

## *DIGITAL LOGIC DESIGN*

### *MULTIPLEXER*

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### *MULTIPLEXER*

#### *AIM:*

*To the Truth Table of 4:1 Multiplexer using IC 74153.*

#### *OBJECTIVES:*

*To get familiar with the concept of multiplexing*

*To get familiar with MSI (medium scale integration) technology.*

#### *PROCEDURE:*

*Collect the components necessary to accomplish this experiment.*

*Plug the IC chip into the breadboard.*

*Connect the supply voltage and ground lines to the chips. PIN7 = Ground and PIN14 = +5V.*

*Make connections as shown in the respective circuit diagram.*

*Connect the inputs of the gate to the input switches of the LED.*



*Connect the output of the gate to the output LEDs.*

*Once all connections have been done, turn on the power switch of the bread-board*

*Operate the switches and fill in the truth table (Write 1 if LED is ON and "0" if L1 is OFF Apply the various combination of inputs according to the truth table and observe the condition of Output LEDs.*

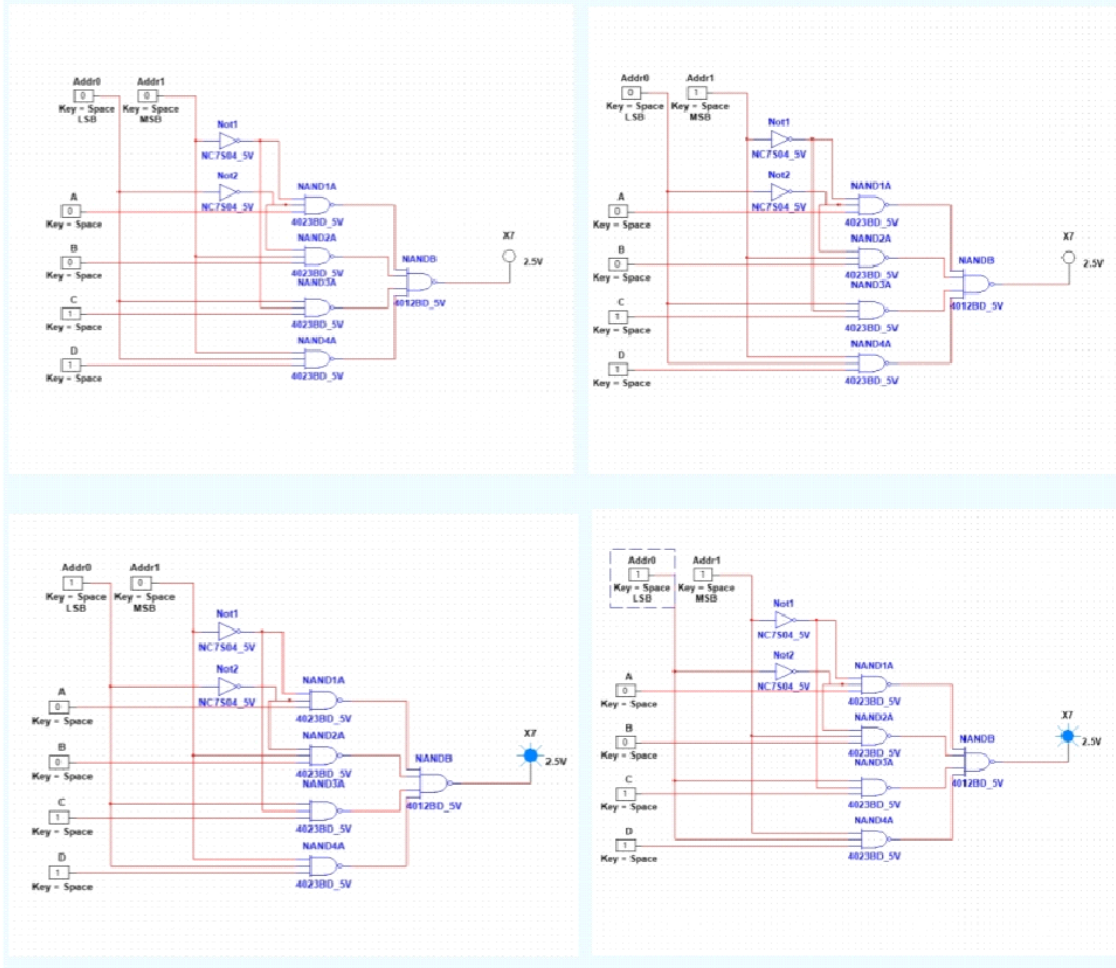
### **MULTIPLEXER:**

*A data selector, more commonly called a Multiplexer, shortened to "MUX" or "MPX, is combinational logic switching devices that operate like a very fast acting multiple position rotary switches. They connect or control, multiple input lines called channels consisting of either 2, 4, 8 or 16 individual inputs, one at a time to an output. Then the job of a multiplexer is to allow multiple signals to share a single common output. For example, a single 8channel multiplexer would connectome of its eight inputs to the single data output. The Boolean expression for this 4-to-1 Multiplexer above with inputs I0 to I3 and data select lines S0, S1 is given as.  $Y=S0S1I0+S0S1I1+S0S1I2+S0S1I3$*

### **OBSERVATION TABLE:**



A	B	Z
0	0	0
0	1	0
1	0	1
1	1	1



## RESULTS AND ANALYSIS:

Verified the truth table as follows. The input data was routed to output by varying the addresses on select lines

## CONCLUSION:

The truth table of 4:1 MUX using IC74153 has been verified.