



**University of New Brunswick
Faculty of Computer Science**

Course: **CS2043 - Software Engineering I**

Deliverable #: 02

Instructor: **Natalie Webber**

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Project group members:

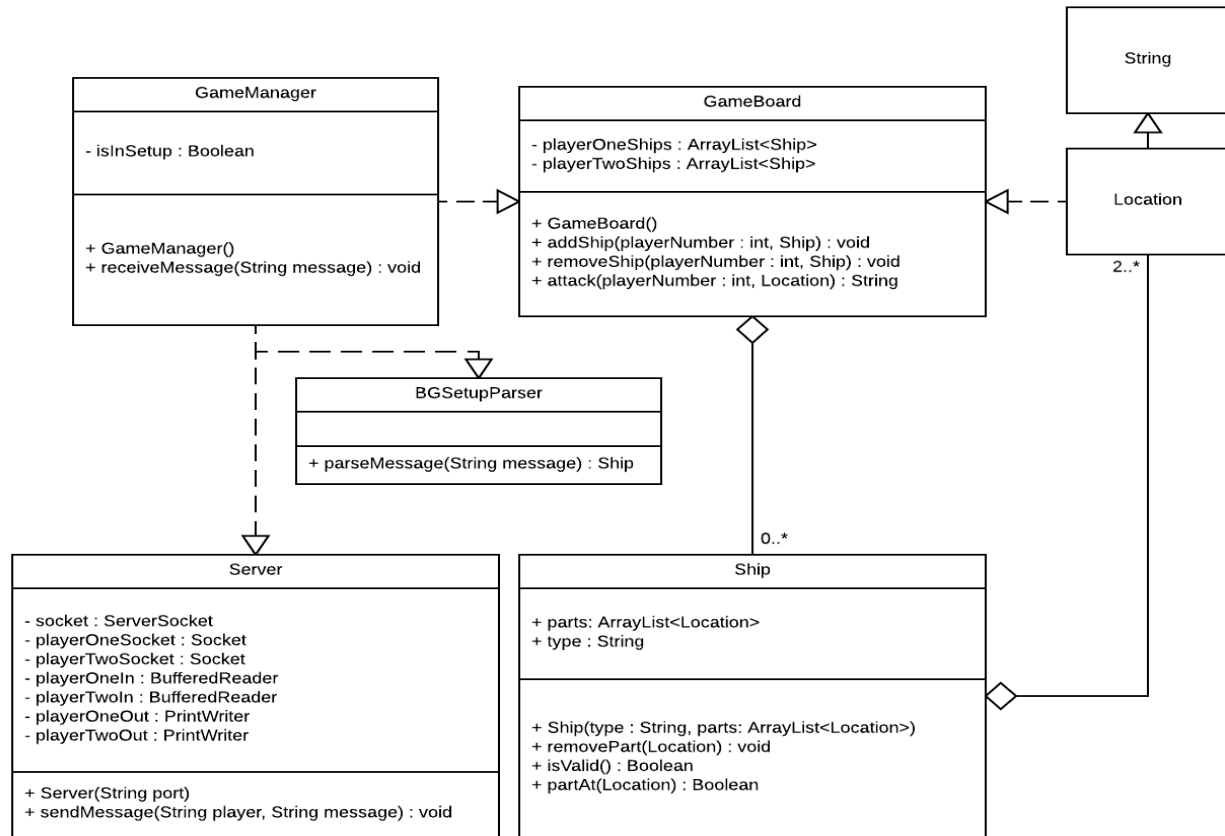
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Table of Contents

| | |
|-----------------------|---|
| UML Diagram | 3 |
| UML Description | 4 |
| Time Sheet | 5 |

UML Diagram



UML Description

The **GameManager** class is responsible for starting the server and for handling the game logic. It contains a Boolean flag to track if the game is being setup or if the game has begun. Its constructor starts the server, and its `receiveMessage()` method is called by the server whenever the server receives a message from the user.

The **Server** class is responsible for handling connections with the user and passing data between the user and the **GameManager**. It contains the socket that the server uses to accept connections, the sockets for player one and player two, a `BufferedReader` for players one and two, and a `PrintWriter` for players one and two. The `BufferedReader` is used to read from the players' sockets, and the `PrintWriter` is used to write to the players' sockets. The server's constructor takes in the port number to open a connection on as a `String`, and the `sendMessage()` method sends a message over the appropriate player's socket.

The **BGSetupParser** is responsible for parsing the setup messages from the **GameManager** and returning correctly constructed ships. It contains one method, `parseMessage()`, that the **GameManager** calls if it is in the game setup phase, and which returns a correctly constructed ship or null if there is an error in constructing the ship.

The **GameBoard** is responsible for keeping track of the current state of the game and for manipulating the state whenever the **GameManager** requests it to. It contains a list of both player's ships. Its constructor initializes the lists of ships. The `addShip()` method adds a ship to the specified player's list; the `removeShip()` method removes the ship from the specified player's list; the `attack()` method attempts to attack a ship in the specified player's list, returning the result of the attack (e.g. hit, miss, sunk).

The **Ship** is responsible for holding a single ship's parts and allowing those parts to be modified. It contains a list of the locations of a ship's parts and the type of the ship. Its constructor constructs a new ship from a type and a list of locations; its `removePart()` method removes the part at the specified location; its `isValid()` method returns true if all of the ship's parts are in valid locations; its `partAt()` method returns true if there is a part at the specified location.

The **Location** class is simply a renaming of Java's `String` class in order to make the design clearer when the design wishes to deal specifically with the location of a ship's part rather than simply a string indicating e.g. the name of the ship or a message passed to the server.

Time Sheet

| Activity | Start | Completion Date | Num Hours - Shane Pelletier | Num Hours - Andrew Hampton |
|---------------------------------------|--------------|------------------------|------------------------------------|-----------------------------------|
| Prepare Project Plan | 2017-01-13 | 2017-01-24 | 1.5 | 1.5 |
| Prepare UML diagram and documentation | 2017-01-24 | 2017-02-02 | 1.5 | 1.3s |