EXPERIMENT-8

AIM: To design a Binary to BCD converter circuit

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

TRUTH TABLE:

Binary Code A B C D	Decimal Number	BCD Code B_5 B_4 B_3 B_2 B_1
0 0 0 0	0	0 0 0 0 0
0 0 0 1	1	0 0 0 0 1
0 0 1 0	2	0 0 0 1 0
0 0 1 1	3	0 0 0 1 1
0 1 0 0	4	0 0 1 0 0
0 1 0 1	5	0 0 1 0 1
0 1 1 0	6	0 0 1 1 0
0 1 1 1	7	0 0 1 1 1
1 0 0 0	8	0 1 0 0 0
1 0 0 1	9	0 1 0 0 1
1 0 1 0	10	1 0 0 0 0
1 0 1 1	11	1 0 0 0 1
1 1 0 0	12	1 0 0 1 0
1 1 0 1	13	1 0 0 1 1
1 1 1 0	14	1 0 1 0 0
1 1 1 1	15	1 0 1 0 1

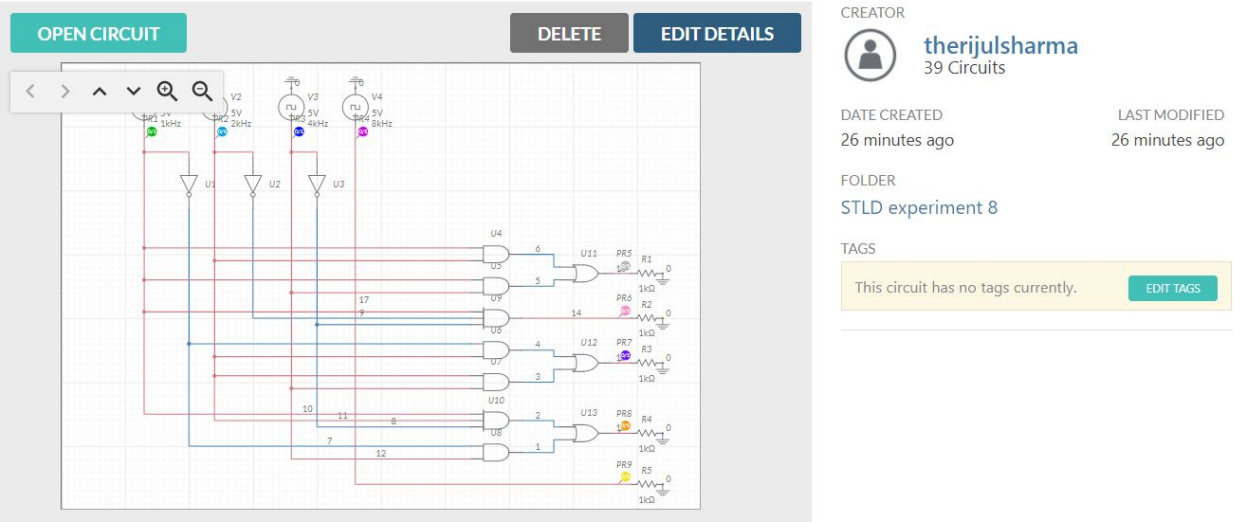
THEORY: BCD is binary coded decimal number, where each digit of a decimal number is respected by its equivalent binary number. That means, LSB of a decimal number is represented by its equivalent binary

number and similarly other higher significant bits of decimal number are also represented by their equivalent binary numbers.

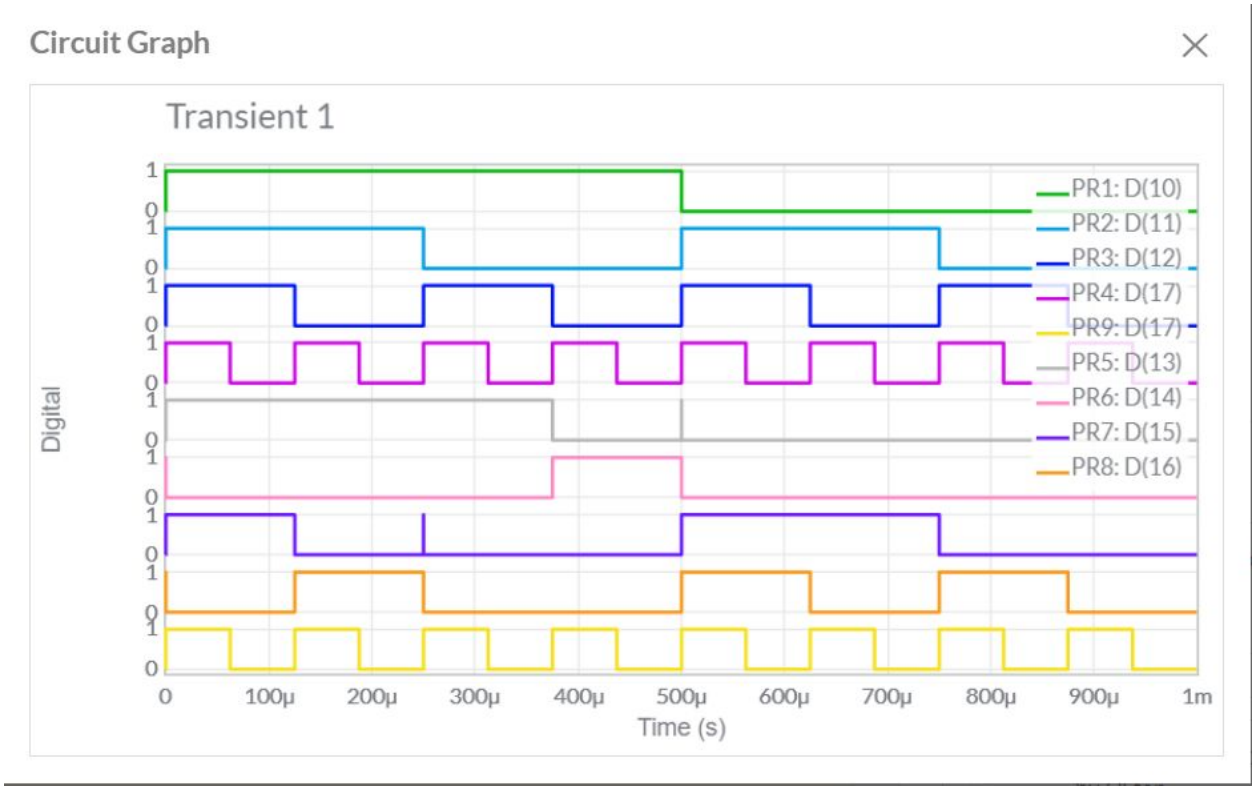
PROCEDURE (MULTISIM):

- 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:



INPUT /OUTPUT WAVEFORMS:



PRECAUTIONS:

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