DESIGN AND ANALYZE BINARY TO GRAY CODE CONVERTER

Learning Objective

To implement a Binary to Gray code converter using exclusive-OR gates
To implement a Binary to Gray code converter using NAND gates

Components Required

7400 quad two input NAND gates
7486 quad two input XOR gates

Pre-lab:

1. Construct the truth table for the Binary to Gray code converter
2. For the optimized Boolean expression of the outputs apply the K-map method
3. Draw the logic diagram for Binary to Gray code converter
4. Draw a NAND gates only version of the diagram

Laboratory:

1. Implement and test the circuit in part 1 using Multisim
2. Implement and test the circuit in part 2 using Multisim.
3. Verify the proper operation of the circuit by applying at least 3 different inputs signals and record the resulting outputs in the table 1 below:

B3	B2	B1	B0	G3	G2	G1	G0
0	**1**	**0**	**0**				
1	**1**	**1**	**1**				
1	**0**	**1**	**0**				

Lab performed on (date): _____ Signature: _____

Checked by: _____ Date: _____

Marks Awarded: _____