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| **Half adder**  **EXP.NO: 21**  **AIM:**  To design and implement the two bit half adder using Logisim simulator.  **PROCEDURE:**   1. Pick and place the necessary gates. 2. Insert 2 inputs into the canvas. 3. Connect the inputs to the XOR gate and AND 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** | **S** | **C** | | 0 | 0 | 0 | 0 | | 0 | 1 | 1 | 0 | | 1 | 0 | 1 | 0 | | 1 | 1 | 0 | 1 |   S = A XOR B C = A AND B  **OUTPUT**    **RESULT:** Thus 2-bit half adder has been designed and implemented successfully using logisim simulator. |