North South University
Department of Electrical & Computer Engineering

LAB REPORT

Course Name: **CSE332L- Computer Organization and Architecture Lab**

Experiment Number: 1

Experiment Name: Design of a 2 bit Logic unit

Experiment Date: 17.10.2021

Report Submission Date: 17.10.2021

Section: 7

Group Number:

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Student ID: **1931746042**	
Remarks:	

Exp: Lab 01 – Design a 2 Bit Logic Unit

Objectives:

1. Design a 1 bit logic unit.
2. Design a 2 bit logic unit.
3. Design the IC's of 1 bit and 2 bit units to build a logic unit.
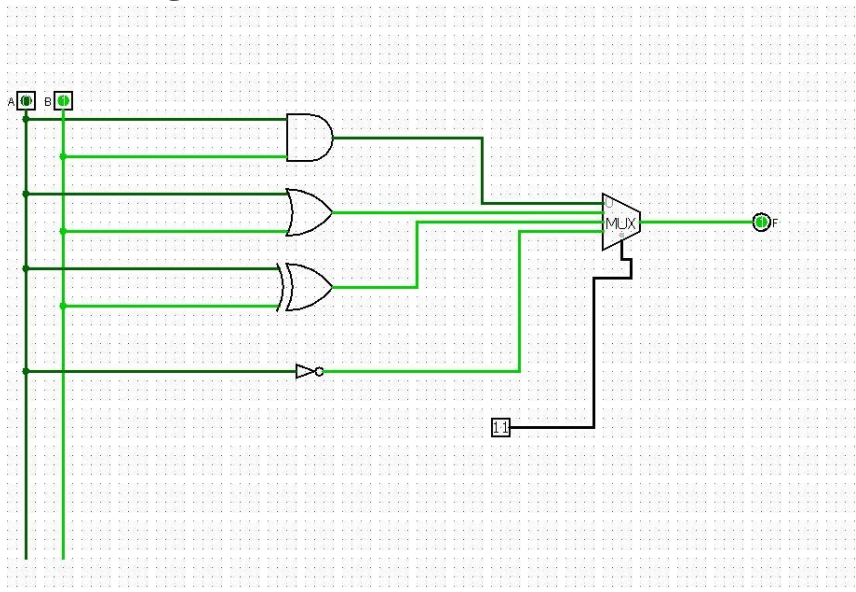
Equipment List:
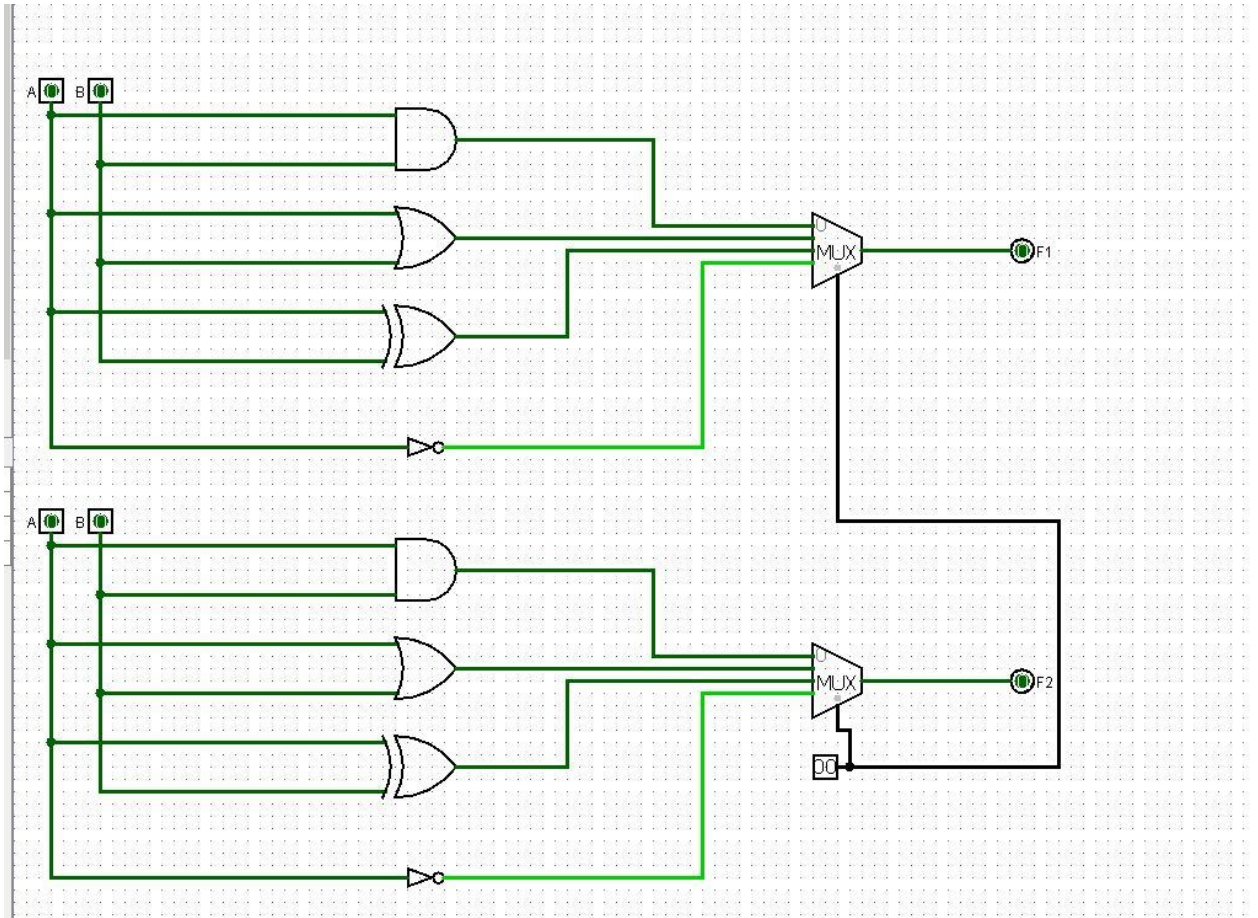
1. And Gate.
2. OR Gate.
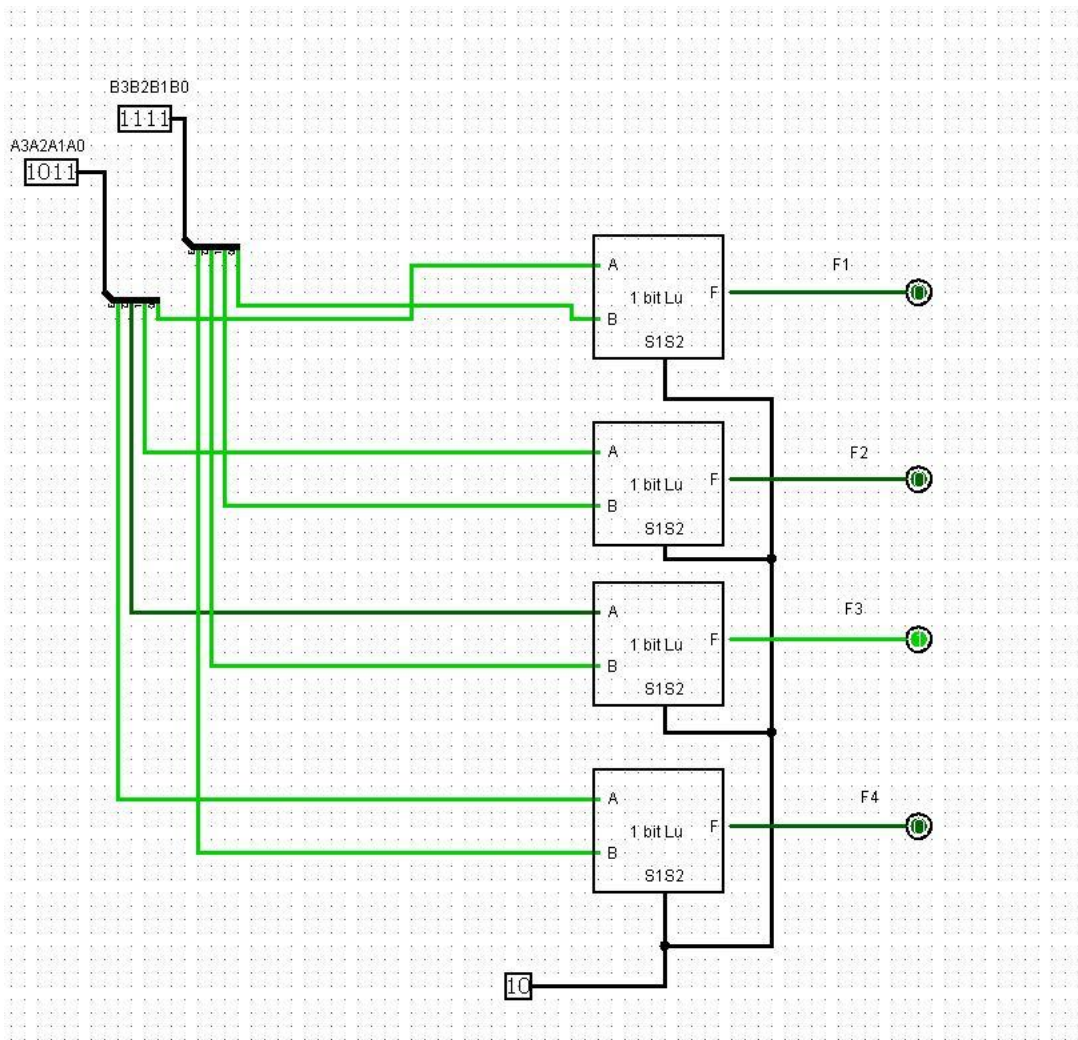3. X-OR Gate.
4. Not Gate.

Truth Table:

A1	A2	B1	B2	AND1	AND2	OR1	OR2	XOR1	XOR2	NOT A1	NOT A2
0	0	0	0	0	0	0	0	0	0	1	1
0	0	0	1	0	0	0	1	0	1	1	1
0	0	1	0	0	0	1	0	1	0	1	1
0	0	1	1	0	0	1	1	1	1	1	1
0	1	0	0	0	0	0	1	0	1	1	0
0	1	0	1	0	1	0	1	0	0	1	0
0	1	1	0	0	0	1	1	1	1	1	0
0	1	1	1	0	1	1	1	1	0	1	0
1	0	0	0	0	0	1	0	1	0	0	1
1	0	0	1	0	0	1	1	1	1	0	1

1	0	1	0	1	0	1	0	0	0	0	1
1	0	1	1	1	0	1	1	0	1	0	1
1	1	0	0	0	0	1	1	1	1	0	0
1	1	0	1	0	1	1	1	1	0	0	0
1	1	1	0	1	0	1	1	0	1	0	0
1	1	1	1	1	1	1	1	0	0	0	0

IC Circuit Diagram:

Discussion:

In this expriment,i gather knowledge about 1 bit and 2 bit of logic unit and i learn circuit.Firstly,i making 1 bit logic unit which is comparatively easier than 2 bit logic unit .Then I make 2 bit logic unit by using two 1 bit logic unit and I use only one selector pin for two circuit.I also gather knowledge about multiplexer which I used for making logic unit.I also use And,OR,X-OR,NOT gate for making logic unit.I learn how to make a ic by our own circit .It is very helpful but I do not have to make same circuit again and again.I also learn how to make 4 or more bit logic unit by using 1 or 2 bit ic.

For making 4 bit logic unit,I use four 1 bit logic unit ic.firstly,I take one copy of 1 bit ic from 1 bit logic unit ic's part.Then I take rest of the three 1 bit ic in the same process.I use two splitter for taking the input of 4 ic's input.One splitter use for take input of A and another one use for taking input of B and I use 2 bit selector for selecting which gates out,I want to show.

During the experiment,I face a problem,like I have not eough knowledge for making ic by our own circuit.so ,by the help of my lab instructor ,i learn the process for making ic.Then I do the all lab work successfully.