

Test Plan

This is the test plan I will use to test my program.

| Test | Expected Results |
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| Main Menus | |
| On the title menu press single player | Menu shows two text fields and two play buttons |
| On the title menu press multiplayer | Menu shows two buttons one for hosting and one for joining |
| On the single player menu press a play button with a non-existent map name | Error Message is displayed |
| | User is kept on the same menu |
| On the single player menu press a play as human with a name entered into the name field | User is taken to the human player GUI |
| | Server says hello using the users name |
| | Server says the goal gold |
| | User's turn starts |
| On the single player menu press a play as bot with a name entered into the name field | User is taken to the bot selection menu |
| | Server says hello using the users name |
| | Server says the goal gold |
| | User's turn starts |
| | Bot starts moving |
| On the single player menu press a play button with no name in the name field | User is taken to the correct GUI |
| | User is auto assigned a name in the Hello statement |
| On the multiplayer menu press Host | User is taken to the host menu where two text fields a checkbox and a button is present |
| On the multiplayer menu press Join | User is taken to the join menu where two text fields and a button is present |
| On the Host menu press start with a non-existent map name | Error Message is displayed |
| | User is kept on the same menu |
| On the Host menu press start with a non-number port in the port field | Error Message is displayed |
| | User is kept on the same menu |
| On the Host Menu press start with the "play on server" checkbox unticked | The server menu is launched with no more menus |
| On the Host Menu press start with the "play on server" checkbox ticked | The server menu is launched alongside the play network game server |
| On the Join Menu press Join with a non-number port in the port field | Error Message is displayed |
| | User is kept on the same menu |
| On the Join Menu press Join with an invalid IP address | Error Message is displayed |
| | User is kept on the same menu |
| On the Join Menu press Join with an IP address of a machine not running the server | Error Message is displayed |
| | User is kept on the same menu |
| On the Join Menu press Join with a valid IP and port number | User is taken to the play network game server |

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| On the network game server press play as human with a name in the name field | User is taken to the human player GUI |
| | Server says hello using the users name |
| | Server says the goal gold |
| | User's turn starts |
| On the network game server press play as bot with a name in the name field | User is taken to the bot selection menu |
| | Server says hello using the users name |
| | Server says the goal gold |
| | User's turn starts |
| On the network game server press a play button without a name in the name field | User is taken to the correct GUI |
| | User is auto assigned a name in the Hello statement |
| On the bot selection menu press the play button | User is taken to the bot selection menu |
| Observe the human player GUI screen | It should contain the game board, message feed and controller |
| Observe the bot player GUI screen | It should contain the game board ,quit button and controller |
| General Player | |
| With Move selected press the directional keys | The character moves around |
| Attempt to move into a wall | The character does not move |
| | An error message is displayed in message feed |
| Attempt to move into a player | The character does not move |
| | An error message is displayed in message feed |
| With attack selected press the directional keys towards another player | The player gets attacked and a message is sent to both players |
| Attack and kill another player | The other player is kicked from the game |
| | The player disappears from the game board |
| | The other player is not assigned a turn |
| With gift selected press the directional keys towards a player when you have gold | Gold is taken from you and given to the player |
| With gift selected press the directional keys towards a player when you do not have gold | Error Message is displayed |
| With gift selected press the directional keys when there is no player there | Error Message is displayed |
| Press Pickup over any item | The item disappears from the tile |
| Press Pickup on gold | You're gold counter increases |
| Press Pickup on a sword you do not have | Your attack damage increases |
| Press Pickup on a sword you not have | The sword is not picked up |
| Press Pickup on a armour you do not have | You take less damage |
| | Your player model is updated |
| Press Pickup on a armour you do not have | The armour is not picked up |
| | Your player model is not updated |
| Move onto an exit tile without enough gold | Nothing happens |
| Move onto an exit tile with enough gold | You win all other players loose |
| Attempt to do an action before the game has started | Error Message is displayed |
| Start the game in the server | Message is displayed |
| | Players can now perform an action |

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| Attempt to do an action when it is not your turn | Error Message is displayed |
| Press end turn | Player's turn is ended and a message is displayed |
| Press quit when not server side | Player exits the program |
| | Game can still continue |
| Press quit when server side | Window closes but server stays running |
| | Game can still continue |
| Bot | |
| Select any bot | The bot never fails other than missing an attack |
| Select the random bot | The bot picks up gold if it doesn't have enough |
| | The bot picks up the lantern if it doesn't already have it |
| Select the Objective bot | The bot path finds and picks up gold if it does have enough |
| | The bot path finds to the exit if it does have enough |
| | The bot path finds and picks up a lantern if it can't find gold or an exit and it doesn't already have a lantern |
| Select the Aggressive bot | The bot will path find and attack other players if it sees them |
| | The bot will path find and pick up gold if it sees them when there is no players around and it needs more gold |
| | The bot will path find and go to an exit if it sees one and if and there is no players and it has enough gold |
| | The bot will path find and pick up a lantern if there is no other target around |
| Select the Friendly bot | The bot will path find and gift to players if it sees them and if it has gold |
| | The bot will path find and gather gold until It can see a player |
| | It will pickup up armour if it sees it and doesn't already have it |
| | It will pickup up armour if it sees it and doesn't already have it |
| | The bot will try to win (in a similar fashion to the objective bot) if it can't find any of the above |

When tests failed the code was readjusted and the test plan was retested. In the end all tests passed.

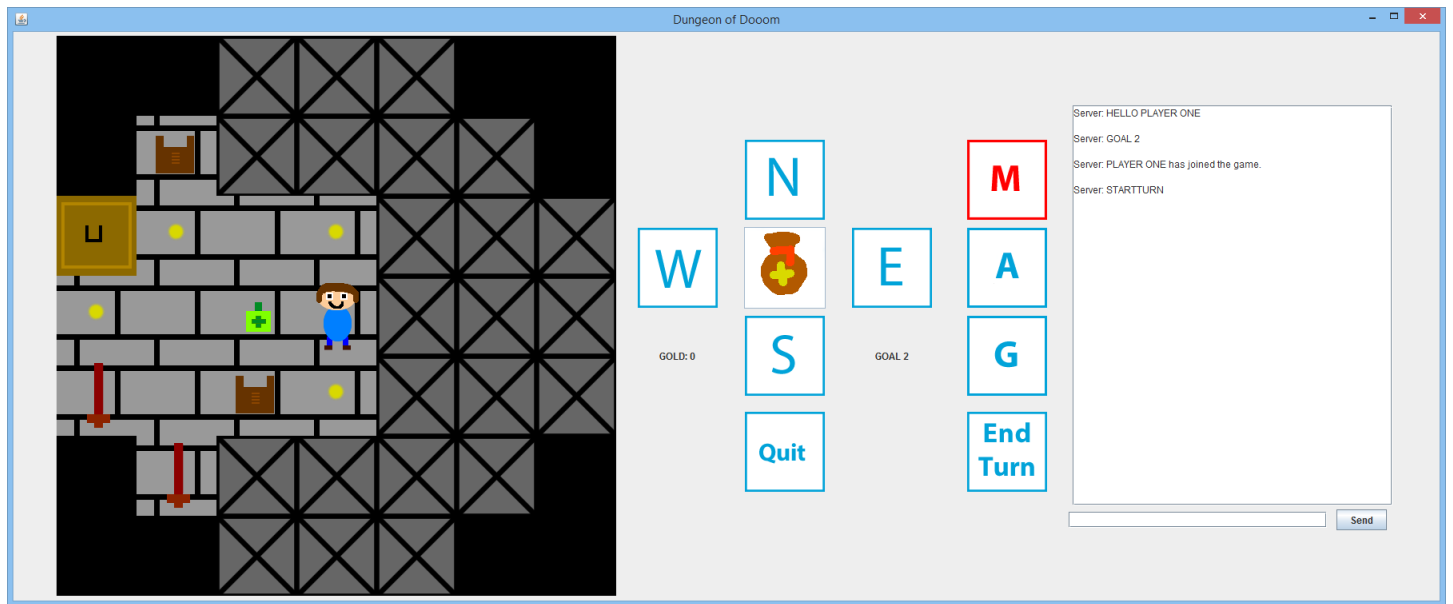
Hot To Use:

| Activity | Steps |
|-------------------------------|--|
| Play Single Player Bot Game | 1- Click Single Player 2- Click Play Bot 3- Click Play |
| Play Single Player Human Game | 1- Click Single Player 2- Click Play Human |
| Host Multiplayer Game | 1- Click Multiplayer 2- Click Host Game 3- Enter in desired port 4- Click start |
| Join Multiplayer Game | 1- Click Multiplayer |

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|--------------|---|
| | 2- Click Join Game 3- Enter in desired port and IP 4- Click Join 5- Click Play Bot or Play Human |
| Chat | 1- In game enter text into field on the right 2- Click Send |
| Move | 1- In game click M for Move 2- Click N, S, E or W to move in that direction |
| Attack | 1- In game click A for Attack 2- Click N, S, E or W to attack in that direction |
| Gift | 1- In game click G for Gift 2- Click N, S, E or W to gift in that direction |
| End Turn | 1- Click end turn |
| Quit Game | 1- Click Quit 2- Click OK |
| Start Server | 1- On the server menu click start server |

GUI Screenshots





Critical Analysis

In this coursework I initially started with a very thought out plan although some alterations were needed to increase efficiency everything mostly went to plan.

The complexity of implementing automatic bots made me remove them from the game in favour of using GUI bots. If I was to redo this I would plan the structure of my program to incorporate non-GUI bots including bots for single player.

The Idea I had for using a communication and user layer between the game and the GUI allowed the GUIs to communicate regardless of whether the server was local or over a network. The main clever feature about these layers is passing the GUI objects into the communication classes and vice versa causing a feedback ability which is very handy for network users. This Idea was very successful.