PRACTICUM SISDIG

MODUL 4

DIGITAL SYSTEM

By :

Donny Rizal Adhi Pratama

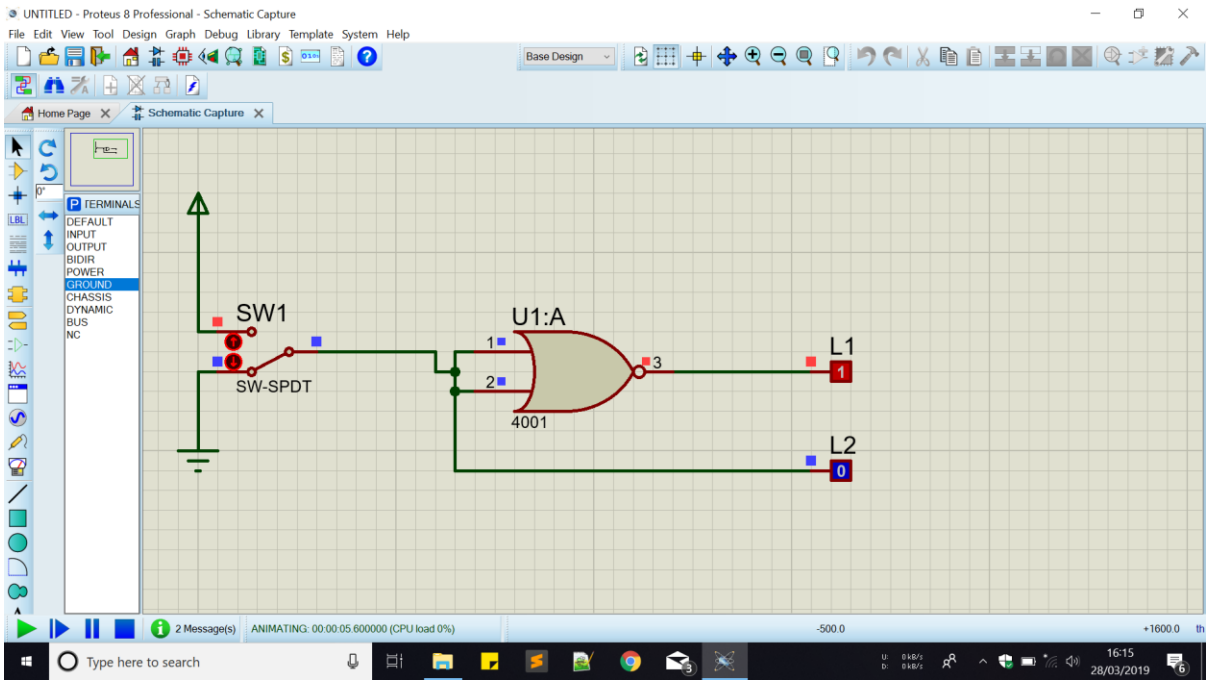
L200183161

INFORMATION TECHNOLOGY

FACULTY OF COMMUNICATION AND INFORMATIC

MUHAMMADIYAH UNIVERSITY OF SURAKARTA

Experiment 1



Picture 1.1 Gate 1 Variation

2. Boolean Function : $\mathbf{L1 = \overline{L2 + L2} = \overline{L2}}$

3. Truth Table :

SW1	SW2	L1
0	0	1
1	1	0

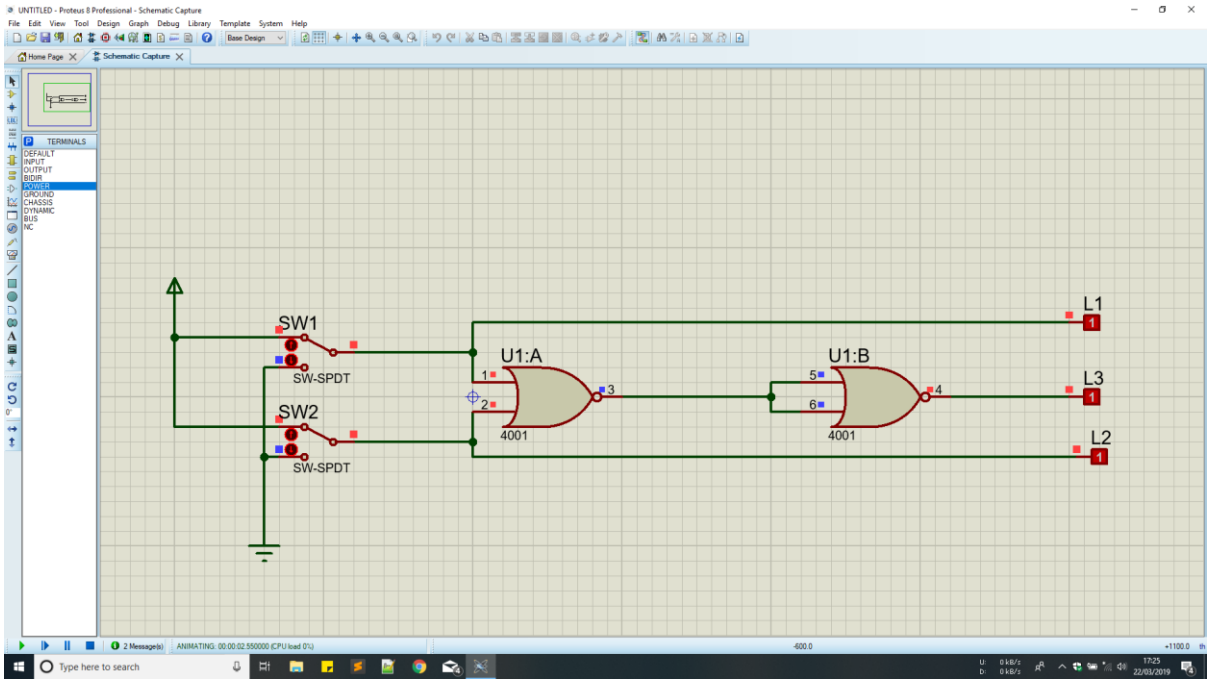
4. Time Diagram

L2	
L1	

5. Conclusion

NOR Gate in the picture above create a logic gate from NOT

Experiment 2.



Picture 2.1 Gate 2 Variation

2. Boolean Function : $L3 = \overline{L1 + L2} = L1 + L2$

3. Truth Table

SW1	SW2	L1	L2	L3
0	0	0	0	0
1	0	1	0	1
0	1	0	1	1
1	1	1	1	1

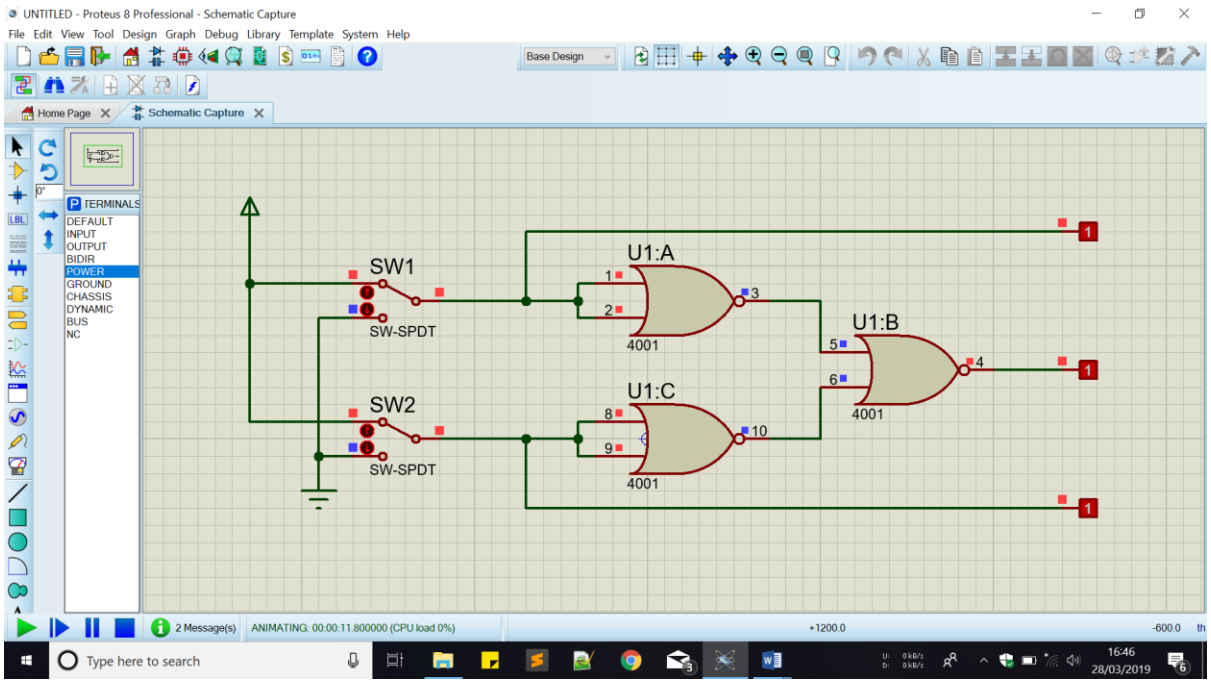
4. Time Diagram

L1				
L2				
L3				

5. Conclusion

NOR Gate in the picture above create a logic from Gate Or

Experiment 3

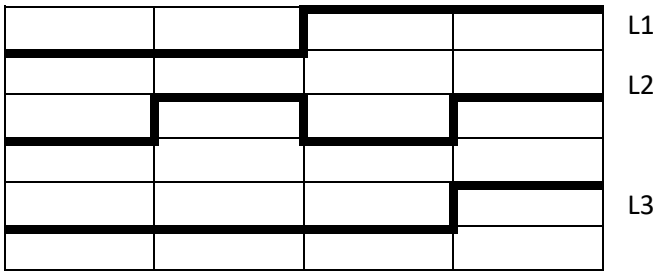


2. Boolean Function : **L3 = $\overline{L1}$ + $\overline{L2}$ = L1 + L2**

3. Truth Table

SW1	SW2	L1	L2	L3
0	0	0	0	0
0	1	0	1	0
1	0	1	0	0
1	1	1	1	1

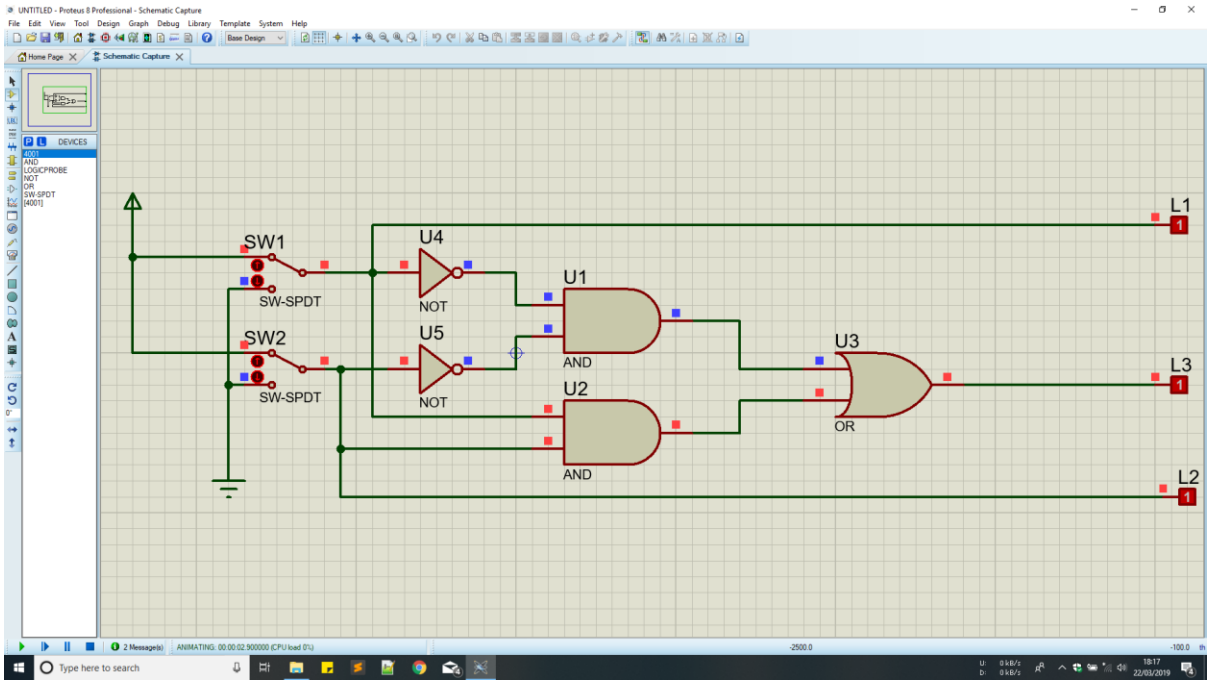
4. Time Diagram



5. Conclusion

Gate NOR in the picture above create logic from Gate AND

Experiment 4



2. Boolean Function : L3 = $\overline{L1\ L2}$ + L1L2 = $\overline{L1 \oplus L2}$

3. Truth Table

SW1	SW2	L1	L2	L3
0	0	0	0	1
0	1	0	1	0
1	0	1	0	0
1	1	1	1	1

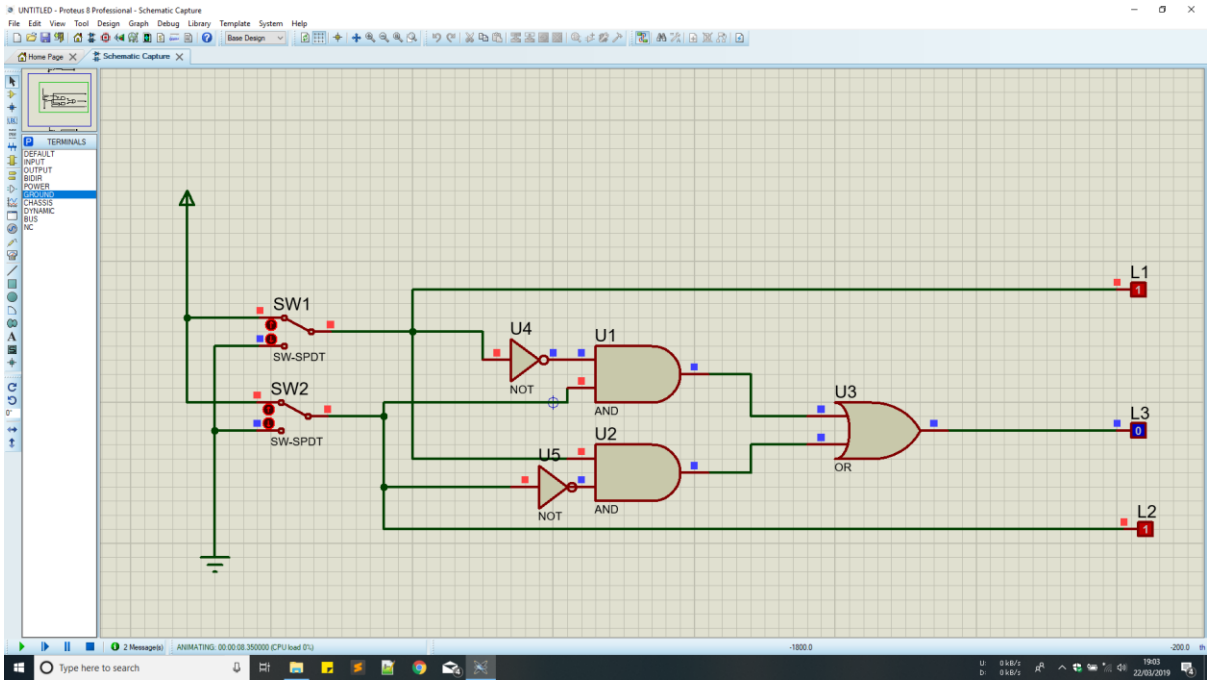
4. Time Diagram

				L1
				L2
				L3

5. Conclusion

Combination Gate in the picture above create logic from Gate XNORR

Experiment 5



2. Boolean Function : L3 = $\overline{L1}$L2 + L1$\overline{L2}$

3. Truth Table

SW1	SW2	L1	L2	L3
0	0	0	0	0
0	1	0	1	1
1	0	1	0	1
1	1	1	1	0

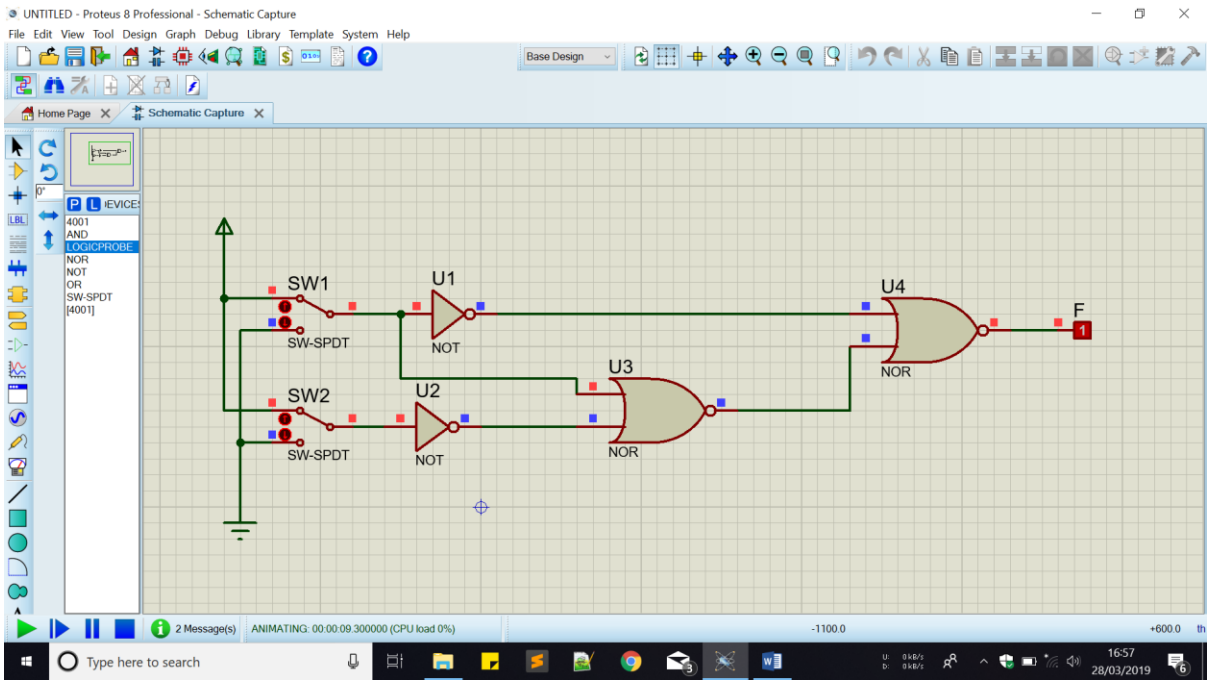
4. Time Diagram

				L1
				L2
				L3

5. Conclusion

Combinatio Gate in the picture above create logic from Gate XOR

Additional Assignment :



F $= \overline{\overline{X} + (X + Y)}$

$= \overline{\overline{X} + (\overline{X} + Y)}$

$= X + (X + Y)$

$= x + \overline{Y}$

a. Truth Table

X	Y	F
0	0	0
0	1	0
1	9	1
1	1	1

b. Time Diagram

Additional Experiment 2