22. TWO BIT HALF SUBTRACTOR

EXP.NO: 22

AIM: To design and implement the two bit half subtractor using Logisim simulator.

PROCEDURE:
1)   Pick and place the necessary gates.
2)   Insert 2 inputs into the canvas.
3)   Connect the inputs to the OR gate, AND gate and NOT gate.
4)   Insert 2 outputs into the canvas.
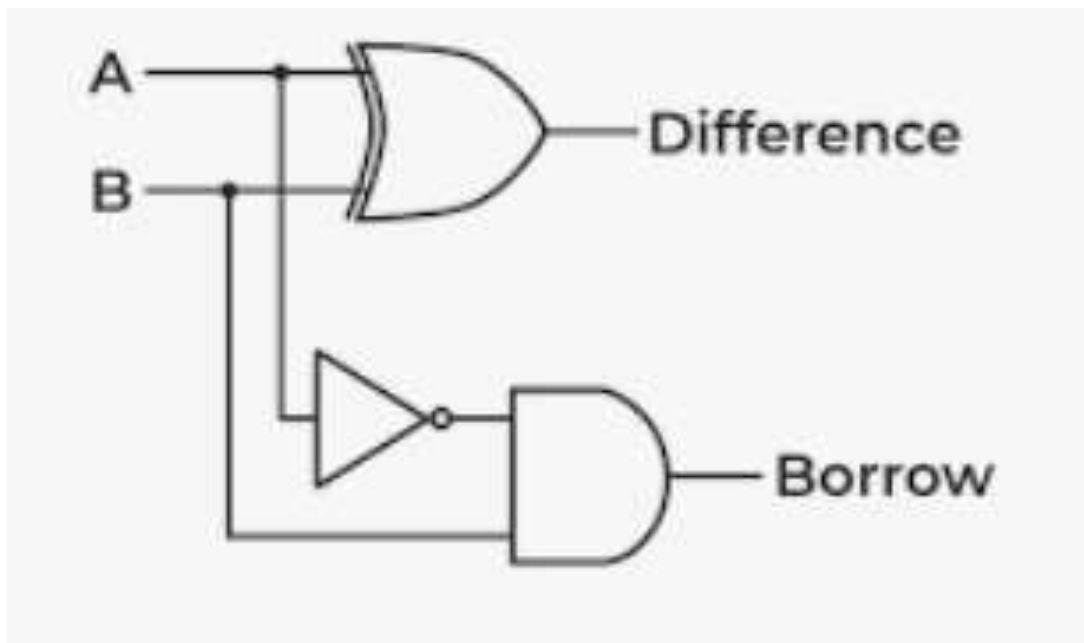5)   Make the connections using the connecting wires.
6)   Verify the truth table.

TRUTH TABLE:

A	B	Diff	Borrow
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0

Diff=A'B+AB'

Borrow = A'B

Logical Diagram:

Half Subtractor using NAND Gates:
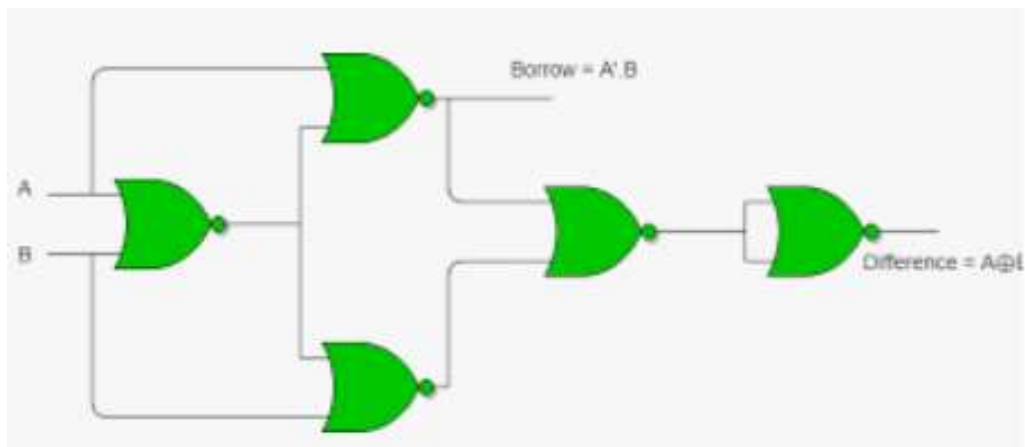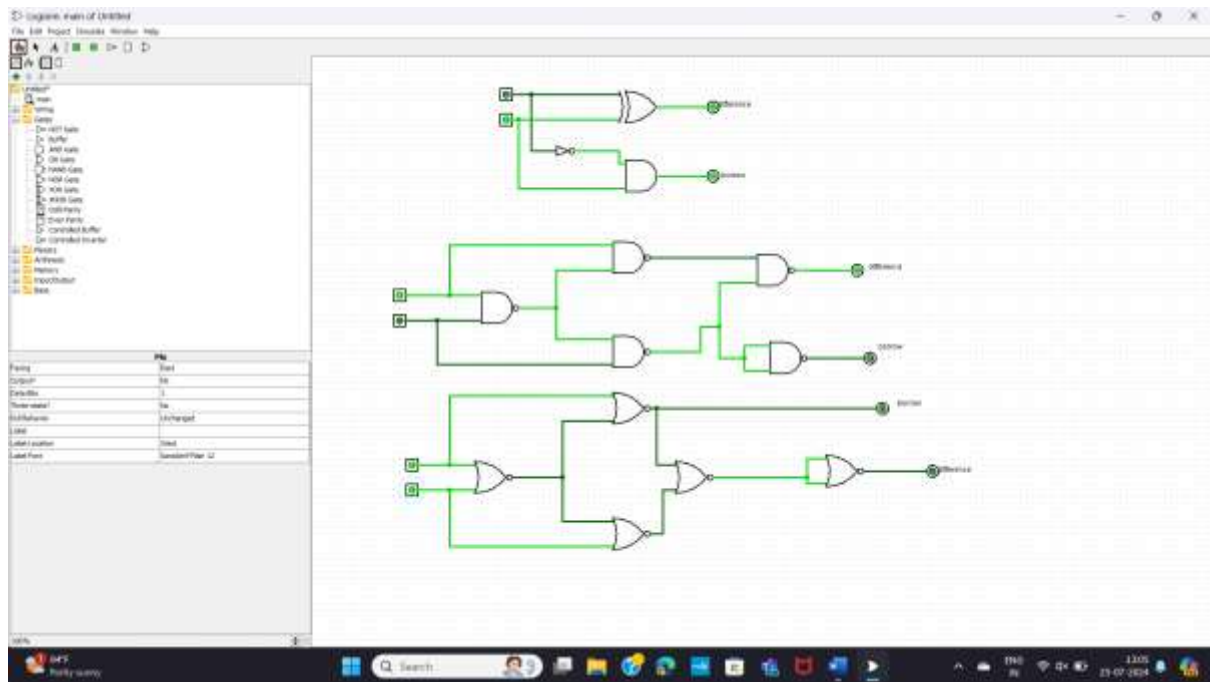

Half-Subtractor using NAND gates
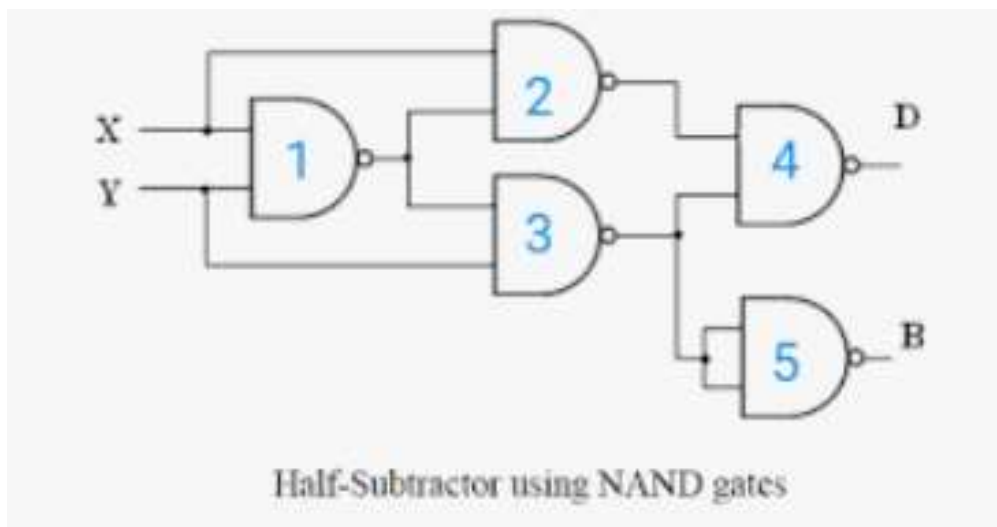
Half Subtractor using NOR Gates:

OUTPUT

RESULT: Thus 2-bit half subtractor has been designed and implemented successfully using logisim simulator.