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Methodology of a 3 x 8 Decoder.

1. For the 7805-voltage regulator the pin1 should be connected to the source, pin2 should be connected to the ground.
2. For the 3 buttons each input pin should be connected to the pin3 of 7805-voltage regulator and each output pin should be connected to the input pin of the NOT gate.
3. For the 3 1K OHM resistors it must be connected between each of the output pin of the buttons and to the ground.
4. For the 1st AND gate, the 1st input pin should be connected to the output pin of the 1st NOT gate and the 2nd input pin should be connected to the output pin of the 2nd NOT gate.
5. For the 2nd AND gate, the 1st input pin should be connected to the output pin of the 1st AND gate and the 2nd input pin should be connected to the output pin of the 3rd NOT gate.
6. For the 3rd AND gate, the 1st input pin should be connected to the output pin of the 1st NOT gate and the 2nd input pin should be connected to the output pin of the 2nd NOT gate.
7. For the 4th AND gate, the 1st input pin should be connected to the output pin of the 3rd AND gate and the 2nd input pin should be connected to the output pin of the 3rd button.
8. For the 5th AND gate, the 1st input pin should be connected to the output pin of the 1st NOT gate and the 2nd input pin should be connected to the output pin of the 2nd button.

9. For the 6th AND gate, the 1st input pin should be connected to the output pin of the 5th AND gate and the 2nd input pin should be connected to the output pin of the 3rd NOT gate.
10. For the 7th AND gate, the 1st input pin should be connected to the output pin of the 1st NOT gate and the 2nd input pin should be connected to the output pin of the 2nd button.
11. For the 8th AND gate, the 1st input pin should be connected to the output pin of the 7th AND gate and the 2nd input pin should be connected to the output pin of the 3rd button.
12. For the 9th AND gate, the 1st input pin should be connected to the output pin of the 1st button and the 2nd input pin should be connected to the output pin of the 2nd NOT gate.
13. For the 10th AND gate, the 1st input pin should be connected to the output pin of the 9th AND gate and the 2nd input pin should be connected to the output pin of the 3rd NOT gate.
14. For the 11th AND gate, the 1st input pin should be connected to the output pin of the 1st button and the 2nd input pin should be connected to the output pin of the 2nd NOT gate.
15. For the 12th AND gate, the 1st input pin should be connected to the output pin of the 11th AND gate and the 2nd input pin should be connected to the output pin of the 3rd button.
16. For the 13th AND gate, the 1st input pin should be connected to the output pin of the 1st button and the 2nd input pin should be connected to the output pin of the 2nd button.

17. For the 14th AND gate, the 1st input pin should be connected to the output pin of the 13th AND gate and the 2nd input pin should be connected to the output pin of the 3rd NOT gate.
18. For the 15th AND gate, the 1st input pin should be connected to the output pin of the 1st button and the 2nd input pin should be connected to the output pin of the 2nd button.
19. For the 16th AND gate, the 1st input pin should be connected to the output pin of the 5th AND gate and the 2nd input pin should be connected to the output pin of the 3rd button.
20. For the 8 100-ohm resistors each input pin should be connected to the output pins of our AND gates. These are 2nd, 4th, 6th, 8th, 10th, 12th, 14th, and lastly the 16th AND gate. And for the output pin of the resistors each should be connected to each positive pin of the LED.
21. The negative pin of the LED should be connected to the ground.
22. Conduct functionality test.