22. TWO BIT HALF SUBTRACTOR

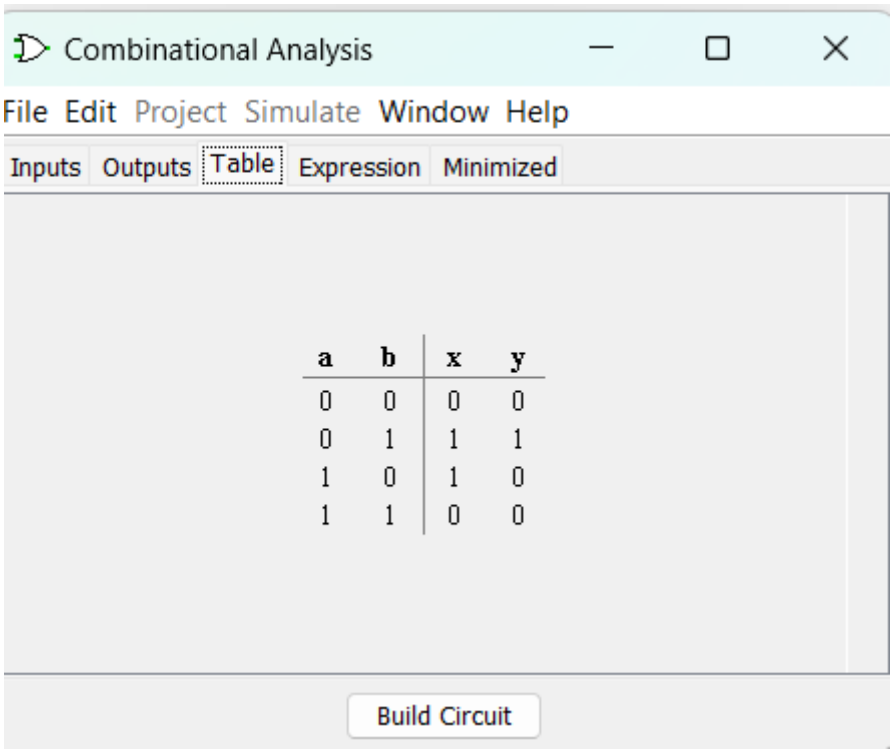
EXP.NO: 22

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:

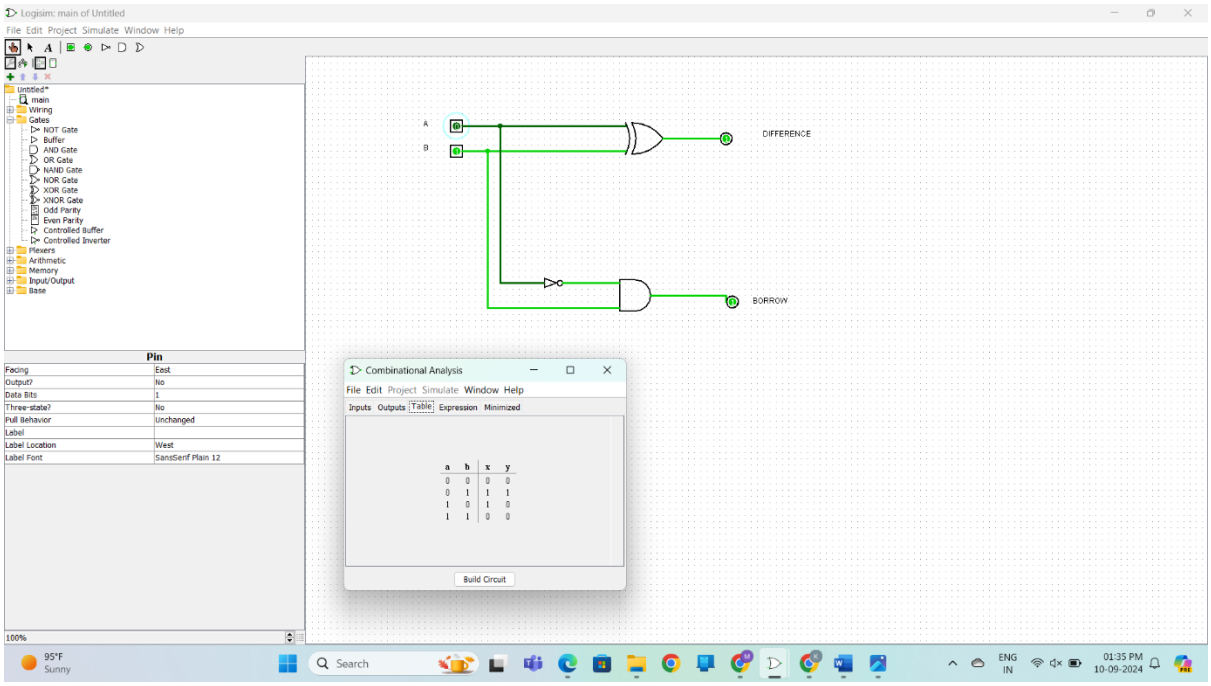


a	b	x	y
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0

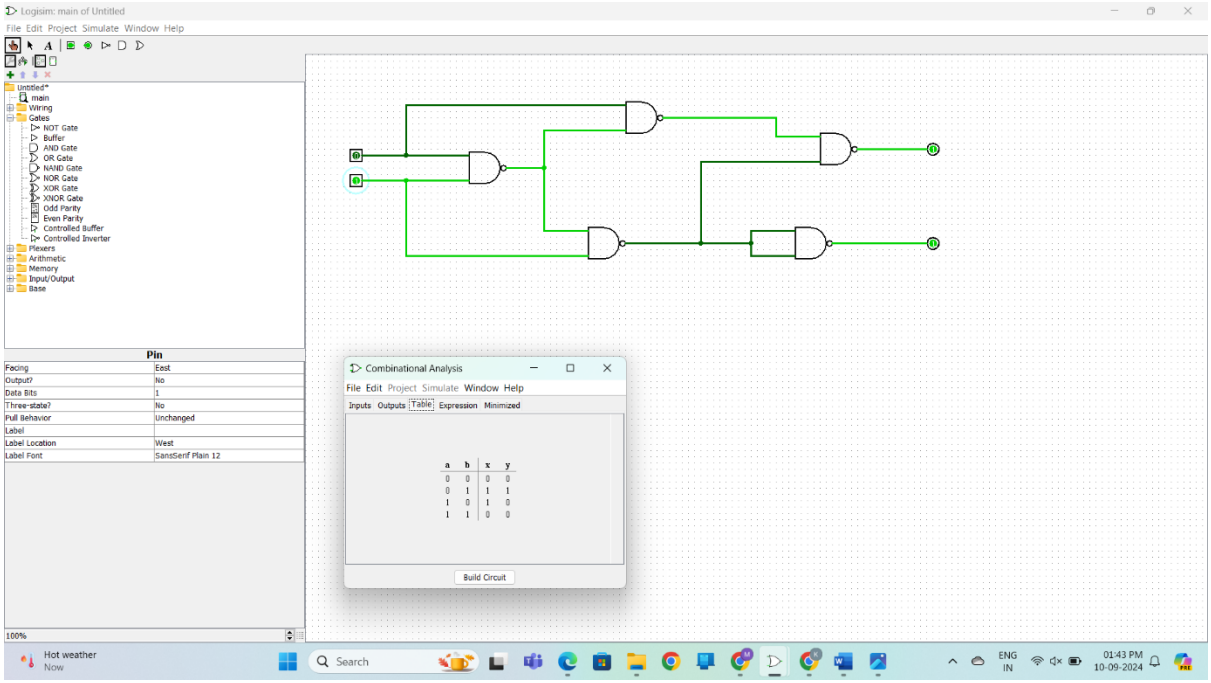
Diff=A'B+AB'

Borrow = A'B

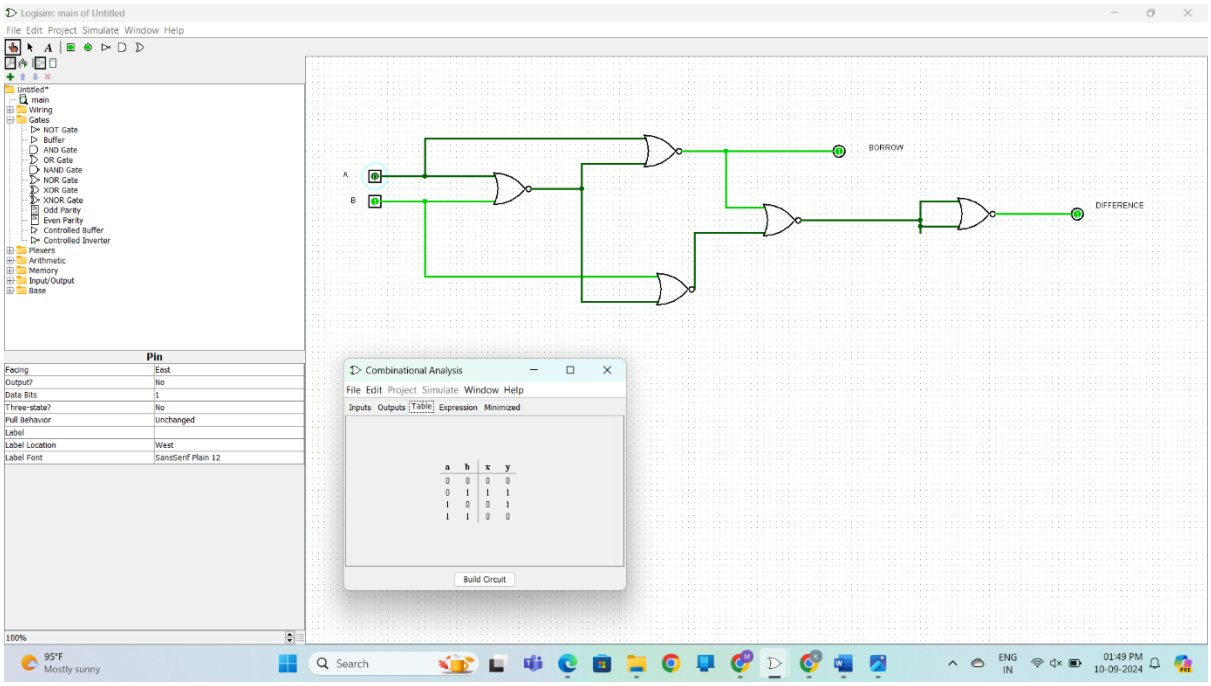
Logical Diagram:



Half Subtractor using NAND Gates OUTPUT:



Half Subtractor using NOR Gates OUTPUT:



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