BattleShip Game User Manual

1   Introduction

This is the user manual for the BattleShip Game. You may find detailed program usage and error message explanations here.

2   GUI

2.1   Starting GUI

To start the GUI, follow the command in `README.md`. It may take a while for the application window to appear.

2.2   Basic Steps

2.2.1   Set up a Server

In order to start a game, first, a server needs to be set up.

Choose server mode and enter all necessary information. The server will then await client connection.

Next, open another program in Client mode. Here is an example of what will be asked when starting the program as a client.

Player Name Limitation   Player names can now only use characters in `a-zA-Z0-9` with a length of 1-20. The program will repeatedly ask for information if the standard is not met. Currently, the server and the client may have the same player name. **It is recommended to use different names during gameplay.**
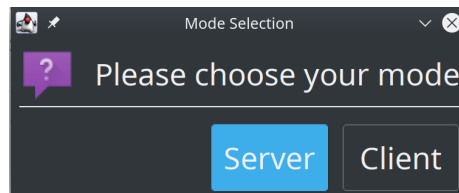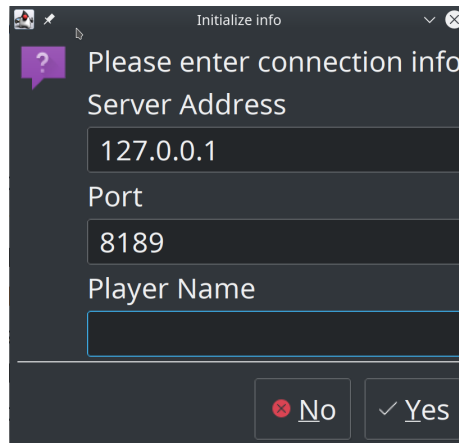

Figure 1: Enter Select Server/Client
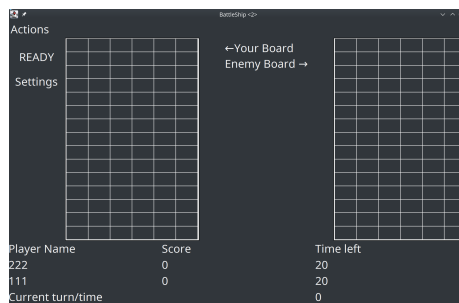
Figure 2: Client Set Up

Figure 3: Main Game Frame

Network Issue If you enter incorrect network information (address/port), the program will fail and exit.

2.2.2 Main Frame

When the client and server finish syncing, the main frame will be shown as follows:

The left board is the player board, where players will set up their ships. The right board represents the enemy's board where the player will try to hit enemy targets.

Set Ship To start, both players need to set up the ships on their board first. To set a ship, click on any cell where you would like the ship to be located. The cell you clicked will be the head of the ship.

Two follow-up dialogs will allow you to:
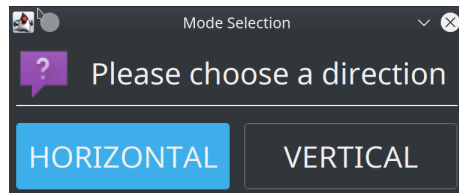
- Choose which ship to add
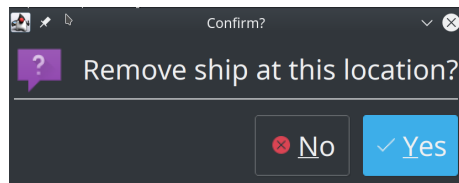
Figure 4: Setting Ship

Figure 5: Removing Ship

- Choose ship direction

After setting a ship, the player board will show the corresponding cell using the 'X' sign. To remove a ship from the location, click the cell with the 'X' sign, and it will remove the ship at that location. The cell does not necessarily need to be the head of the ship.

When all ships are set, any further clicks will bring up the following message:

Start the Turn Once you are ready, click on the ready button on the left panel. Once both players are ready, the following notice will appear:

The game has officially started. The turn and time will be shown on the status board below:

When it is your turn, click on the enemy board at a coordinate that has not been discovered. If there is a ship, an 'X' will show on the cell.

On the enemy's point of view, they will see the block discovered like the following:

The win condition will be:

- When the first player reveals all of the enemy's ships

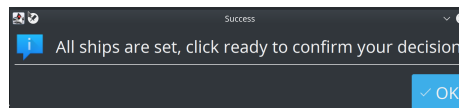- If the enemy didn't make a move during the given time frame
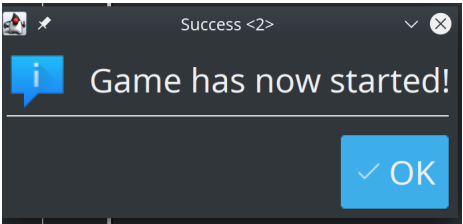

Figure 6: Confirm Ship Set

Figure 7: Game Status

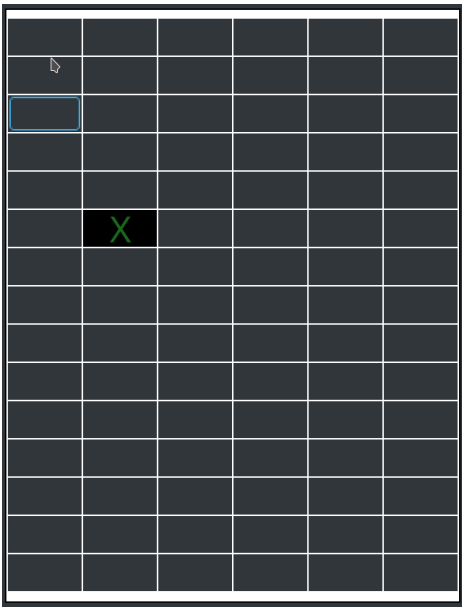| Player Name	Score	Time left
222	0	20
111	0	20
Current turn/time	111	18

Figure 8: Hit Notification
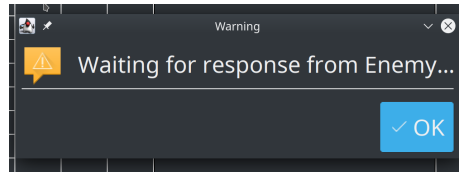

Figure 9: Enemy's Perspective
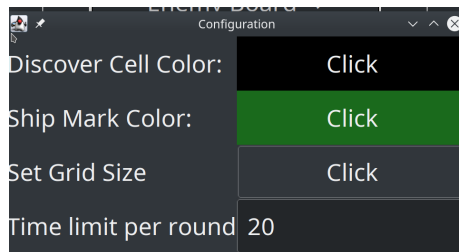
Figure 10: Next Game Prompt

Figure 11: Config Panel

Once one of the conditions is met, a result page will show, and both players can decide whether to move to the next game or not. The first player to click the next game will be prompted with the following:

Once the enemy has decided to play the next game, click on OK to start the new game.

You may change the UI of the application by editing the configuration. To open the configuration panel, use the `Settings` button on the toolbar or the `Configuration` button under the `Actions` menu.

Please do not edit settings during game turn.

Notice:

- **'Grid Size'** and **'Time Limit'** will be synced from the server if the program is started in client mode.

- All changes will take effect after the program restarts.

- There is no ship configuration for now.

Colors You may change the color of the discovered cells and the mark color over it. Simply click the color blocks on the right column, and a color chooser panel will appear.

Once you have decided on a color, click OK. Your settings will be saved.

Notice: All color configuration won't be synced with the client.

Time Limit per Round Time (in seconds) each move needs to be done. The minimum number of seconds allowed is 5.

Grid Size   The size of the grid. When clicked, a dialog will prompt current settings, and you may change at this point. Row and column must be larger than 0, and the total number of cells must be at least 17 so that all ships can fit in the grid.

Note: Once you have finished setting up, you may close the configuration by clicking X on the top right. **Your changes will be saved immediately after you have changed the value. For a text field, please press ENTER to confirm your decision.**

Typing and Number   For the input box to accept a number, **please press ENTER to confirm**, and if the input cannot be parsed as a valid number, a warning will be given. Please double-check your input and try again.

3   Error Messages

Here are some examples of the error messages:

- **Ship Overlapped**
  When setting the ship, there may be another ship already blocking the way. Please double-check your input.

- **Please Wait for Your Turn**
  When you click the enemy board when it is not your turn, this warning will be given.

- **Invalid Coordinate [x y]**
  Some part of the ship will be out of the map range. Please double-check your input.

4   Limitations

Currently, there are some limitations/inconsistencies you may find during gameplay:

4.1   Unstable Network

This game currently does not tolerate any network issues, including latency longer than 2 seconds. You may find the game behaving abnormally under bad network conditions.

4.2   Client/Server Exit

If either Client or Server exits during gameplay, the other side won't be notified, and their game will freeze.

4.3 Starting Game

The starting notice mentioned above **may be postponed for around 3 seconds after both sides are ready due to some final data synchronization and time frame adjustment.**

4.4 Notification

Please dismiss any dialogs as quickly as possible, as they may block the game process. Failing to do so may lead the game out of sync.

4.5 Time Count

Currently, time limits are counted by the players themselves. There may be around 1-2 seconds of display delay, but the real-time count should still be correct.

4.6 Long Initialization Time

When the program is generating maps (new map), it might be slow to respond. Please be patient.

The suggested size of the map is no larger than 30x30.