EECS 140: Lab 5 Pre-Lab

Implementing a SOP Expression on Prototyping board

Morgan Bergen

KUID: 3073682

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1. What are the three main sections of the prototype board that you soldered in Lab 4.

The three main sections of the prototype board that we implemented, built, and soldered was as follows,

1. Power Input Circuit Section
2. Switch Circuit Section
3. LED Display Section

4. How many possible inputs and outputs can you have on the prototype board?

Because there are 4 input switches there are 16 different possible outputs that the board could have.

The following is a possible truth table demonstrating this fact,

SW5	SW4	SW3	SW2	OUTPUT
0	0	0	0	possible output 1
0	0	0	1	possible output 2
0	0	1	0	possible output 3
0	0	1	1	possible output 4
0	1	0	0	possible output 5
0	1	0	1	possible output 6
0	1	1	0	possible output 7
0	1	1	1	possible output 8
1	0	0	0	possible output 9
1	0	0	1	possible output 10
1	0	1	0	possible output 11
1	0	1	1	possible output 12
1	1	0	0	possible output 13
1	1	0	1	possible output 14
1	1	1	0	possible output 15
1	1	1	1	possible output 16

5. How would you provide a logic '0' or '1' as input?

For the input switches - a jumper on the right indicates a 0, a jumper on the left indicates a 1.

There additionally must have to be a supply of power that is connected to the Power input circuit section where the ground and +5 VDC is connected.

6. How would you monitor the output(component and logic)?

The way in which you monitor the connect is to visually see if the green LED display is on or off. Because this board is an inverted board a false output would cause the LED to be on and a true output would cause the LED to be off.