

BattleShips Hardware Documentation

Requirements:

NUCLEO-F103RB  
270 Ohm Resistors  
10000 Ohm Resistors  
4 Position DIP Switch  
7-segment-display (cathode)  
Various Wires

Information

This document contains various figures to support the writing for the BattleShips game, there are two main components the switch and the 7-segment display - the push button and green LED are embedded into the board.

Please follow the wirings carefully, but feel free to deviate as long as the signals reach the correct ports.

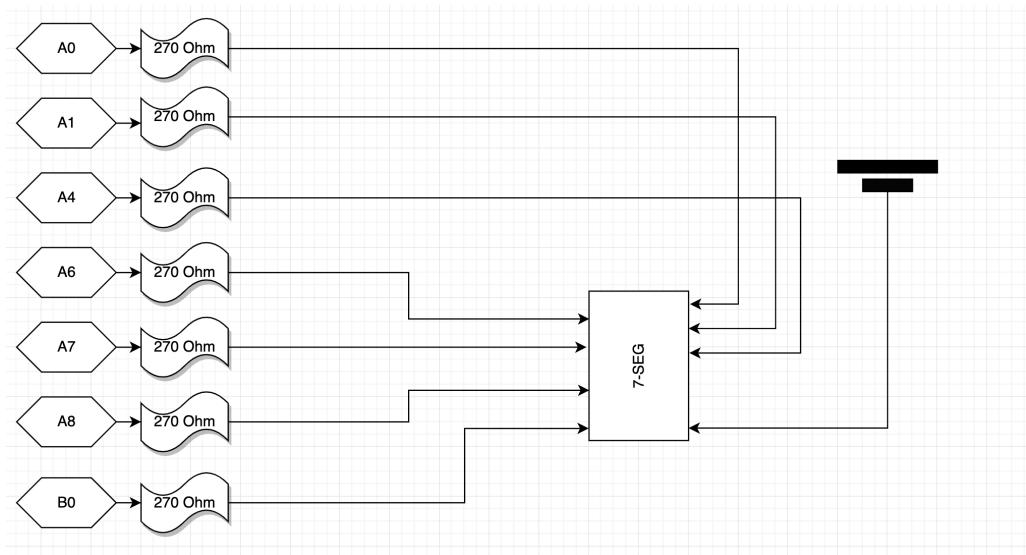
The first page contains the wiring diagrams for both the switches and the 7-segment-display, the next two contain figure 1 and figure 2 which are connections to the Nucleo Board. Lastly, there is a page which contains a top-down view of the breadboard of my construction.

For the seven segment display to make wiring easy it is recommended to wire it in the following manner for segment to port connections:

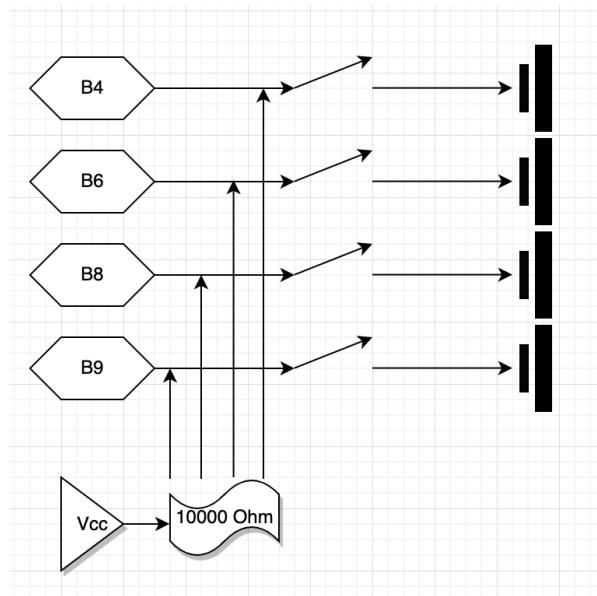
A0 -> a  
A1 -> b  
A4 -> c  
A6 -> d  
A7 -> e  
A8 -> f  
B0 -> g

For the switches, it does not matter the order but the code will assign B4, B6, B8 and B9 in the order of value of 1, 2, 4, and 8.

Wiring Diagram:



7-segment Display Wiring



Switch Wiring

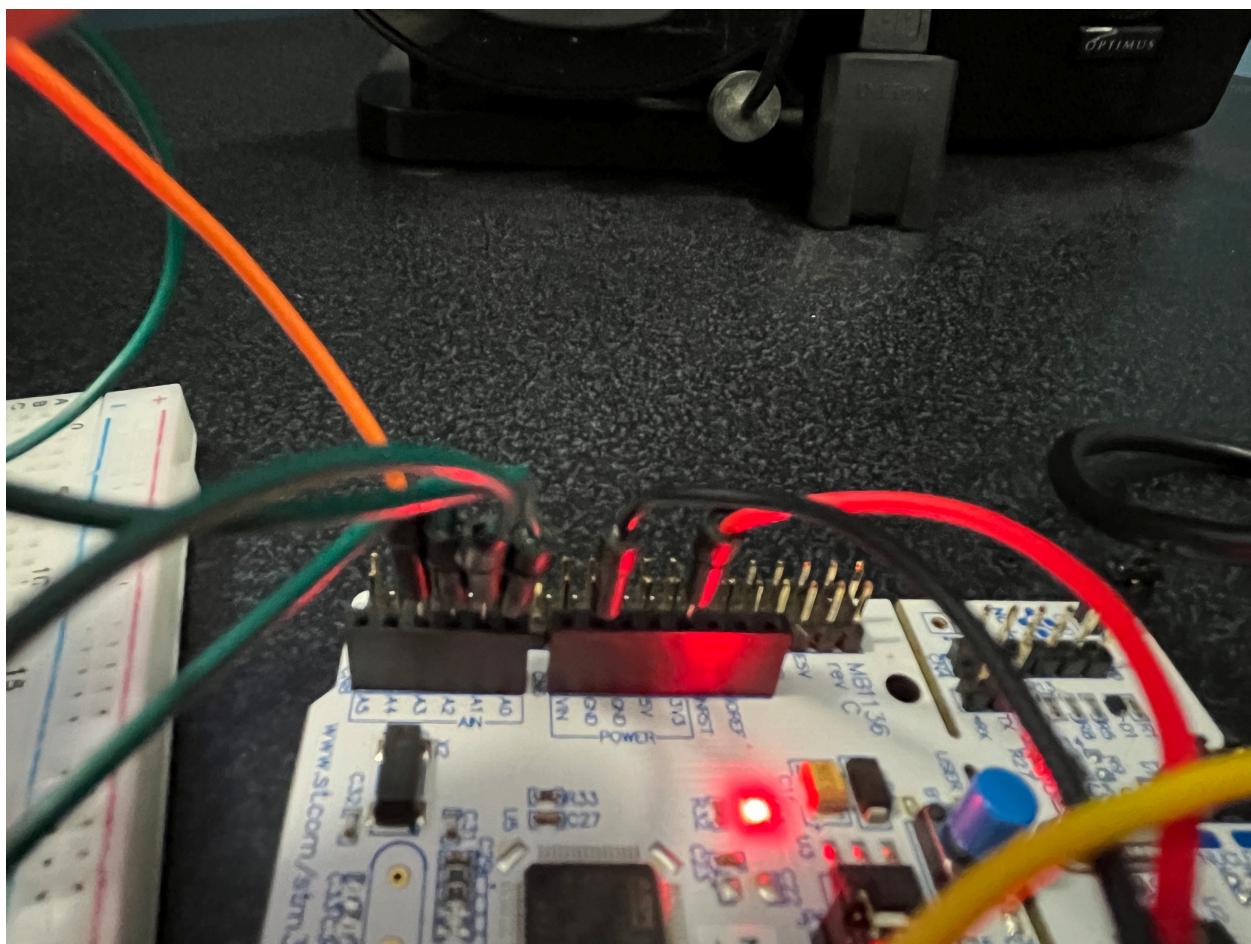


Figure 1.0

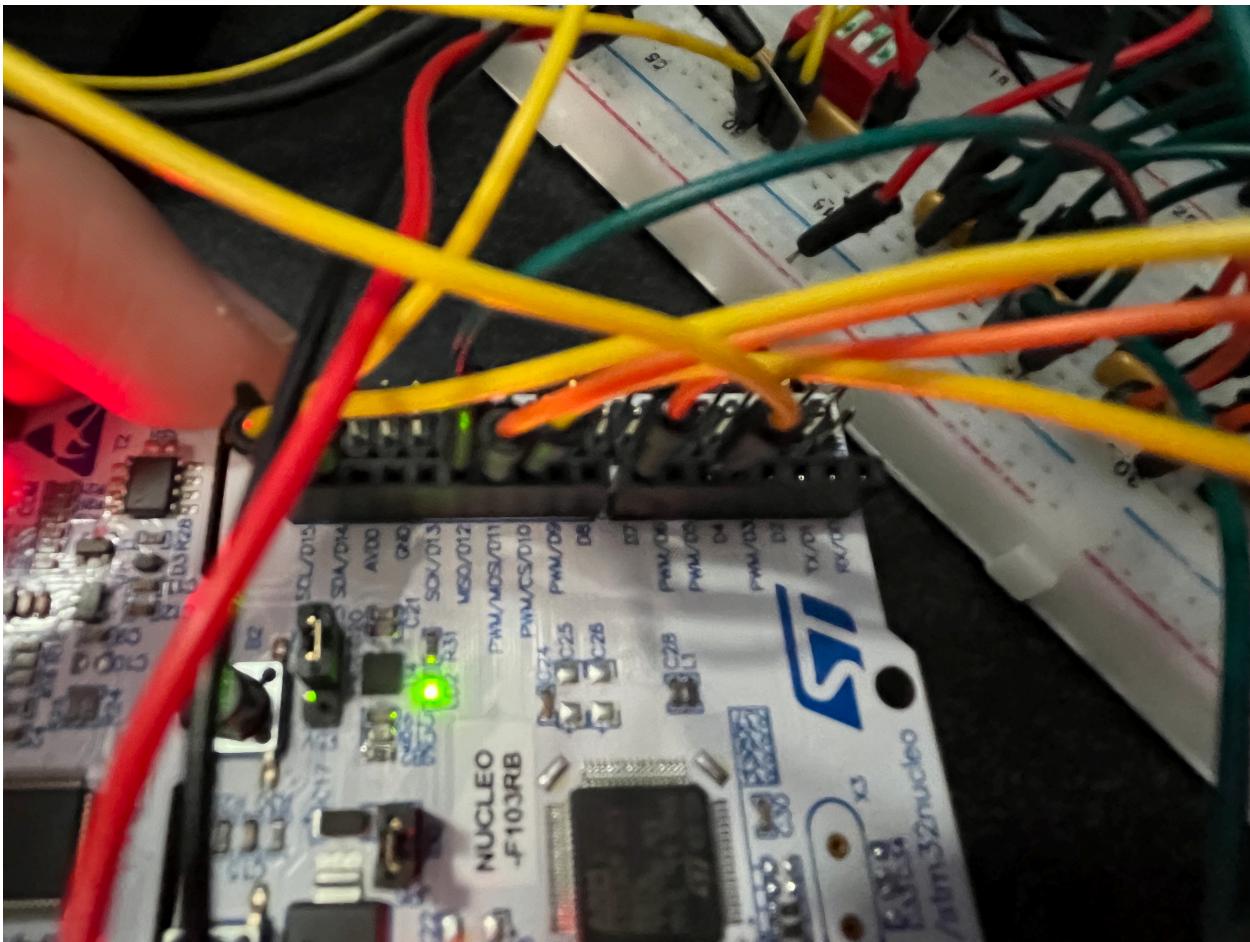


Figure 2.0

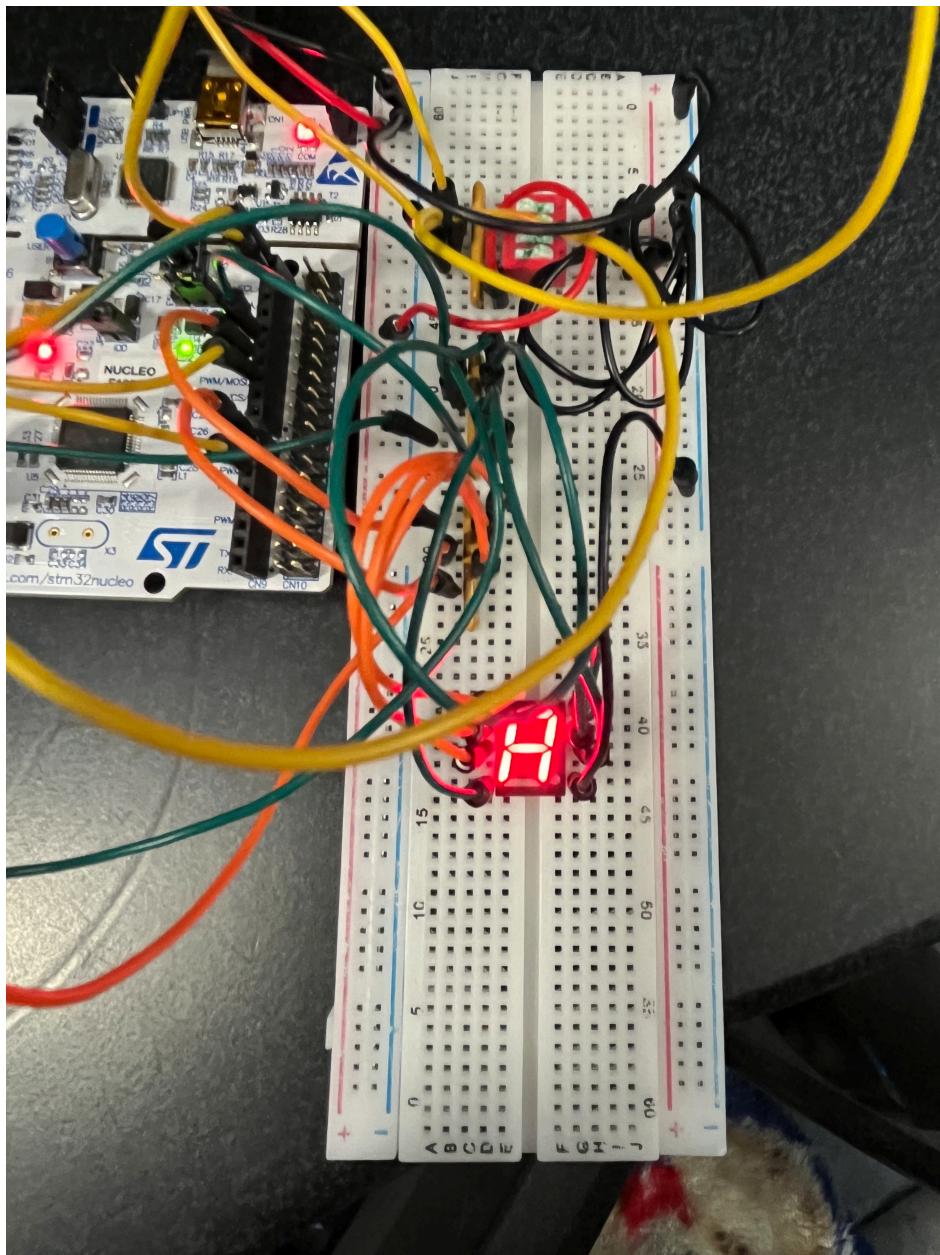


Figure 3.0