CSE260 Lab Report

Experiment Name: IMPLEMENTATION OF 4-BIT MAGNITUDE COMPARATOR

Submitted by

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1> Name of the experiment: Implementation of a 4-bit Magnitude Comparator

2> Objective:
- draw a circuit that will act as a Magnitude Comparator between two 4-bits number
- implement the circuit

3> Required Components:
- AND gate
- OR gate
- NOR gate
- NOT gate
- LED light
- Logic States
- Ground
- Wires

4> Experimental Setup
- shown in Proteus file

5) Results and Discussion

a) A = B is only possible when A and B are equal, such as A = 0000 and B = 0000 OR A = 1111 and B = 1111

b) A > B only possible when one bit is greater than the other, such as

A = 0010 , B = 0000

c) A < B only possible when B is greater than A.

A = 0000 , B = 0010

To find A < B from A > B and A = B, we need to add a 2-input NOR gate between the output of A > B and A = B.