

Tests

Function Testing

1. Traditional Minesweeper
 - a. Lose a game
 - i. Press new game. A new board should appear. Click on a mine.
 1. Losing screen should appear
 - b. Win a game
 - i. Press new game. A new board should appear. Clear the board.
 1. Winning screen should appear
 - c. Random board generation
 - i. Press new game.
 1. A board should appear that is different from the last board.
2. Create a board
 - a. Ability to make a board
 - i. Click on Menu>Create board.
 1. Size input should appear
 - ii. Input the size
 1. Blank board appears with the correct size
 - iii. Place mines on the board
 - b. Ability to save
 - i. Press save board
 1. Save dialog should appear
 - ii. Input save board
 1. Board is saved
 - c. Ability to select size
 - i. Size prompt should appear when making a board
 - ii. Support for multiple sizes
 - iii. Sizes should be within a reasonable range
3. Play a created board
 - a. Lose a board
 - i. Press Menu>Load
 1. A dialog to load boards appears
 - ii. Select a board
 1. The selected board appears with all blank spaces
 - iii. Click on a mine
 1. Losing screen should appear
 - b. Win same board
 - i. Press Menu>Load
 1. A dialog to load boards appears
 - ii. Select the same board as in part a
 1. The selected board appears again with all blank spaces
 - iii. Clear the board

- 1. Winning screen should appear
 - c. Load a different board
 - i. Win on this board
 - 1. Winning screen should appear
 - d. Load same board from part c
 - i. Lose on the board this time
 - 1. Losing screen should appear
- 4. High Scores
 - a. Complete a board with a score high enough to be added to the list
 - i. A prompt for the name should appear
 - b. Input the name
 - i. Score should be saved
- 5. Trade Boards
 - a. Request a trade
 - i. Press Menu>Find a player
 - 1. Available players are displayed
 - ii. Select a player
 - iii. Select trade board
 - 1. Board selection dialog should appear
 - iv. Select a board to trade
 - 1. Board is traded
 - b. Receive a trade request
 - i. No specifications were given for this, but a dialog should appear when another player initiates a trade, unless trades are meant to be one-way
- 6. Play with opponent
 - a. Request a game
 - i. Press Menu>Find a player
 - 1. Available players are displayed
 - ii. Select a player
 - iii. Select challenge opponent
 - 1. Board selection dialog appears
 - iv. Select board to challenge with
 - 1. Challenge is initiated
 - 2. Chat box appears
 - 3. View of other player's progress appears
 - v. Attempt to clear board
 - b. Receive a game
 - 1. No specifications are given, but a dialog should appear when challenged
 - ii. Challenge accepted
 - 1. Chat box appears
 - 2. View of other player's progress appears
 - iii. Attempt to clear board

- c. Winning player should be displayed correctly after each game
 - i. Win a game against one player then lose against the same player
 - ii. Lose a game against one player then win against the same player
 - iii. Win a game against one player then lose against a different player
 - iv. Lose a game against one player then win against a different player

Performance Testing

- 1. Reliability of the challenge system
 - a. Quickly connects players together
 - i. When connecting, the system should not take very long to connect players
- 2. Reliability of the high score system
 - a. Accurate
 - i. Check that a player's score is correctly put into the high scores
 - b. Not changeable by players

Volume Testing

- 1. High Scores System
 - a. Many high scores
 - b. Lots of the same score
- 2. Game boards
 - a. Attempt to create many boards at once
 - b. Try to save a lot of boards
 - i. See if saving the same board produces an error
 - c. Try to load a lot of boards
 - i. See if loading the same board produces an error
 - d. Big board size
 - i. Attempt to make a board with a size bigger than the screen can support

Stress Testing

- 1. Multiple instances
 - a. Try opening many instances of the application
- 2. Multiple windows
 - a. Try opening many windows in a single instance of the application
- 3. Multiple instances, multiple windows
 - a. Try opening many instances of the application with many windows open on each instance
- 4. Multiples requests to swap boards or challenge an opponent
 - a. Try opening many swap requests or challenges to see if the network is slowed or messages are lost between players

Usability Testing

- 1. See that the interface is simple and intuitive
 - a. Have a friend take a look at the program that does not know the exact specifications and see how well they can navigate the program

Security Testing

- 1. Cheating

- a. Attempt to add an artificial high score to the leaderboards
- b. Attempt to signal a better score to the game before it sends them to the leaderboard