EXPERIMENT-9

AIM: To design a 2:1 Mux and 2:1 Demux

HARDWARE / SOFTWARE APPARATUS : Power supply , bread board , connecting wires , respective IC

TRUTH TABLE:

MUX

Select	Inputs		Output
0	0	0	0
0	0	1	1
1	1	0	1
1	1	1	1

DEMUX

Select	Input	Outputs	
S	D	Y_1	Y_0
0	0	0	0
0	1	0	1
1	0	0	0
1	1	1	0

THEORY:A multiplexer is a circuit that accept many input but give only one output. A demultiplexer function exactly in the reverse of a multiplexer, that is a demultiplexer accepts only one input and gives

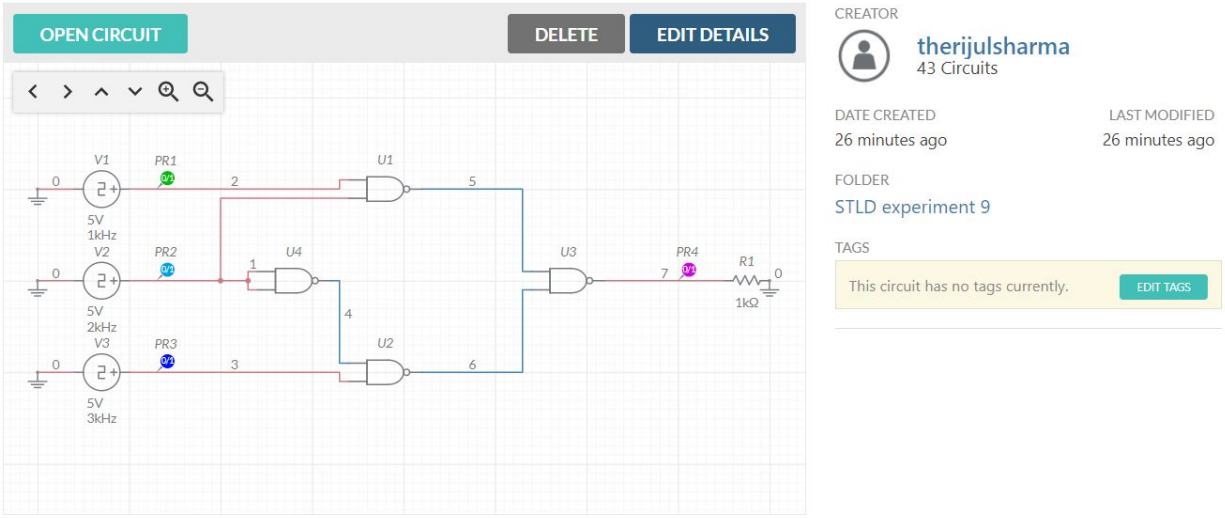
many outputs. Generally multiplexer and demultiplexer are used together, because of the communication systems are bi directional.

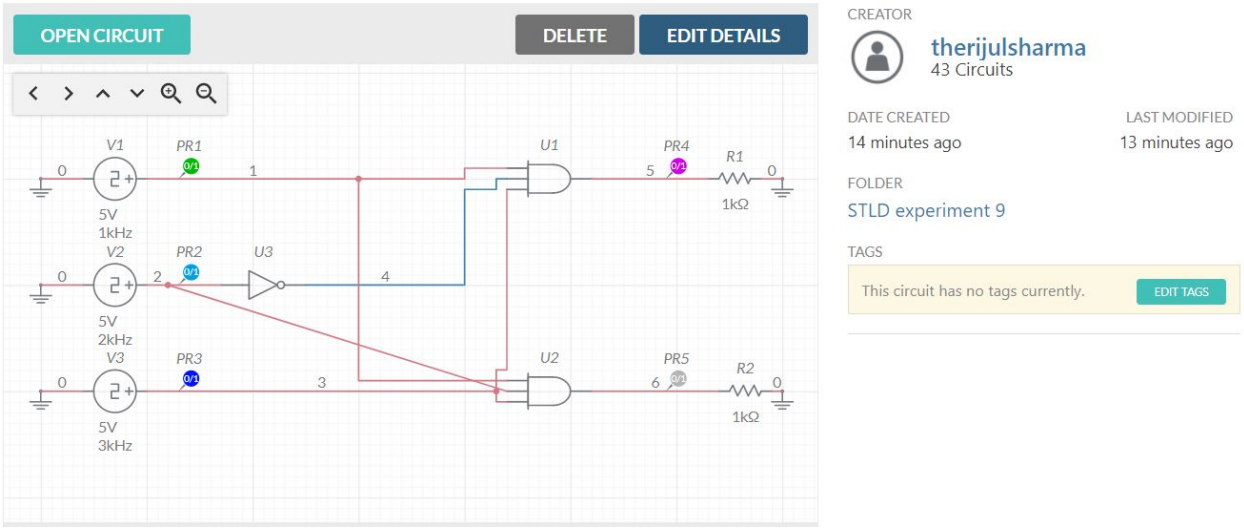
PROCEDURE (MULTISIM):

- Select the required gate symbol from the digital section of the tool bar on the left .
- Select a resistor from the same toolbar.
- Select the voltage sources and ground symbols from that toolbar.
- Ground both the voltage sources(clock) and then connect them to the input terminal of the gate.
- Connect the output terminal to 1kohm resistor and ground it.

CIRCUIT DIAGRAMS:

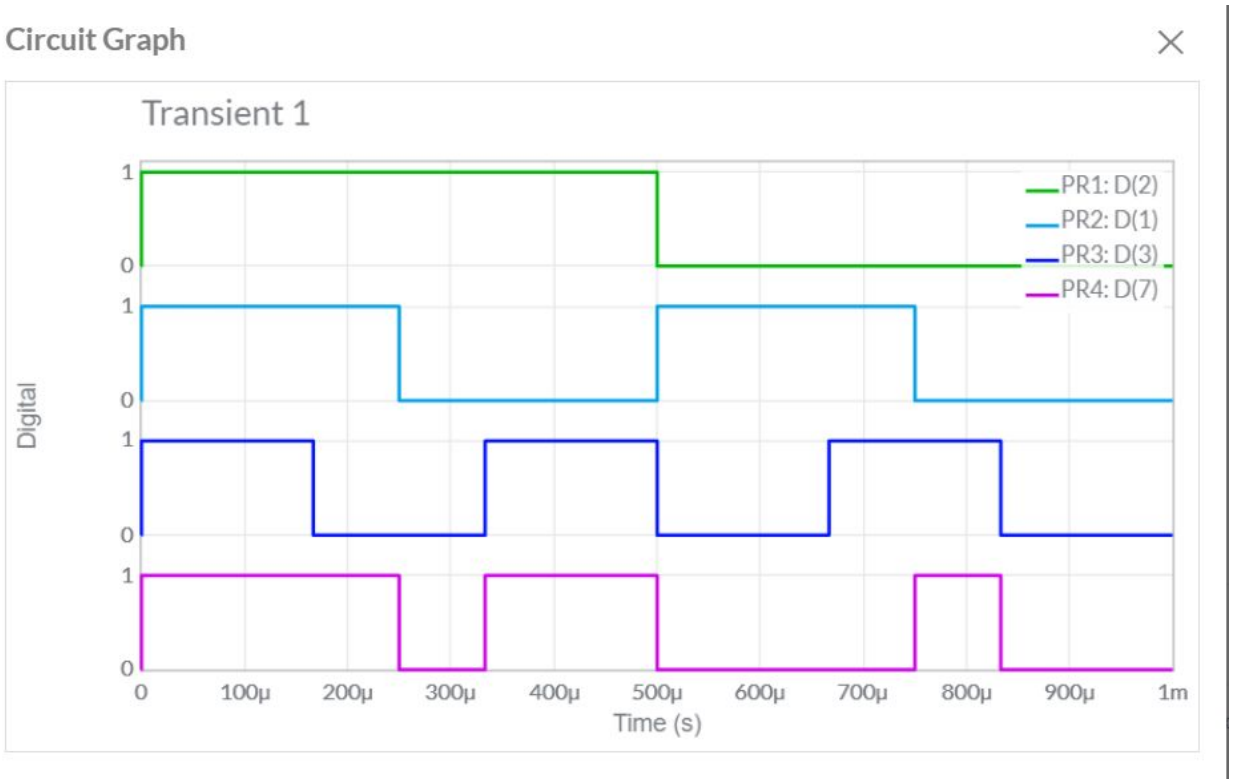
MUX



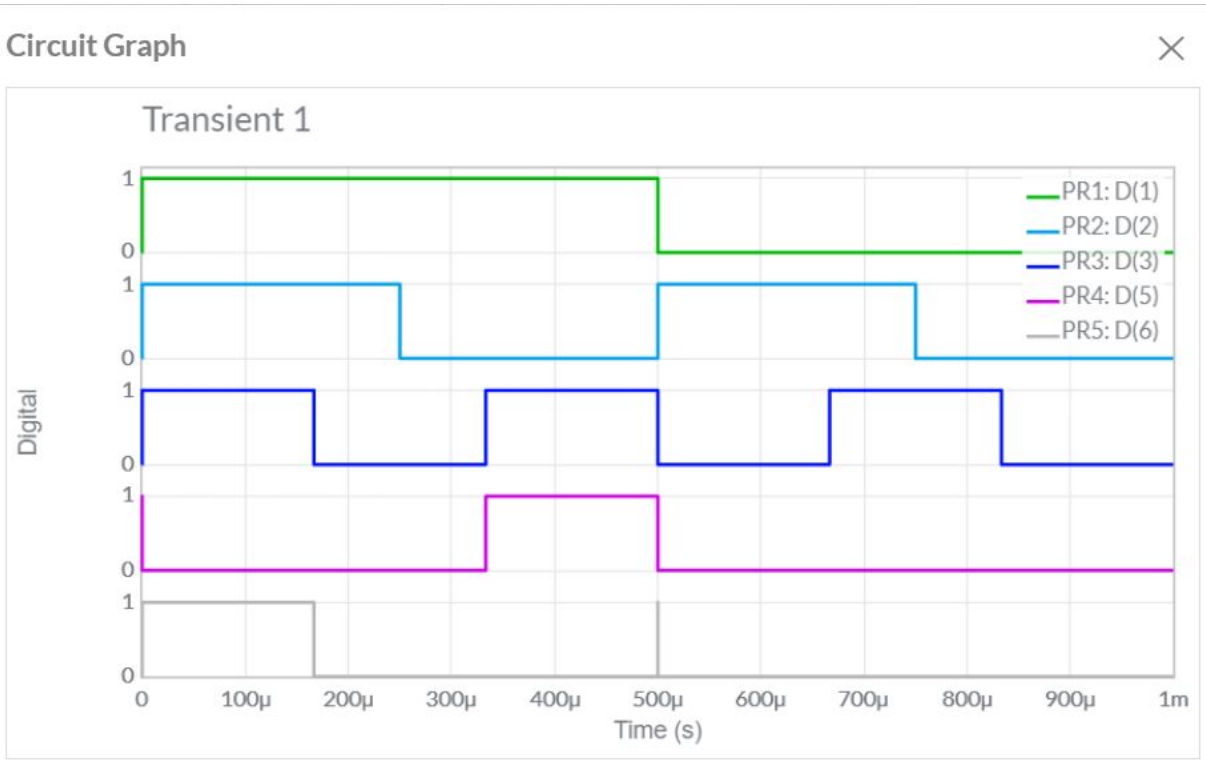


INPUT /OUTPUT WAVEFORMS:

MUX



DEMUX



PRECAUTIONS:

- Power supply should not exceed more than 5V.
- Connections should be tight.
- Components should be tested before the practical.