1 Requirements

- Add a basic client GUI

- Add controls to client GUI

- Display map on client GUI

- Implement CHANGE on the server for nearby players

- Have the client GUI refresh the map on CHANGE

- Add a basic server GUI

- Display map on the server GUI

- Allow the user to control the server from the server GUI
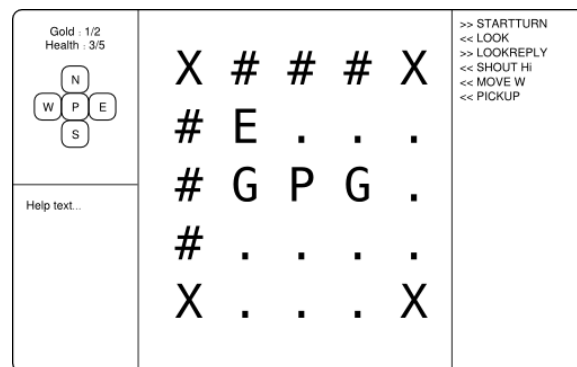
2 Design

2.1 GUI Design

Figure 1　Client GUI

3 Test Plan

The body of 𝔏𝔞𝔟𝔶𝔯𝔦𝔫𝔱𝔥 𝔬𝔣 𝔇𝔬𝔬𝔬𝔪 code is tested in an automated fashion, by a JUnit-based test suite augmented by Cobertura, an instrumenting coverage-measurement tool. These are run as part of my build process, using ant.

Figure 2 Server GUI

However, interfaces are difficult to test automatically, and so the server and client code was tested in the following fashion:

3.1 Server

- Start the server.

- Connect a client; ensure that it appears on the map.

- Disable connections and ensure that a new client cannot connect.

- Enable connections and ensure that a new client can only connect using the new port.

- Move the client. Ensure that the change appears in the server.

- Disconnect the client. Ensure that the client disappears from the server display.

3.2 Client

- Start a server.

- Start a client; connect it to the server with a name. Ensure that the server registers the correct name and displays the clients' commands.

- Connect another client. Position the clients so that they can see one another. Ensure neither crashes.

- Ensure that the client shows the map as stored in the file.

- Move the client. Ensure that the player moves on the server and the other client.

4 Marking Table

Feature	Marks	Works?	Works?	Notes
Client GUI	15	Yes		In JAR dooom-client.jar; compile with `ant client-jar` and run with `java -jar dooom-client.jar -h [host] -p [port] -n [username]` if necessary (defaults are the same as the server)
Graphic pane	10	Yes		None
Graphic update	10	Yes		None
Server GUI	10	Yes		In dooom-server.jar; compile with `ant server-jar` and compile with `java -jar dooom-server.jar [-p port] [-m map]`; map defaults to maps/default.map.