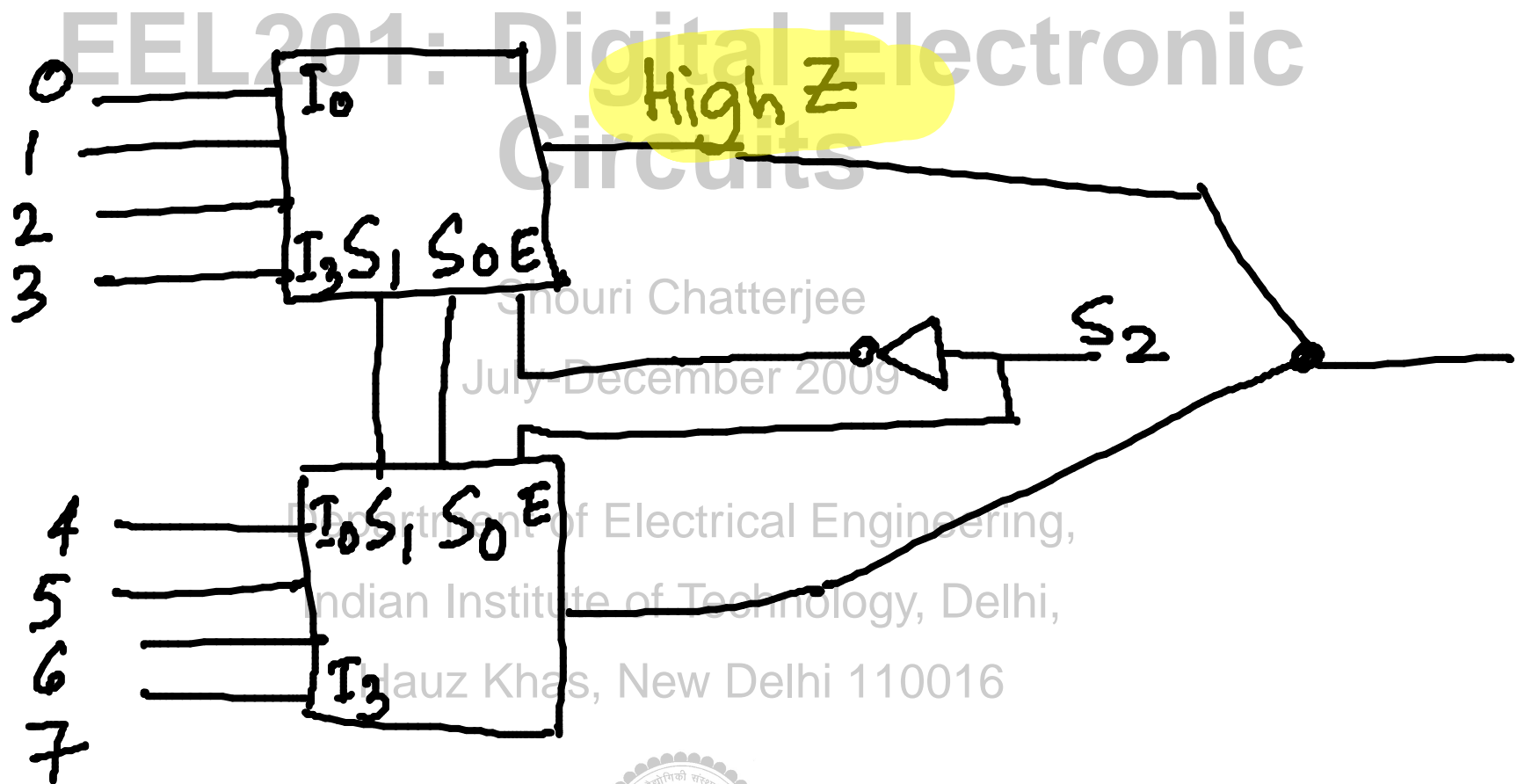


# 8:1 MUX using two 4:1 MUXs



$$f = \sum 0, 3, 5, 6, 7, 8, 12, 15 + d \sum 2, 9, 11, 13$$

0 1's	0000 ✓	— 000 0 0 — 0	
1 1's	1000 ✓	1 — 00 ✓	1 — 0 —
	0010 ✓	1 00 — ✓	0 — 1 —
2 1's	0011 ✓	0 0 1 — ✓	
	0101 ✓	0 — 1 0 ✓	
	0110 ✓	0 — 1 1 ✓	
	1100 ✓	— 0 1 1 ✓	— — 1 1
	1001 ✓	— 1 0 1 ✓	— 1 — 1
	0111 ✓	0 1 — 1 ✓	
3 1's	1011 ✓	0 1 1 — ✓	
	1101 ✓	1 1 0 — ✓	
	1111 ✓	1 1 0 1 ✓	1 — — 1
4 1's	1111 ✓	1 — 0 1 ✓	



# EEL201: Digital Electronic

## Prime implicant table

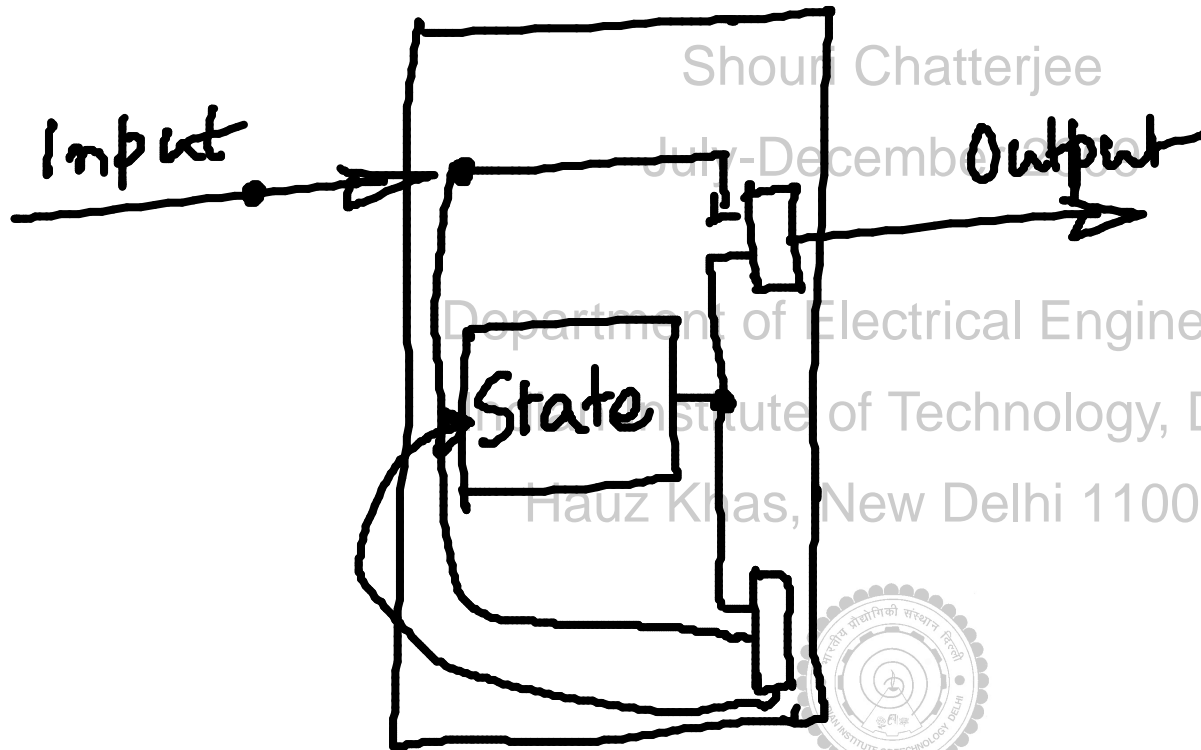
	<b>_000</b>	<b>00_0</b>	<b>1_0_</b>	<b>0_1_</b>	<b>-_11</b>	<b>-1_1</b>	<b>1_-_1</b>
0	*	*					
				*	*		
						*	
				*	*	*	
			*	*	*	*	
			*	*	*	*	
					*	*	*

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$$\overline{A}C + \overline{A}C + BD + \begin{cases} \overline{B}\overline{C}\overline{D} \\ \overline{A}\overline{B}\overline{D} \end{cases}$$

# Sequential Logic Digital Electronic Circuits



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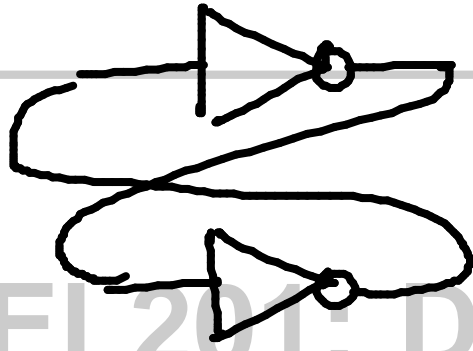
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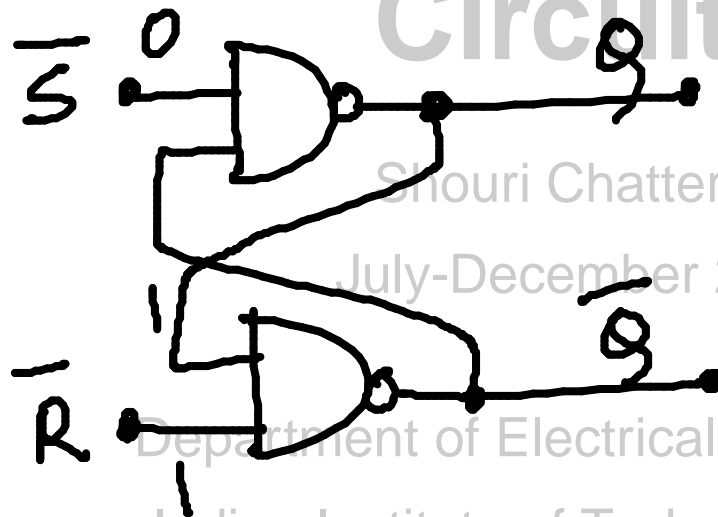
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Memory



# EEL201: Digital Electronic Circuits



$\bar{S}$	$\bar{R}$	$Q$	$\bar{Q}$
1	1	Q	$\bar{Q}$
0	1	1	0
1	0	0	1
Invalid		0	0
Invalid		1	1

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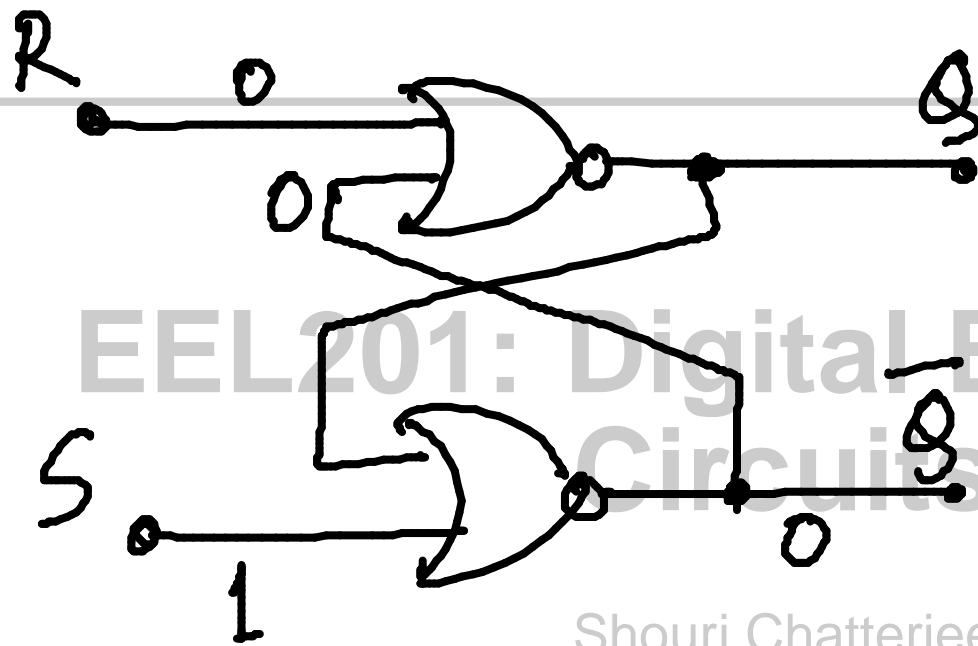
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S	R	Q	Q̄
0	0	2	2̄
1	0	1	0
0	1	0	1

1	1	0	0
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The CLOCK

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Any periodic signal

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# EEL201: Digital Electronic Circuits

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