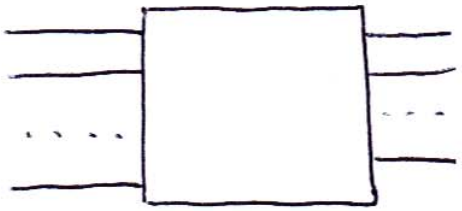
P3360/AEP3630

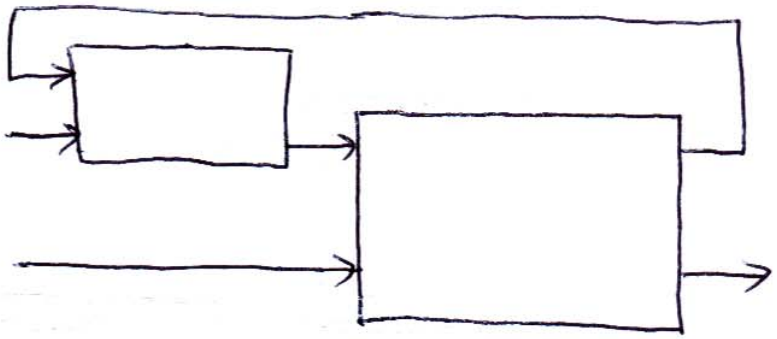
Lecture 27

Combinational Logic



- outputs depend _____ on present values of inputs

Sequential Circuit



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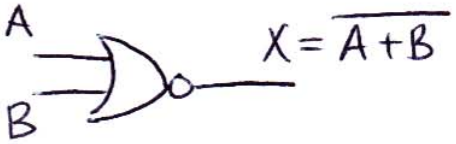
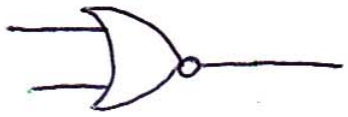
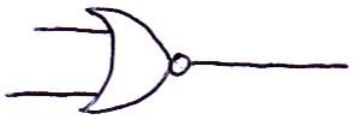
-

RS latch

recall NOR gate





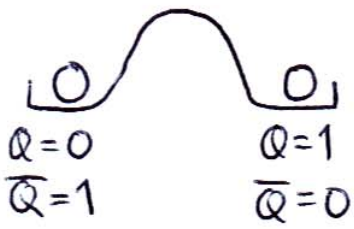


S	R	Q	$\overline{Q}$
0	0		
0	0		
0	1		
0	0		
1	0		
0	0		
1	1		
0	0		

S	R	Q	$\overline{Q}$
0	0		
0	1		
1	0		
1	1		

– latch has _____ response,

– contrary to _____



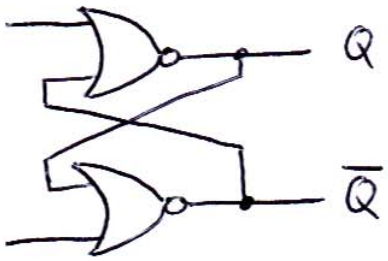
- similar to ball analogy, need a _____ to send the latch from one stable state into another
- there exists a min pulse length needed for switching

Flip-flop

problems with latches :

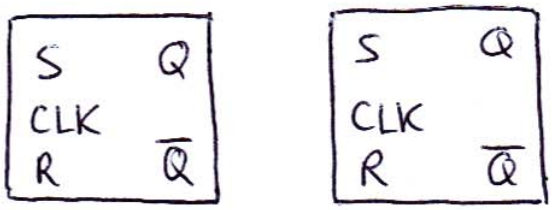
Improvements

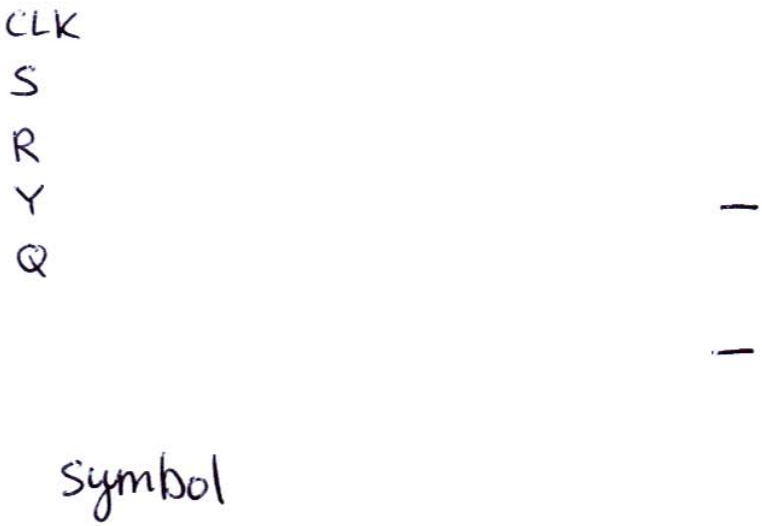
1) clocked RS flip-flop



2) triggering

Master-slave configuration





Symbol

3) direct inputs