**SEIS635 Section 1 Project 2: Battleship**

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https://github.com/joehizzle/BattleShip.git

For our project we chose to find a game built in Java that needed to be improved on as we were all beginning programmers in our group. We found a program on github (https://github.com/MrNoyce/BattleShips) that had basic features and comprised of 2 classes. To improve the game, created more classes to give the game a better design. We improved the board used in the game by using numbers as the x coordinates and letters as the y coordinates as the original github game only used numbers. Doing this required us to add methods to convert the inputs to match the game board. The original github game had both the computer and player playing on one board which came with issues such as when the player was setting their pieces, if the player set their pieces on a coordinate already chosen by the computer, the program would let you know the spot was already chosen therefore revealing the position of the computer. We improved the game, so the player and computer set their pieces on their own separate boards. The original github game did not have exceptions for when the player would input guesses out of bounds and would error out. We added exceptions to catch input errors that would be out of bounds as well as incorrect input types.

Our battleship program is simulating the classic Battleship board game. The player begins with inputting their name and selecting where they would like to place their ships (5). The computer will pick their own location for their ships. The player will then try to guess the location of the computer’s ships by inputting the x and y coordinates of where the computer’s ship might be. Once all the ships of either side are sunk, the game ends.

Our program is comprised of 4 classes: Battleships, Game, Player, and map. The Battleship class has the methods for the player and computer’s coordinate guesses and methods for converting inputs to their needed format. The Game class has the method that will start/end the game and keep track of scoring. The Map class builds the maps used in the game. The Player class includes the methods for the player and computer to deploy the ships.

Once the program is started, the player will enter their name and start entering the coordinates for where they want to place their ships. The coordinates will need to be a number between 0 and 9 for the x value and A through J for the y value. The player will need to deploy 5 ships to advance the game. Once the player’s ships have been set, the computer will set their own ship positions. The player will then try to guess where the computer’s ships are located by entering the coordinate of the guess. If the player’s guess does not hit a ship, it will be the computer’s turn and the miss will be marked with a “1”. If the player does hit the computer’s ship, the guess will be marked with a “^”. Once the player or the computer have sunk all 5 of their opponent’s ship, the game will be over.