

EXPERIMENT-4

AIM: To verify the operation of a half and full subtractor.

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

(7408,7486, 7404, 7432)

TRUTH TABLE:

Inputs		Outputs	
A	B	Diff	Borrow
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0

INPUT			OUTPUT	
A	B	Bin	D	Bout
0	0	0	0	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	1
1	0	0	1	0
1	0	1	0	0
1	1	0	0	0
1	1	1	1	1

THEORY: Half subtractor can subtract two bits individually. The output of a half adder has a difference bit and borrow for the difference bit.

Similarly, the full subtractor can be used for three bits.

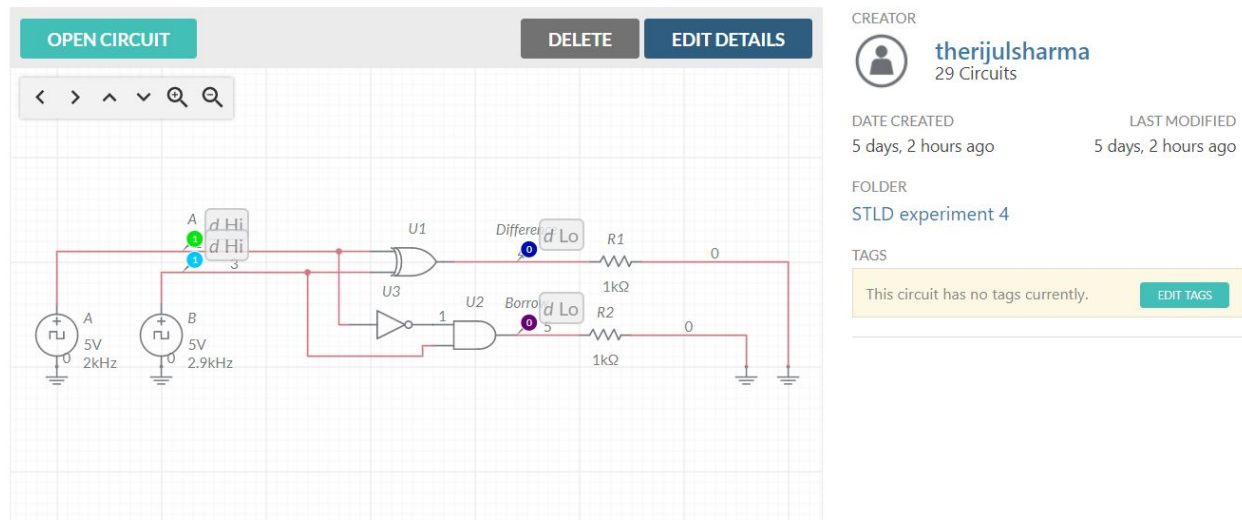
The full subtractor can also be seen as a sum of two individual half subtractors.

PROCEDURE (MULTISIM):

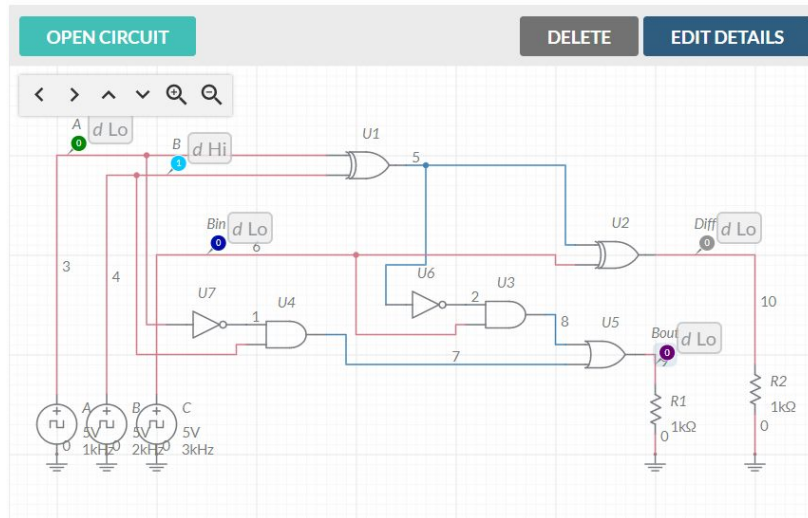
- Select the required gate symbol from the digital section of the tool bar on the left .
- Select a resistor from the same toolbar.
- Select the voltage sources and ground symbols from that toolbar.
- Ground both the voltage sources(clock) and then connect them to the input terminal of the gate.
- Connect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

CIRCUIT DIAGRAMS:

HALF SUBTRACTOR



FULL SUBTRACTOR



CREATOR



therijulsharma
29 Circuits

DATE CREATED

5 days, 2 hours ago

LAST MODIFIED

5 days, 2 hours ago

FOLDER

STLD experiment 4

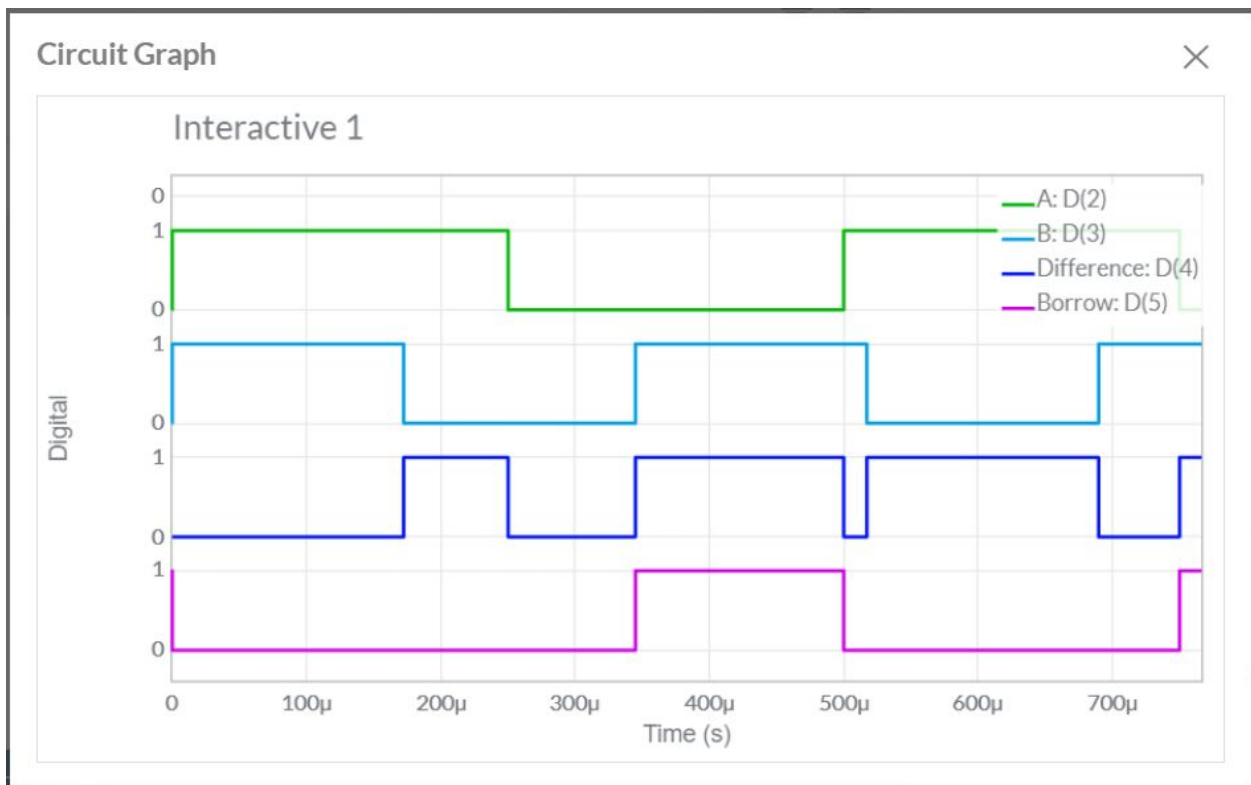
TAGS

This circuit has no tags currently.

EDIT TAGS

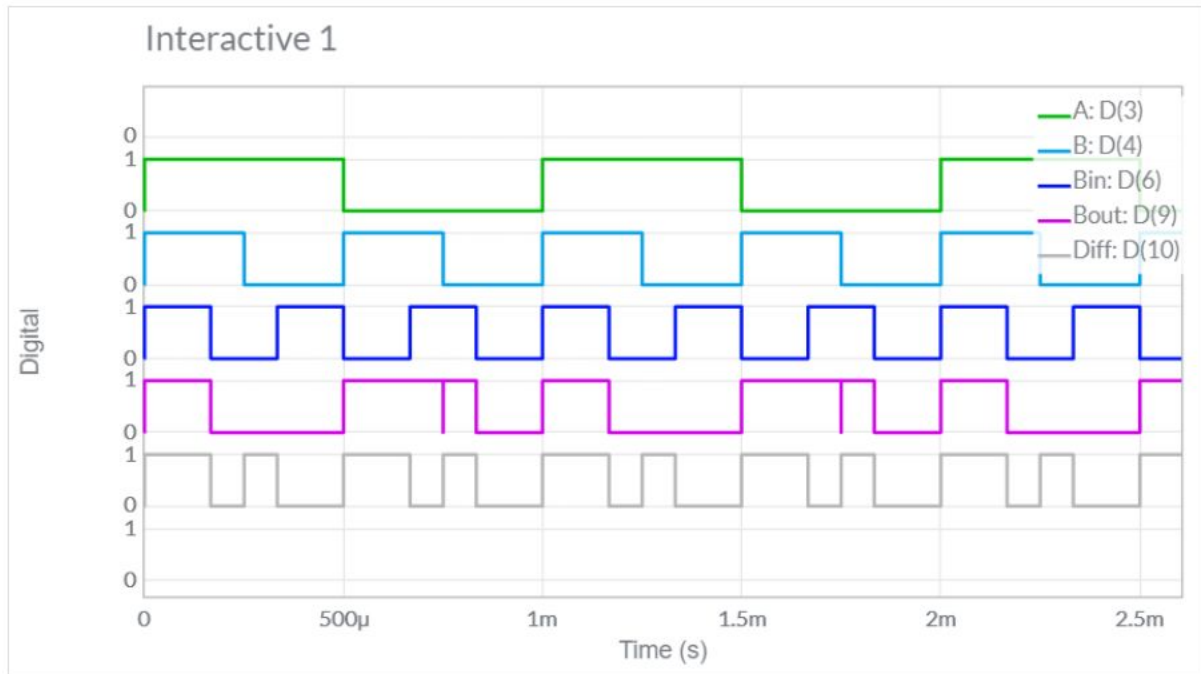
INPUT /OUTPUT WAVEFORMS:

HALF ADDER



FULL ADDER

Circuit Graph



PRECAUTIONS:

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