CSE332 Lab 1

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Experiment Name: Design of a 2-bit Logic unit

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

Discussion: In today's lab we have designed a 2-bit logic unit which is actually a part of an ALU using Logisim. The logic unit has 4 micro-operations which are AND, OR, XOR and NOT operations. The logic unit has been designed using AND, OR, NOT, XOR and Multiplexers. There was a deep discussion about multiplexer. We have learnt how multiplexer works as a data selector. It takes multiple inputs and gives a single output. We have used two 4x1 multiplexers in our logic unit. The output of each AND, OR, NOT, XOR operation is set to be the input of the multiplexer. We have used two selection pin s1 and s2. Selection pins are used to select which input line is to send to the output. After that we have learnt how to create sub circuit in Logisim. The use of github and git command and the submission processed was discussed at the end of the class.