

Design Document

Scope:

This Battlefield game will be a two-player, one computer based game; players will trade off between turns, whether it be placing ships or taking shots at a targeting board. There will be an OpenGL GUI interface that takes a somewhat minimalistic 2-d approach to the game with the primary user input being mouse clicks upon the interface.

General Structure:

- 1) There will be a Board class containing variables allowing for access and potentially manipulation of size. The default constructed board will have the regular board size of 10 squares a side. The board will be responsible for the handling of its contained cells, the placement of ships, and firing upon the opponent in tandem with glut functions.
- 2) There will be a Cell class containing the bounds of a cell for the purposes of determining if a mouse is in range for the GUI, a boolean to determine if a cell is occupied, and a function to determine which ship is within a cell for attacks. Cells will also be responsible for containing information in the form of booleans regarding whether a shot was a miss or a hit, and whether or not the associated ship has been sunk.
- 3) OpenGL is used for the GUI interface of the board, with the glut libraries included for display and user input.
- 4) The Catch testing interface for C++ will be used for creating and conducting unit tests.

UML Class Diagram



