Expt No: 8 Date:4
December 2021

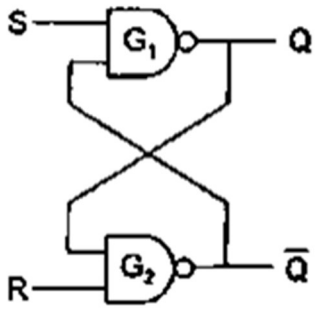
Latches and Flip flops

Objective

- To study and realize the given latches and flip-flops using Tinkercad.

Lab Experiments:

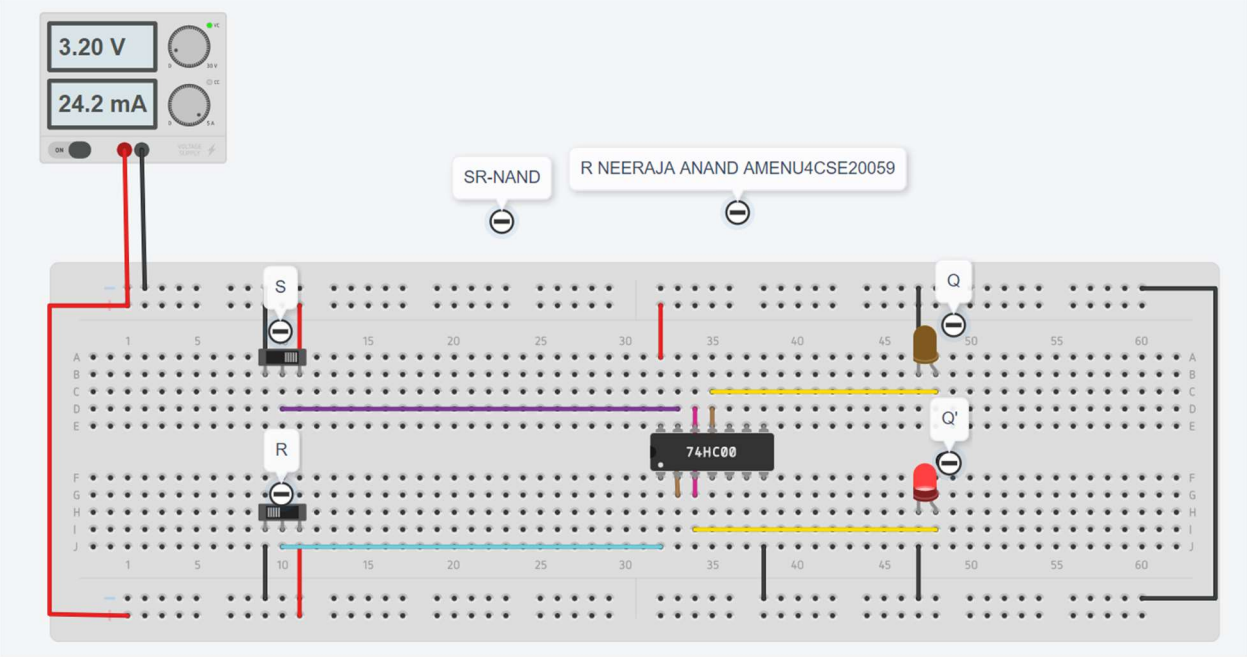
1. Use Tinkercad to verify the truth table for basic SR Latch using NAND gate.
Circuit Diagram



Truth table

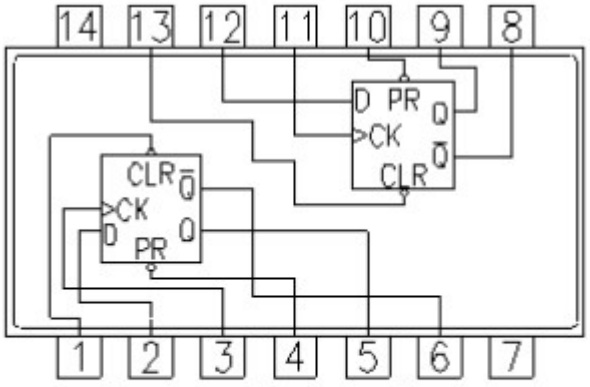
S	R	Q	Q'
0	0	X	X
0	1	1	0
1	0	0	1
1	1	Q	Q'

Simulation diagram



2. Use Tinkercad to verify the Characteristic tables for D flip flop.

Pin layout



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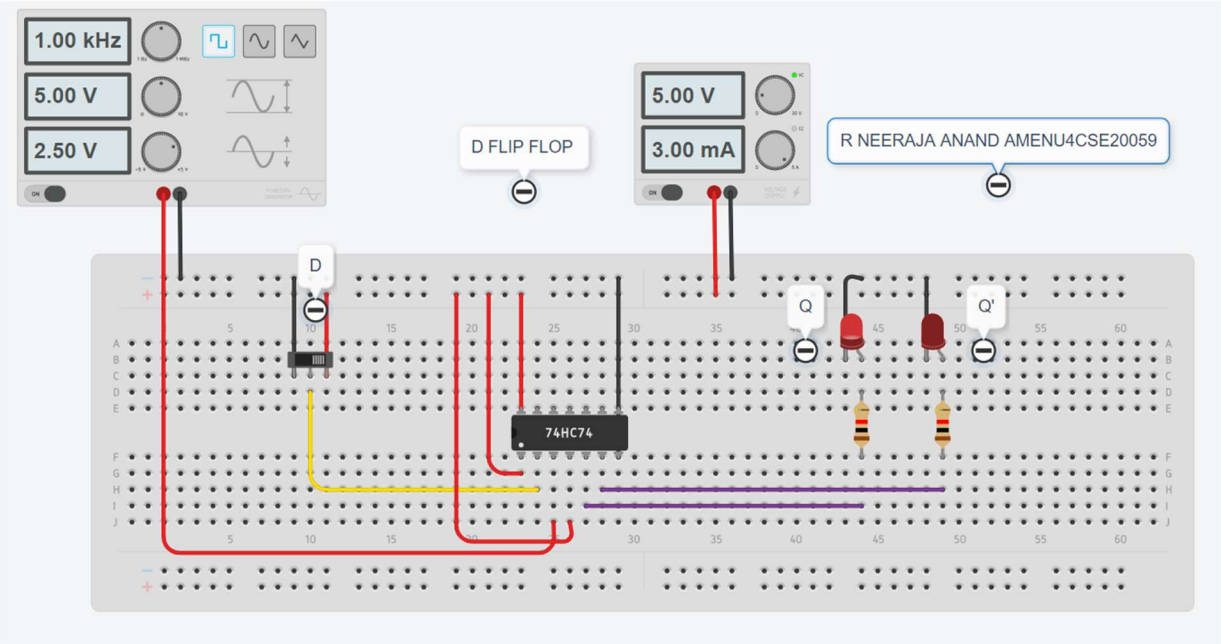
Dual D Flip-Flop
with Preset and Clear

Truth table

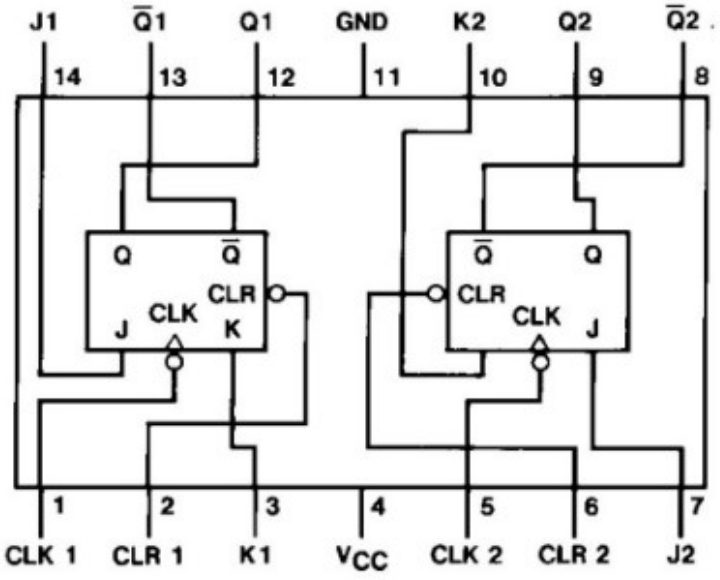
D	Q	Q'
0	0	1
1	1	0

Simulation diagram



3. Use Tinkercad to verify the Characteristic tables for JK flip flop.

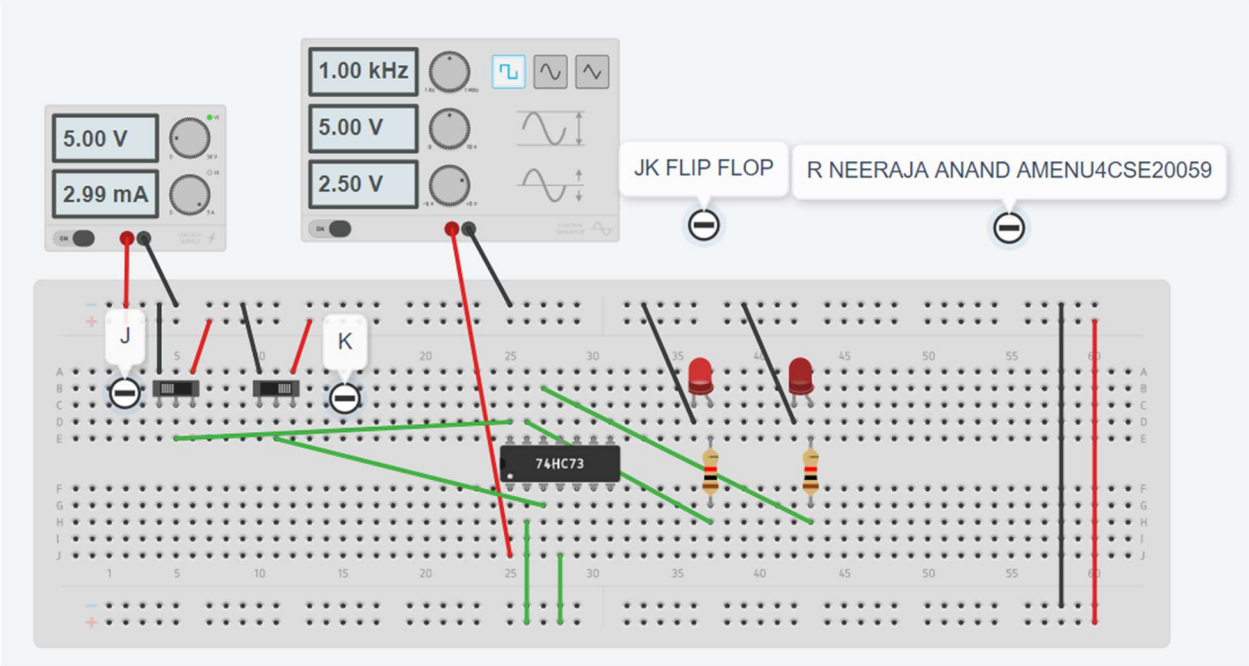
Pin layout



Truth table

J	K	CLK	Q
0	0	High	Q0 No change
1	0	High	1
0	1	High	0
1	1	high	Q0’

Simulation diagram



- **Result:** Studied and realized the given latches and flip-flops using Tinkercad.

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