AETD - Arch-Enemy Tower Defense
Group 6

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6. Functional Test Cases

6.0.1 Download the program

- **Description**

  The program should be available to download from our homepage.

- **Test-precondition**

  User must have Internet access.

- **Reference to Requirements Document**

  Section 4.1 page 13.
  Section 6.1 page 18.
  Section 6.3.1 page 22.

- **Input**

  Address to webserver.

- **Output**

  File downloaded to the users computer.

- **Instruction**

  1. Enter the address to our homepage in a web browser.
  2. Click the download link.
  3. Wait until file is downloaded.

6.0.2 Install the program

- **Description**

  The user in our target audience should be able to install the program.

- **Test-precondition**

  Installtion file downloaded to the users computer.

- **Reference to Requirements Document**

  Section 4.1 page 13.
  Section 6.1 page 18.
  Section 6.3.1 page 22.

- **Input**

  Where to install the program.

- **Output**

  Program installed on the users computer.

- **Instruction**

  1. Run the install file.
  2. Choose install path.
  3. Wait until the installation finish.

6.0.3 Configure game settings

- **Description**

  Alter settings such as player name.

- **Test-precondition**

  User is in the main menu.

- **Reference to Requirements Document**

  Section 4.1 page 13.
  Section 6.1 page 18.
  Section 6.3.8 page 27.

- **Input**

  Users choice of alterations to game settings.

- **Output**

  Selected game settings have been altered.

- **Instruction**

  1. Click on the "Settings" button.
  2. Alter the settings as prefered.
  3. Click on the "Save" button to save and exit to main menu.

6.0.4 Play singleplayer game

- **Description**

  A game-mode for only one player that does not require an Internet connection.

- **Test-precondition**

  User is in the main menu.

- **Reference to Requirements Document**

  Section 4.1 page 13.
  Section 6.1 page 18.
  Section 6.3.2 page 23.

- **Input**

  None.

- **Output**

  The single player game starts.

- **Instruction**

    1. Click on the "Start singleplayer game" button.

6.0.5 Host multiplayer game

- **Description**

  The user makes his computer the host computer of a multiplayer game that supports 2-4 players.

- **Test-precondition**

  User is in the main menu.

- **Reference to Requirements Document**

  Section 4.1 page 13.
  Section 6.1 page 18.
  Section 6.3.3 page 24.

- **Input**

  None.

- **Output**

  The multiplayer lobby is displayed.

- **Instruction**

  1. Click on the "Host multiplayer game" button.

6.0.6 Join multiplayer game

- **Description**

  The user connects to a host computer of a multiplayer game.

- **Test-precondition**

  User is in the main menu.

- **Reference to Requirements Document**

  Section 4.1 page 13.
  Section 6.1 page 18.
  Section 6.3.4 page 24.

- **Input**

  IP-address to the host.

- **Output**

  The multiplayer lobby is displayed.

- **Instruction**

  1. Click on the "Join multiplayer game" button.
  2. Enter the IP-address of desiered host.
  3. Click on the "Join" button.

6.0.7 Build Towers

- **Description**

  To purchase and place a tower on the playing field.

- **Test-precondition**

  User is in a game and can afford the selected tower type.

- **Reference to Requirements Document**

  Section 4.1 page 13.
  Section 6.1 page 19.
  Section 6.3.5 page 25.

- **Input**

  A valid position where the tower should be built and the type of tower
  the user wishes to build.

- **Output**

  A tower of the correct type is built on the playing field where the user
  specified.

- **Instruction**

  1. Select a tower type from the menu by clicking on its symbol.
  2. Move the mouse to the position on the playing field where the
     tower is to be built.
  3. Click the mouse to build the tower.
  4. Wait until the tower is built.

6.0.8 Select a specific tower

- **Description**

  Select a tower already built on the playing field.

- **Test-precondition**

  Tower built on the playing field.

- **Reference to Requirements Document**

  Section 4.1 page 13.
  Section 6.1 page 19.
  Section 6.3.6 page 26.
  Section 6.3.9 page 28.

- **Input**

  None

- **Output**

  Tower selected gets marked.

- **Instruction**

    1. Click on a tower on the playing field.

6.0.9 Sell towers

- **Description**

  It has to be possible to sell a built tower.

- **Test-precondition**

  User is in a game and has atleast one tower on his playing field.

- **Reference to Requirements Document**

  Section 4.1 page 13.
  Section 6.1 page 19.
  Section 6.3.9 page 28.

- **Input**

  A tower on the playing field.

- **Output**

  The selected tower is sold and removed from the playing field.

- **Instruction**

    1. Select the tower to be sold on the playing field.

    2. Click the "Sell tower" button to sell the tower.

    3. Wait until the tower is removed from the playing field.

6.0.10 Upgrade towers

- **Description**

  All tower types have upgrades that make them more powerful.

- **Test-precondition**

  User is in a game and has atleast one tower on his playing field and can afford to upgrade the selected tower. The selected tower is not already max level.

- **Reference to Requirements Document**

  Section 4.1 page 13.
  Section 6.1 page 19.
  Section 6.3.6 page 26.

- **Input**

  A tower on the playing field.

- **Output**

  The selected tower is upgraded.

- **Instruction**

  1. Select the tower to be upgraded on the playing field.

  2. Click the "Upgrade tower" button to upgrade the tower.

  3. Wait until the tower is upgraded to a higher level.

6.0.11 View individual tower statistic

- **Description**

  See information about the selected tower such as damage per shot, rate of fire etc.

- **Test-precondition**

  Tower built on the playing field.

- **Reference to Requirements Document**

  Section 4.1 page 13.
  Section 6.1 page 20.

- **Input**

  A tower on the playing field.

- **Output**

  Tower statistic is displayed in the tower information box.

- **Instruction**

  1. Click on a tower on the playing field.

  2. Observe tower statistic in the tower information box.

6.0.12 Monster levels

- **Description**

  At set intervals a fixed number of monsters will automatically be sent by the system to the monster starting point of all players playing fields. Each time they are sent, the monsters will be a higher level with increased health. Higher level monsters will give the player more gold once they are killed than lower levels.

- **Test-precondition**

  User must be in a game.

- **Reference to Requirements Document**

  Section 4.1 page 14.
  Section 6.1 page 20.

- **Input**

  None.

- **Output**

  The level of the monster in the monster information box has changed.

- **Instruction**

  1. Observe the level of the monsters in the current wave.
  2. Observe the level of the monsters in the next wave.

6.0.13 Monster movement

- **Description**

  The monsters will automatically move from one side of the playing field to their goal, always choosing the shortest path available.

- **Test-precondition**

  User must be in a game.

- **Reference to Requirements Document**

  Section 4.1 page 14.
  Section 6.1 page 20.

- **Input**

  None.

- **Output**

  Monster is moving on screen.

- **Instruction**

  1. Observe the monster moving on the screen.

6.0.14 Kill monsters

- **Description**

  Monsters have a certain amount of health and when monsters walk in range of a tower, the tower will shoot it causing a certain amount of damage to it. When the monsters health reaches zero, the monster will die.

- **Test-precondition**

  User must be in a game and have built a tower.

- **Reference to Requirements Document**

  Section 4.1 page 14.
  Section 6.1 page 20.

- **Input**

  None.

- **Output**

  Information about how many monster one player has is updated for the other players when in multiplayer mode.

- **Instruction**

  1. Monster passes a tower.

6.0.15 Receive information about monster's health

- **Description**

  The current and maximum health of each individual monsters should be available to view.

- **Test-precondition**

  User must be in a game and a monster must be visible on the screen.

- **Reference to Requirements Document**

  Section 4.1 page 14.
  Section 6.1 page 21.

- **Input**

  None.

- **Output**

  Information about how many health point the specific monster have displayed in the monster information box.

- **Instruction**

  1. The user left-clicks with the mouse on a specific monster.

6.0.16 Send monsters to other players

- **Description**

  When sending monsters to another player, additional monsters will appear on an opponent users playing field. This will cost gold for the player sending the additional monsters and killing them will not yield any gold.

- **Test-precondition**

  User must be in a multiplayer game and have enough gold to buy monsters.

- **Reference to Requirements Document**

  Section 4.1 page 14.
  Section 6.1 page 21.
  Section 6.3.7 page 27.

- **Input**

  None.

- **Output**

  The monster counter is updated in another players information box.

- **Instruction**

  1. The user presses the "Send monster" button on the information box of another player.

6.0.17 Chat with other players

- **Description**

  The users can send text messages to each other.

- **Test-precondition**

  The user must be in a multiplayer game.

- **Reference to Requirements Document**

  Section 4.1 page 14.
  Section 6.1 page 21.
  Section 6.3.10 page 28.

- **Input**

  The message that is to be sent to the other players.

- **Output**

  The text written is displayed on the screen.

- **Instruction**

  1. The user presses the "Chat" button.
  2. The user types the message that are to be sent to the other users and presses the "Send" button.