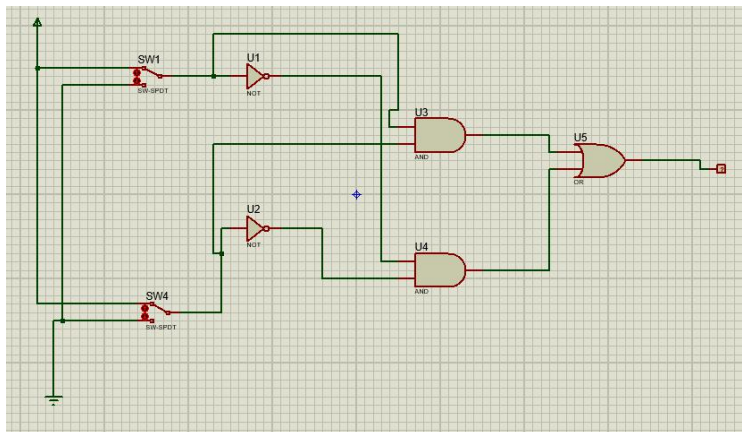
		AB			
		00	01	11	10
CD	00	1	0	0	1
	01	0	1	1	0
	11	0	1	1	0
	10	1	0	0	1

2. Fungsi boolean:

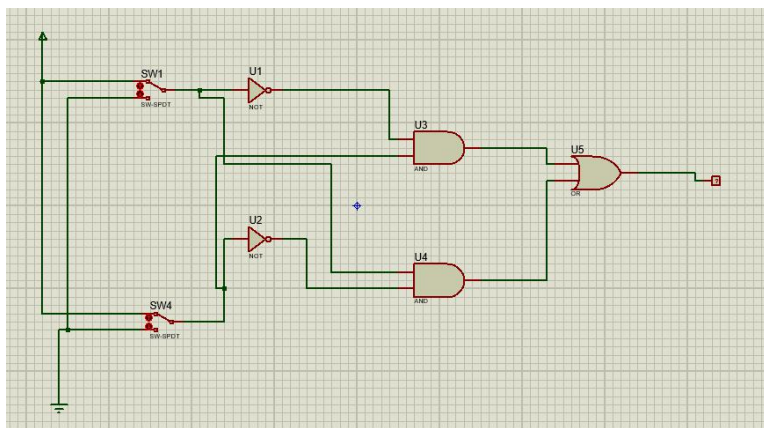
$$F = BD + B' D' \quad (\text{AND-OR})$$

$$F = B' D + BD' \quad (\text{OR-AND})$$

3. Logic gate combination



2.1 (AND-OR)



2.2 (OR-AND)

Percobaan 3

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

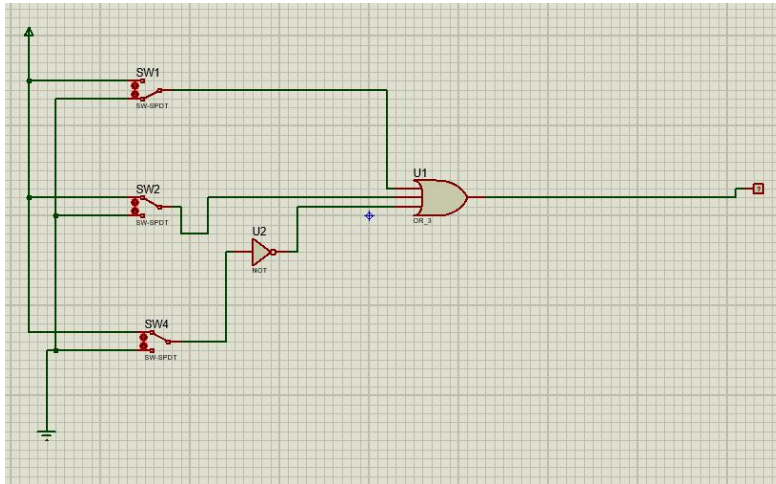
2. Karnaugh map:

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

3. Simplification of boolean function

$$F = Z' + Y + X$$

4. Logic gate combination



Percobaan 4

1. Boolean function

$$F = AD' + ABC + ABC' + BCD + BC'D' + AB'CD'$$

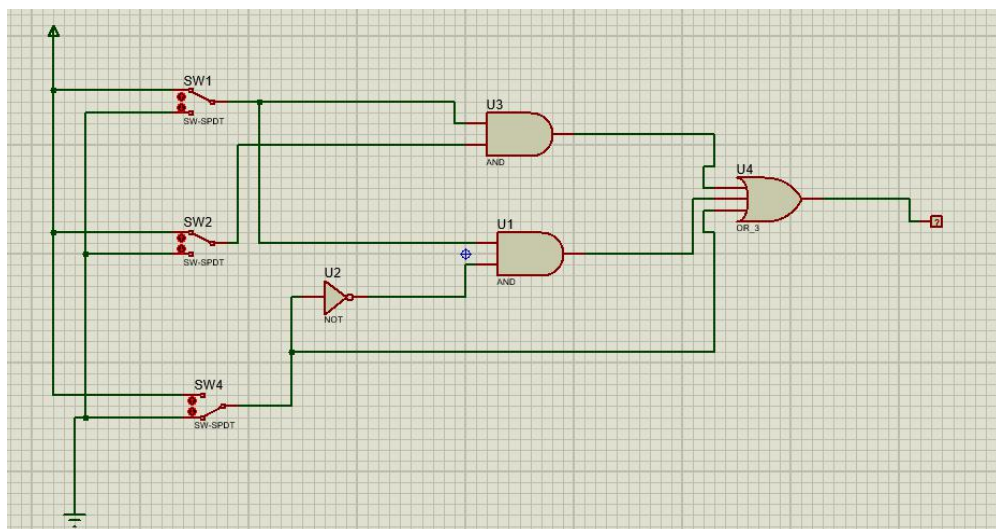
2. Karnaugh map

		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. Simplification of boolean function:

$$F = AB + AD' + B$$

4. Logic gate combination



Percobaan 5

1. Table of boolean function

A	B	C	D	E
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. Karnaugh 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. Simplification of boolean function

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

4. Logic gate

