Technische Universiteit Eindhoven

2IO23 Design Based Learning

Spec and Game

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2 Use Cases

Create match

1. Pre-condition(s): None

2. Trigger: Presses the "Create match" button.

3. Guarantee: A lobby is created.

4. Scenarios:

   (a) Main scenario

      1) The Player presses the "Play" button.
      2) The Client connects to the Server and retrieves the lobby data.
      3) Player presses the "Create match" button.
      4) The player is placed into a new lobby by the server.
      5) The player presses the "Ready" button and sends a message to the server.
      6) The server waits for all players to be ready and tells all players to start.

   (b) Alternatives

      2.1 The client failed to connect. And hence the player is returned to the main menu.

Join match

1. Pre-condition(s): None

2. Trigger: Player clicks on a lobby to join.

3. Guarantee: A lobby is joined.

4. Scenarios:

   (a) Main scenario

      1) The Player presses the "Play" button.
      2) The Client connects to the Server and retrieves the lobby data.
      3) Player clicks on a lobby to join.
      4) The player is placed into a lobby by the server.
      5) The player presses the "Ready" button and sends a message to the server.
      6) The server waits for all players to be ready and tells all players to start.
      7) The game starts.

   (b) Alternatives

      2.1 The client failed to connect. And hence the player is returned to the main menu.
      4.1 The lobby was deleted before the player could join.

Edit options

1. Pre-condition: None

2. Trigger: The player presses the "Options" button.

3. Guarantee: The player's changed options are saved.

4. Scenarios:

   (a) Main scenario

      1) The Player presses the "Options" button.
      2) The Player edits one or several options.

   (b) Alternatives

      2.1 The player does not edit any options and hence no options are changed.

Check how to play

1. Pre-condition: None

2. Trigger: The player presses the "How to play" button.

3. Guarantee: The player is presented a how to play menu.

4. Scenarios:

   (a) Main scenario

      1) The player presses the "How to play" button.
      2) The player is presented a how to play screen.

Check highscores

1. Pre-condition: None

2. Trigger: The player presses the "Highscores" button.

3. Guarantee: The player is presented the highscores.

4. Scenarios:

   (a) Main scenario

      1) The player presses the "High scores" button.
      2) The client presents a high scores screen to the player.

   (b) Alternatives

      2.1 The client failed to connect to the server and hence is presented an empty high scores screen.

Quit game

1. Pre-condition: None

2. Trigger: The player presses the "Quit" button.

3. Guarantee: The game is closed.

4. Scenarios:

   (a) Main scenario
      1) The player presses the "Quit" button.

Move

1. Pre-condition: Player is allowed to move.

2. Trigger: Player presses one of the four move buttons.

3. Guarantee: Player has moved to another location.

4. Scenarios:

   (a) Main scenario
      1) The player presses a move button.
      2) The player is moved to another location.
   (b) Alternatives
      2.1 The player was unable to move to this side, and hence is not moved.

Pick up flag

1. Pre-condition: Player is not already carrying a flag.

2. Trigger: The player moved onto a flag.

3. Guarantee: The player is carrying a flag.

4. Scenarios:

   (a) Main scenario
      1) The player moves on top of a flag.
      2) The player is now carrying a flag.

Activate block

1. Pre-condition: None

2. Trigger: The player moved on top of a block.

3. Guarantee: The player triggers a block effect.

4. Scenarios:

(a) Main scenario

 1) The player moves on top of a block.

 2) A block effect is triggered.

Fire weapon

1. Pre-condition: The player is allowed to fire.

2. Trigger: The player presses the "fire" key.

3. Guarantee: A shot is fired.

4. Scenarios:

 (a) Main scenario

  1) The player presses the "fire" key.

  2) The player fires his weapon.

  3) The player hits an enemy player.

  4) The enemy players health is decreased.

 (b) Alternatives

  3.1 The player misses.

  4.1 The enemy players health is negative. Which results in the enemy player dying.

Deliver flag

1. Pre-condition: The player is carrying a flag. The player is in a valid flag drop zone.

2. Trigger: The player enters a base's flag drop zone.

3. Guarantee: The flag is delivered.

4. Scenarios:

 (a) Main scenario

  1) The player moves into his own base's flag drop zone.

  2) The player delivers the flag.

  3) The player is given his points.

 (b) Alternatives

  1.1 The player enters a neutral base's flag drop zone, and did not claim a base yet. This neutral base becomes his own.

3 Class diagram

4 Message Sequence Chart

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