GREEN UNIVERSITY OF BANGLADESH

Department of Computer Science & Engineering

Lab Report-06

Course Code: CSE-204

Course Title: Digital Logic Design Lab

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Remark

EXPERIMENT NO: 06

EXPERIMENT NAME: Design a combinational logic circuit for 1X4 De - MUX andverify thetruth table.

AIM: To construct and verify the 1X4 De Multiplexer and verify the truth table.

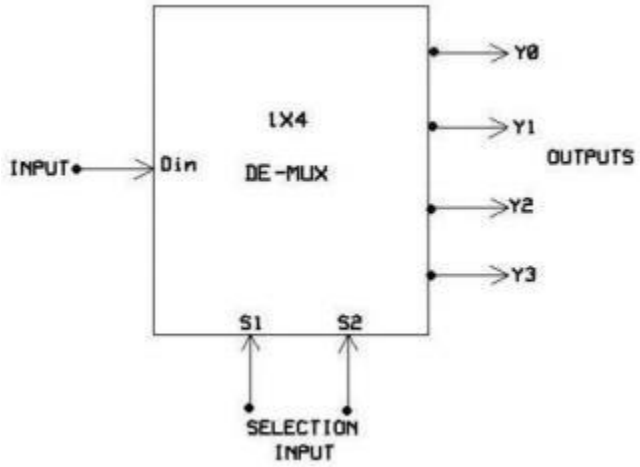
APPARATUS REQUIRED:

COMPONENTS: IC 7411,IC 7404, Resistors - 330 Ω -- 4 no's, LED's –4, Single lead probes.

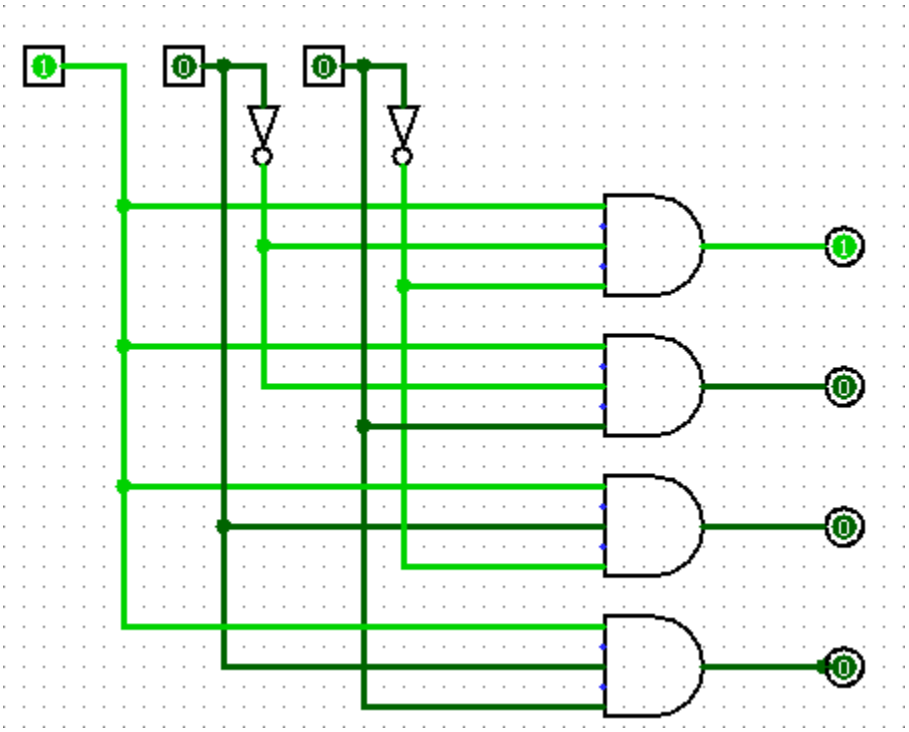
EQUIPMENT: Power supply, Bread board, Logisim software, Tinkercad onlinestimulation.

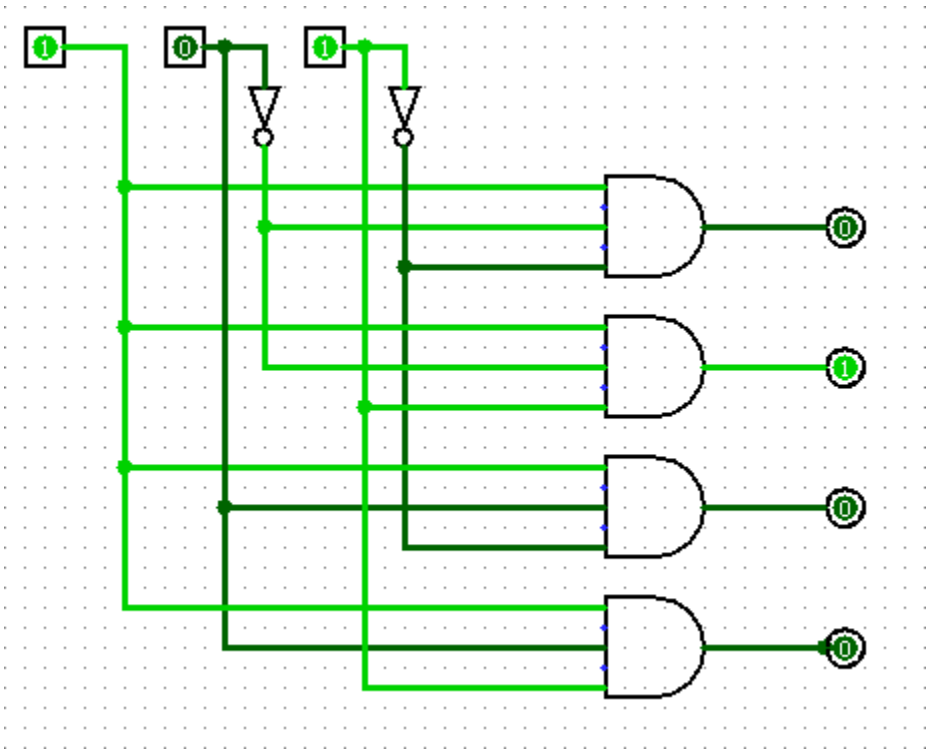
THEORY:

A de-multiplexer is a combinational logic circuit with an input line, 2n output linesand n select lines.It routes the information present on the input line to any of the output lines. The output line that getsthe information present on the input line is decided by the bit status of the selection lines.

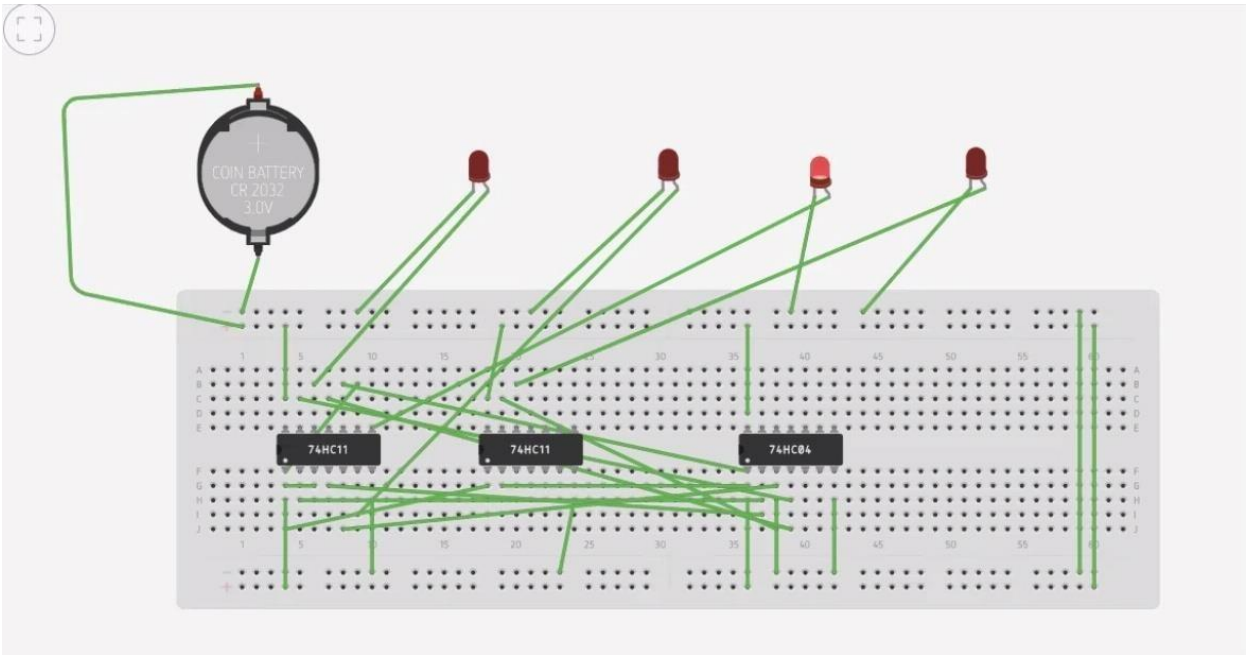


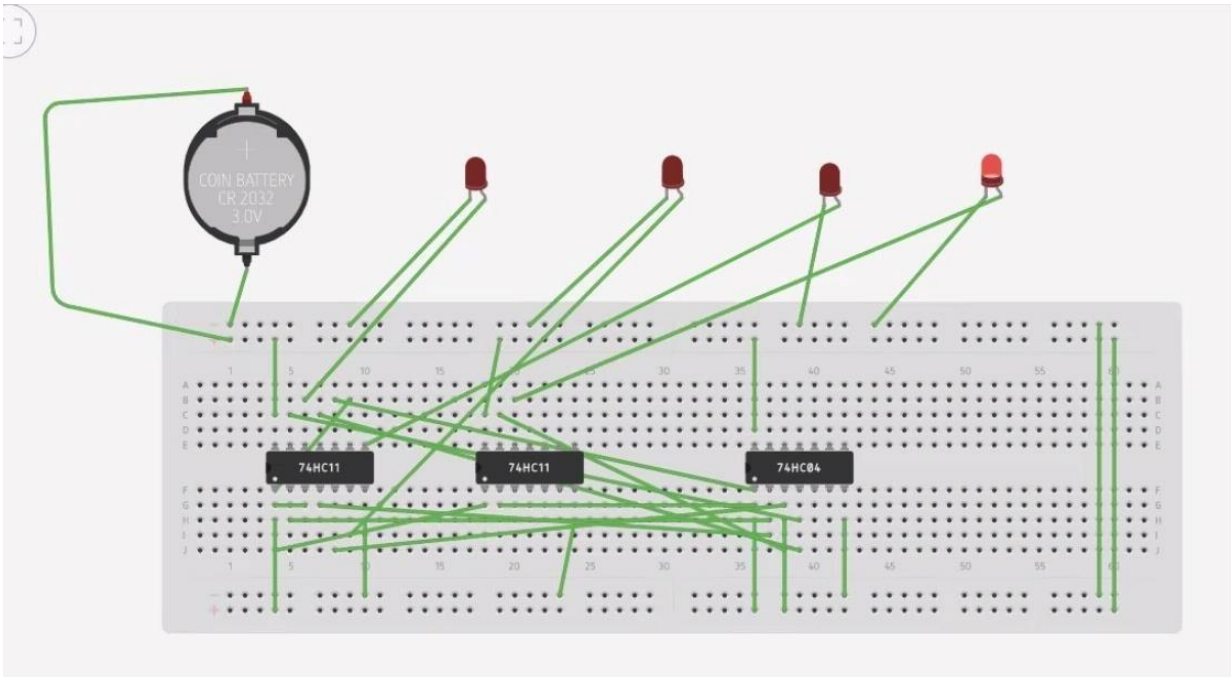
Circuit From Logisim Software:





Connection in TINKERCAD:





PROCECURE:

1. Firstly open logisim software.
2. Construct the circuit in logisim software and then give them number accordingto the pin diagram.
3. After that open tinkercad online simulator and take the necessary equipmentfor the experiment such as bread-board, IC, battery, led light etc.
4. And then with the help of pin diagram number construct the circuit on bread-board for each gate as shown in logisim software by inserting the appropriate IC
5. Check the combinations of various inputs from the logisim software for eachgates.
6. If the input is low then connect input to the ground, which indicates logic 0.
7. If input is high or logic 1 then connect the input to the power supply.
8. When output is high the LED will glow, which indicates the output as high, ifthe LED is not glowing then the output is low.

DISCUSSION:

This experiment was done by us from our home using some online tools such as logisim software and tinkercad online platform.In this experiment we use our devices such as laptop or computer for build the circuit and connection. And all of this work are done by us from home without touching any equipment such as bread-board or IC etc.This lab experiment is a little bit different than the previous lab because in this lab we use 2 bread-board for one circuit and a IC which ic can take 3 inputs and this thing is totally new for us and we learned it very well, our honourable teacher helps us a lot to realize how this types of ic works. And then we did it.Although this lab is on the online platform by using Logisim software and Tinkercad online stimulation. For this we can not do this experiment in real life. But using this online stimulation system we can do our lab work at home. In thislab we learned a lot of things such as how a 3 inputs IC work and 2 bread-board works etc. Above all of this things the lab experiment was really helpful for us.