

# **DIGITAL SYSTEM**

## **PRACTICUM REPORT 10 : DECODER IMPLEMENTATION**



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**2019**

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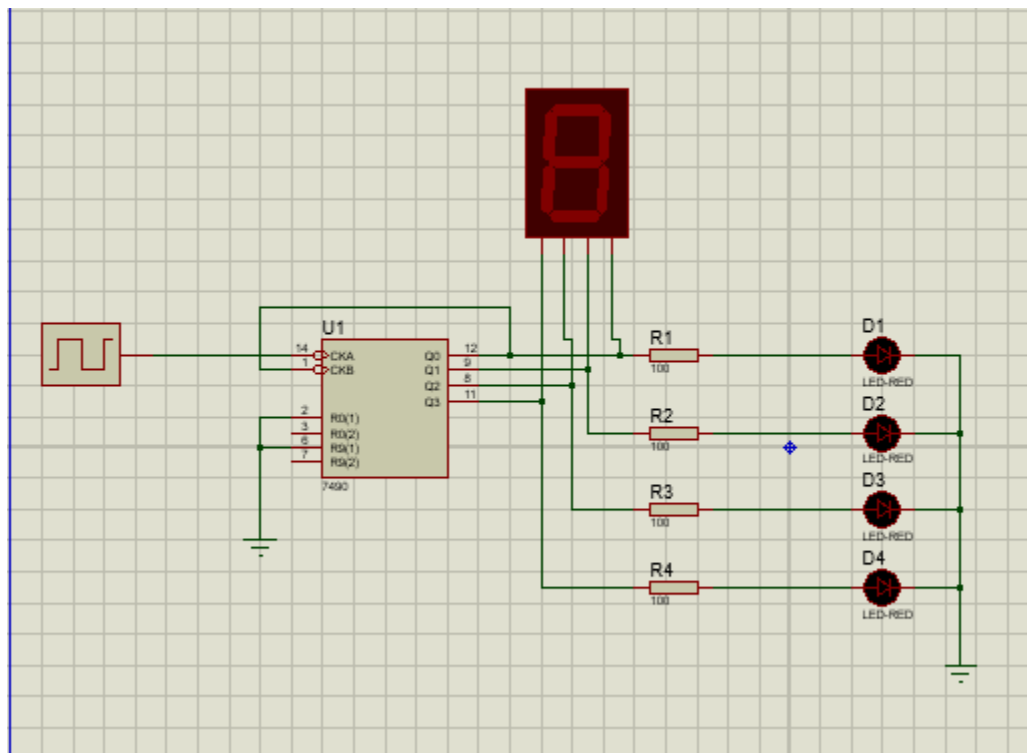
**CLASS** : X

**ASSISTANT** : SALSA SASMITA MUKTI

**DATE OF PRACTICUM** : Friday, May 24<sup>th</sup> 2019

**# exercise 1 (CLOCK COUNTER)**

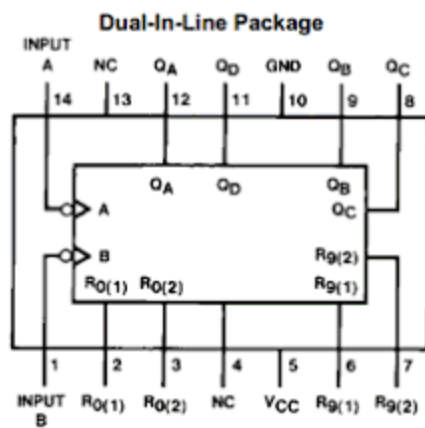
**a) Make a counter**



b) tabel

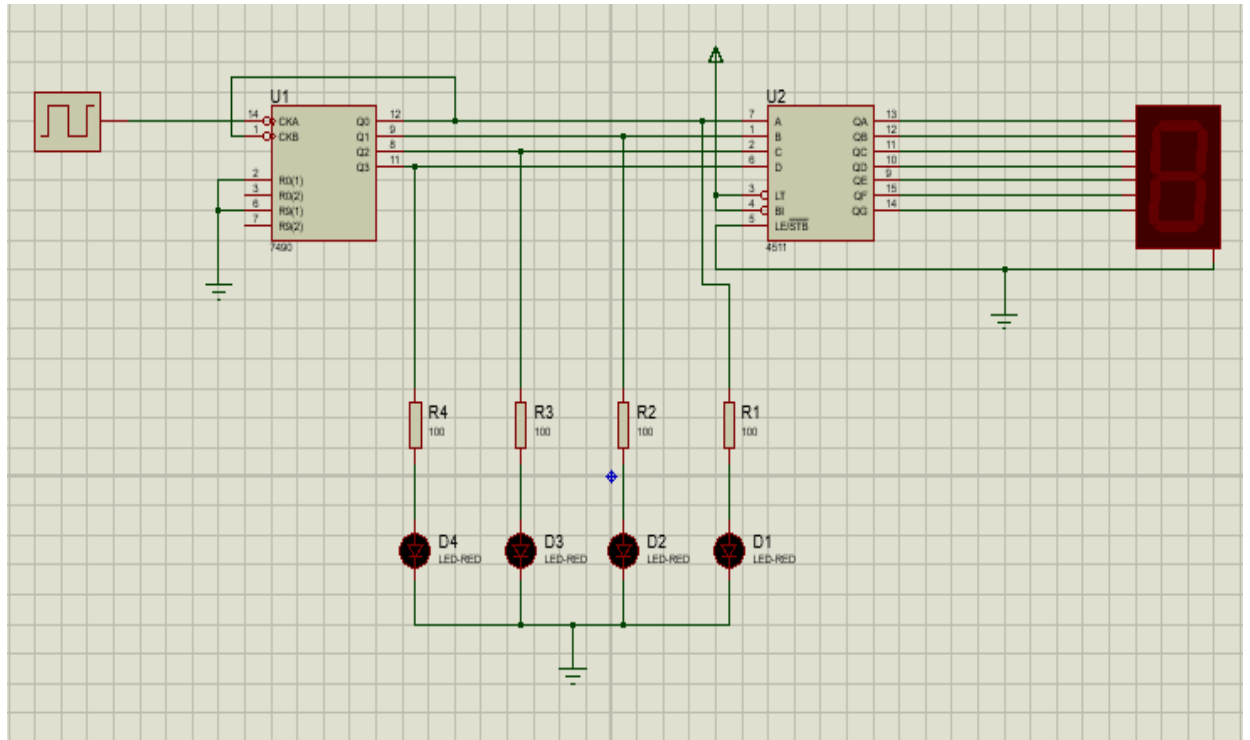
Input Clock	Output LED				Output Seven Segment
	D1	D2	D3	D4	
1	0	0	0	0	0
2	1	0	0	0	1
3	0	1	0	0	2
4	1	1	0	0	3
5	0	0	1	0	4
6	1	0	1	0	5
7	0	1	1	0	6
8	1	1	1	0	7
9	0	0	0	1	8
10	1	0	0	1	9
11	0	0	0	0	0

c) datasheet IC 7490



## # exercise 2

a) Make a combination circuit



b) tabel

Input Clock	Output LED				Output Seven Segment
	D1	D2	D3	D4	
1	0	0	0	0	0
2	1	0	0	0	1
3	0	1	0	0	2
4	1	1	0	0	3
5	0	0	1	0	4
6	1	0	1	0	5
7	0	1	1	0	6
8	1	1	1	0	7
9	0	0	0	1	8
10	1	0	0	1	9
11	0	0	0	0	0

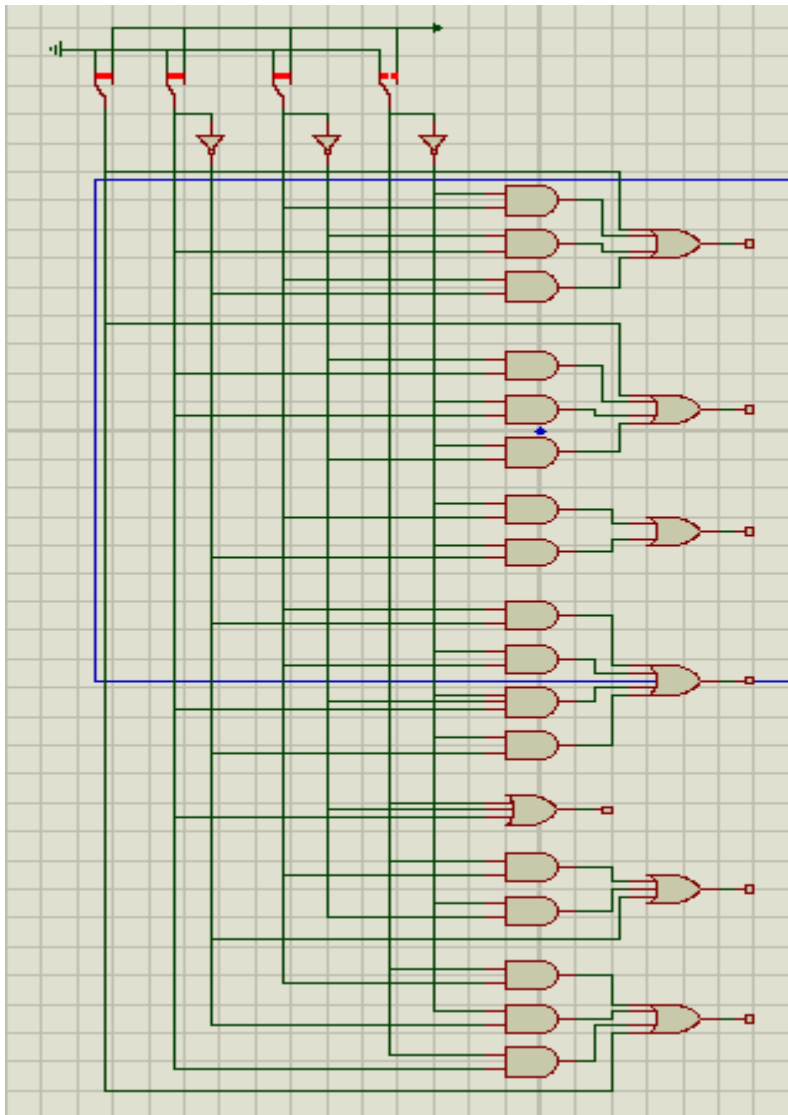
**c) comparison between the first and second experiments**

this experiment have difference in output seven segment 6 and 9. In experiment 2, output seven segment 6 looks like letter b (led a was low), and output seven segment 9 looks like letter q (led d was low). But, in experiment 1 everything looks normal.

**d) Is 7seg-BCD same as BCD-7segment decoder?**

*YES*

# exercise 3



INPUT				OUTPUT							Display
D	C	B	A	a	b	c	d	e	f	g	Output
L	L	L	L	H	H	H	H	H	H	L	0
L	L	L	H	L	H	H	L	L	L	L	1
L	L	H	L	H	H	L	H	H	L	H	2
L	L	H	H	H	H	H	H	L	L	H	3
L	H	L	L	L	H	H	L	L	H	H	4
L	H	L	H	L	L	H	H	L	H	H	5
L	H	H	L	H	L	H	H	H	H	H	6
L	H	H	H	H	H	H	L	L	L	L	7
H	L	L	L	H	H	H	H	H	H	H	8
H	L	L	H	H	H	H	L	L	H	H	9
X	X	X	X	H	H	H	H	H	H	H	8

### Comparison between truth table and set of BCD-7 segment

- The output that shows in the BCD-7 segment decoder circuit have same value that matches with truth table