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ENSE 352 – Project Hardware Documentation – Battleships

Requirements:

1. 1x NUCLEOF103RB

2. 2x 271 Ohm Resistors

3. 1x 10000 Ohm Resistor

4. 4-way switch

5. Common Anode Seven Segment Display

6. ~26 Various wires. Would change depending on how it is made.

The document constains all the necessary information, such as diagram and photos on how to setup the board to replicate/configure the citcuit. There are **two** main components to this ciruits, the Common Anode Seven Segment Display, and the 4 way switch.

The green LED, and the input blue USER button is provided and attached onto the NUCLEO board.

Each photo has captions to explain what they are.

Please follow each wire properly and there will be no issues caused. If not, there may be problems with the display not working, or switching not inputting anything properly. Please be extremely cautious which pin each wire goes into for the NUCLEO Board as the configuration in the code is set to match those.

Power Supply: Use the 3V3 and GND connections from the NUCLEO Arduino Header.
If you have a breadboard power supply, an ADALM2000, or an Analog Discovery 2, remove them, or any connections to them, from the breadboard.
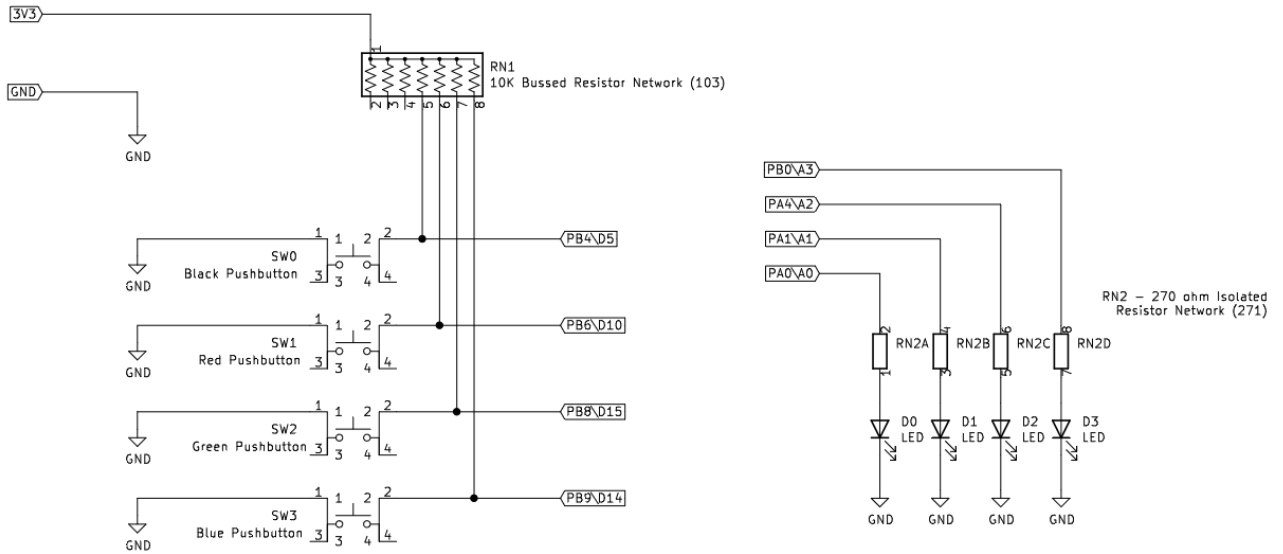
Note: Connections to the NUCLEO show the STM32 Pin Name as well as the Arduino Pin Name

STM32_PIN_NAME\ARDUINO_PIN_NAME

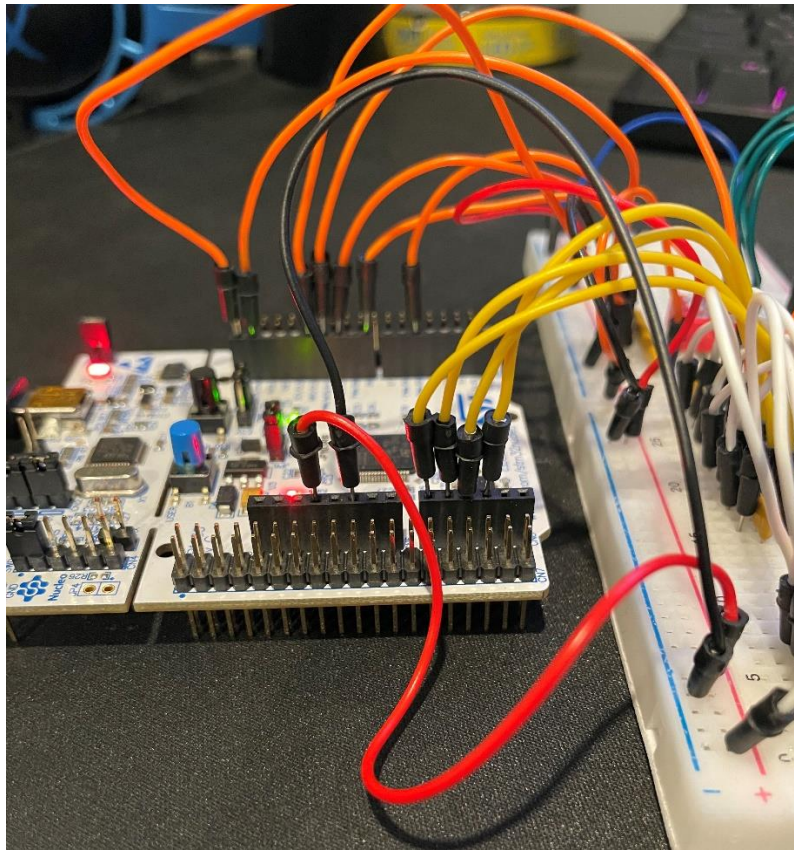*Figure 1 - Pin Inputs for the LEDs and Switches. Left image is off switches, where as right is the LEDs.*

Figure 2 - Shows where each wire needs to go on the NUCLEO board, including wires for the Seven Segment Display
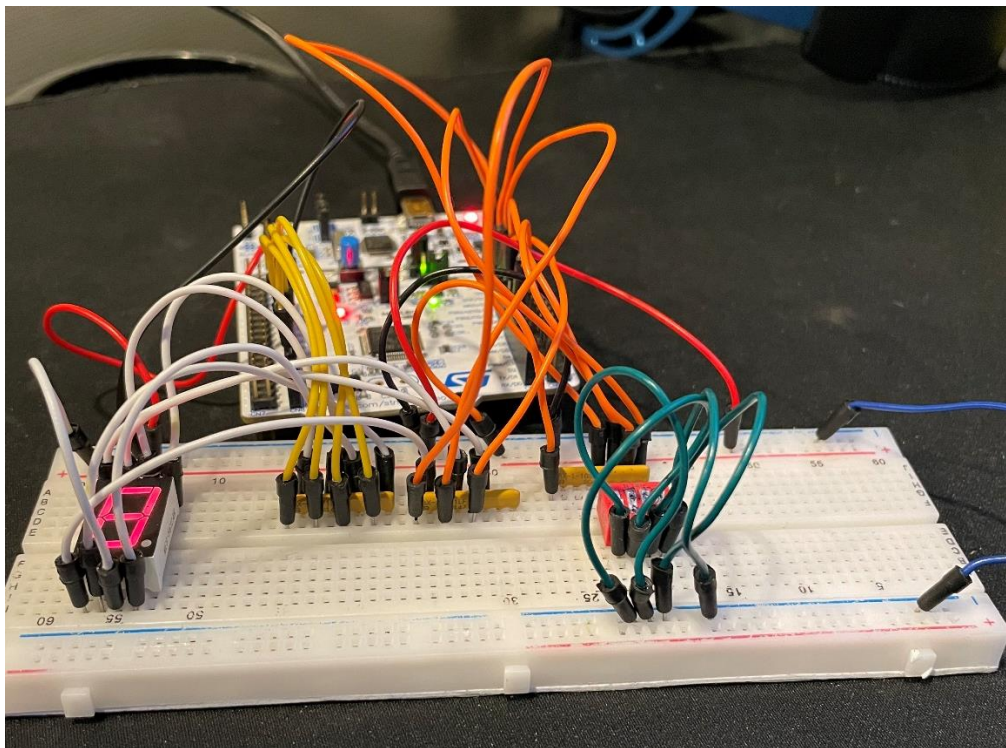

Figure 3 - A better view of how these wires are connected onto the Breadboard from the Pins.
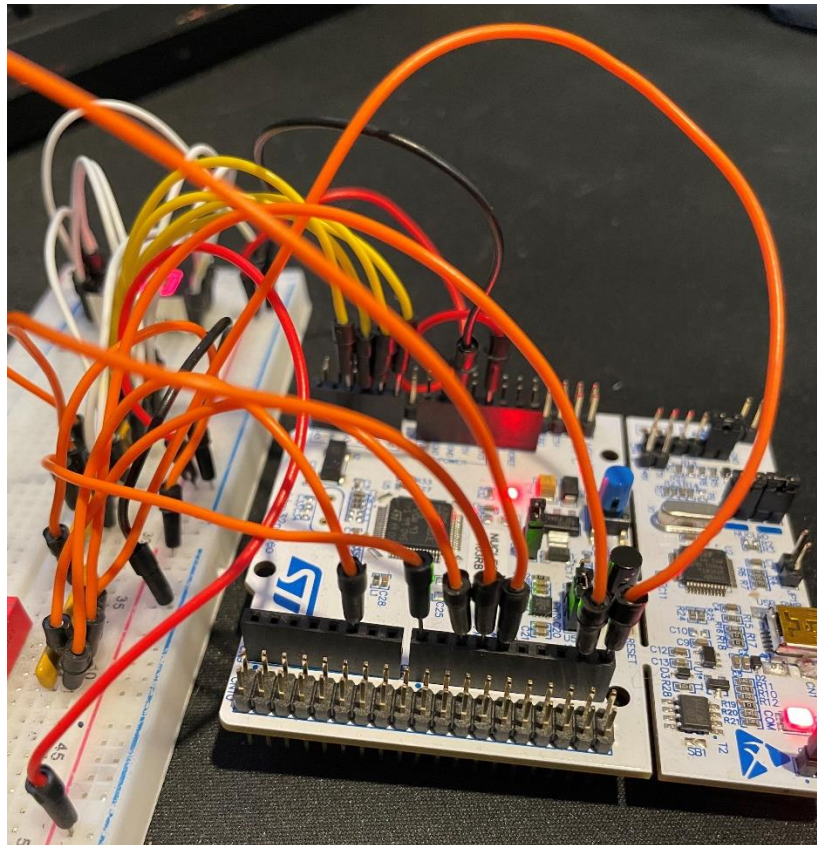
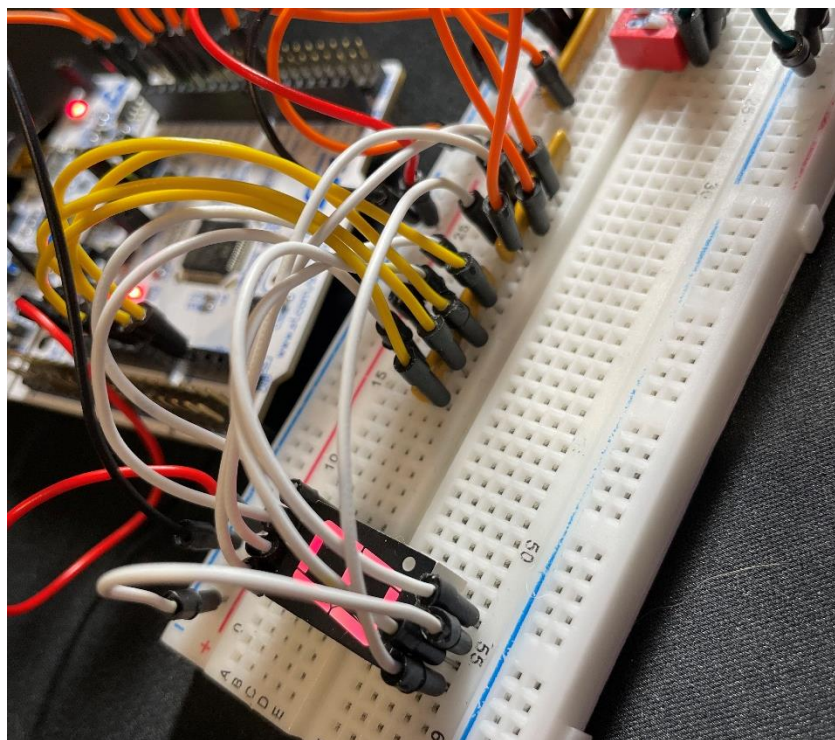*Figure 4 - More wires on the NUCLEO board for the LEDs AND the Switches*

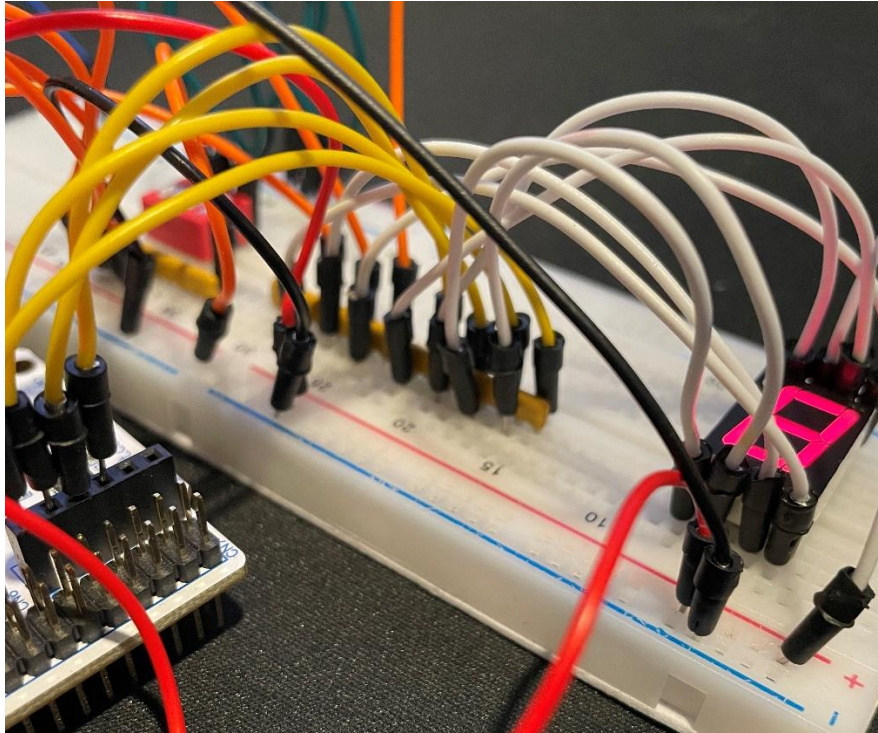*Figure 5 - A clear image of the wiring for the Seven Segment Display*
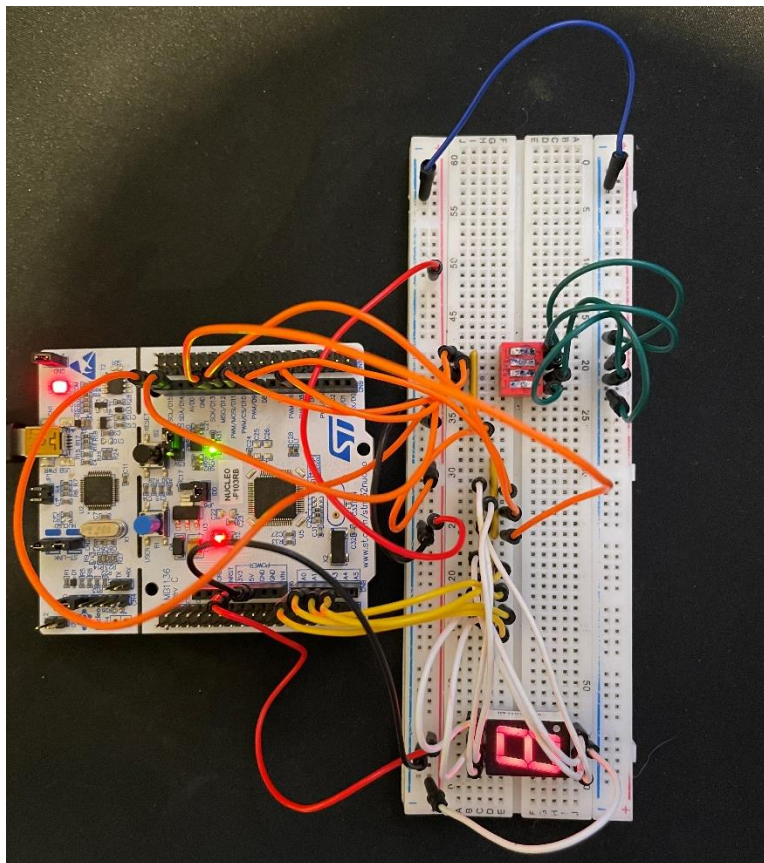
Figure 6 - Wiring for the Seven Segment Display on the other side

Figure 7 - Top Down view of the entire circuit.