**Lab Report No 9**

**Digital Logic Design**



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**Task 1:**

## **Solution:**

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| **Question** |
| Implement and verify the 1-Bit Magnitude Comparator Boolean expressions by using basic logic gates on trainer board |
| **Brief Description** |
| The 1-bit magnitude comparator compares two binary numbers, A and B, and determines if A is greater than B, equal to B, or less than B. The output of the comparator is a set of three control signals: A>B (A is greater than B), A=B (A is equal to B), and A<B (A is less than B). |
| **The results (Screenshot)** |
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**Task 2:**

## **Solution:**

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| **Question** |
| Implement and verify the 2-Bit Magnitude Comparator Boolean expressions by using  basic logic gates and simulate the circuit with Logisim. |
| **Brief Description** |
| A 2-bit magnitude comparator is a digital circuit that compares two 2-bit binary numbers and determines their relative magnitudes. It determines whether one number is greater than, equal to, or less than the other number. The comparator has two 2-bit inputs, A [1:0] and B [1:0], representing the two binary numbers to be compared. It produces three output signals: A>B, A=B, and A<B, indicating the results of the comparison. |
| **The results (Screenshot)** |
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