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| Instructor Use |
| Correctness (\_\_) \_\_\_\_\_  Style (20) \_\_\_\_\_  Report (15) \_\_\_\_\_  Presentation (5) \_\_\_\_\_   Subtotal \_\_\_\_\_  Late Penalty \_\_\_\_\_ Score \_\_\_\_\_ |

Program 5: Battleship

Level Attempted: 100 with Extra Credit

Jeremiah England

CpS 209

March 19, 2018

# Program Report

Time Designing, Writing, and Debugging: 18 hours

## Requirements Implementation Summary

The following requirements have been implemented:

* When the program starts, draw two 5x5 grids on the window: one for the player, and one for the computer. Place 3 ships on both grids (one of size 1, another of size 2, another of size 4). Display both the player’s ships and the computer’s ships.
* Allow the human player to indicate which cell to attack by clicking on the cell. Indicate clearly the results of the attack by updating the computer’s grid.
* After the human player attacks, have the computer player randomly choose a cell to attack. The selected cell must be either a Ship cell or a water cell. Indicate the results of the attack by updating the player’s grid, as well as visually highlighting the cell in the player’s grid that was attacked. Only the most recently attacked cell should be highlighted.
* When the game ends, display a dialog box that indicates the winner.
* All ship placement logic and game play logic must be located in methods in the object model (not in the GUI).
* Create a new project named Battleship with three projects: BattleshipClient, BattleshipServer (both WPF Apps) and BattleshipModel (a .NET Framework Class Library).
* When the user clicks Connect, send a message to the server requesting the state of the game board, and display the state. When the user clicks Refresh, also send a message and display the latest state.
* When the user takes a turn, send a message to the server and have the server process it and respond with a message that is used to update the GUI.
* Implement random ship placement. Do your best to ensure that ships are not adjacent.

The following requirements have not been implemented:

All requirements were implemented.

## Bug Summary

1. If the player clicks rapidly on the buttons such that the sever gets behind the messages. The program can close.

## Academic Integrity Report

By affixing my signature below, I certify that the accompanying work represents my own intellectual effort. Furthermore, I have received no outside help other than what is documented below and/or in program source code comments.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Signature

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| --- | --- | --- | --- |
| **Date** | **Name / Email / URL** | **Nature of help** | **Time spent** |
| 03/16/18 | Zach Hayes | We talked in his room while about how to make the server accept more than one client. | 30min |
|  |  |  |  |

## Other Remarks

I literally remembered that this report was due at 12:10 today. That’s why all the requirements are your words.