

Gravity

Group 10

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6 Functional test cases

6.1 Quick Start Help

Description of functionality being tested

A user who doesn't know what the game is about and/or what the controls are, shall be able to get a short summary on these points before starting a game session. The summary shall contain the goals of the game play, together with the currently set controls.

Reference to requirement document

Section 4.1.1.

Expected behavior

A help screen is shown with information about how to play the game and the controls of the game are explained.

Steps to reproduce test

1. Start the game.
2. Select the quick start help in the main menu.
3. Read the quick start help and verify content.

6.2 Map Choice

Description of functionality being tested

Before starting a game session, the user shall be able to choose the map that that session should be played on. If no active map choice is made, the game system shall choose one of the available maps. Each map shall be a definition of the world/environment the player finds herself in while playing a game session.

Reference to requirement document

Section 4.1.2.

Expected behavior

When a game is started after choosing a new map the new map is shown.

Steps to reproduce test

1. Start the game.
2. Select the “start the single player game” menu option.
3. Choose a map.

6.3 Controls Configuration

Description of functionality being tested

Before starting a game session, the user(s) shall be able (but not required) to configure the game controls, i.e., what keyboard keys to use for what action in the game. The game shall provide default controls, allowing the user(s) to change them at any time.

Reference to requirement document

Section 4.1.3.

Expected behavior

If you can choose keys for the controls and after that the chosen keys is used to control the ship(s) in the game.

Steps to reproduce test

1. Start the game.
2. Choose “setup controls” in the menu.
3. Setup keys to control the ships.
4. Return to main menu.
5. Choose “start multiplayer game”.
6. Choose “start game” in the multiplayer game rule choice menu.
7. Test that you can control the ship with the keys chosen in step 3.

6.4 Single Player or Two Players Choice

Description of functionality being tested

Before starting a game session, the user shall be requested to choose whether she wants to play in single player mode or multiplayer mode.

Reference to requirement document

Section 4.1.4.

Expected behavior

When choosing single player mode you get to play by yourself. When selecting multiplayer mode you get to play against one human opponent both using the keyboard to control their ships.

Steps to reproduce test

1. Start the game.
2. Select “start single player game”.
3. See if you're playing in single player mode.
4. End the game.
5. From the main menu select “start multiplayer game”.

6.5 Two Players Game Rule Choice

Description of functionality being tested

Before starting a game session in two player mode, the users shall be able to set a points limit, defining when the game is going to end.

Reference to requirement document

Section 4.1.5.

Expected behavior

You should be able to choose the number of lives before starting a two player game. The game shall end when the set point limit is reached by any of the two players.

Steps to reproduce test

1. Start the game.
2. Choose "Start multiplayer game".
3. Choose number of lives.
4. Play the game until out of lives.

6.6 Single Player High Score List

Description of functionality being tested

Exiting the game, either as a result of losing all ships (game over) or by exiting the game deliberately, shall let the player know about the current high score list and, if she had qualified for a placement on it, request her name. Only exit options provided by the game shall follow this requirement.

Reference to requirement document

Section 4.1.6.

Expected behavior

If the player has reached a number of points enough for the high score list, the player should be prompted for her name. Also the high score list should be shown after a game ends.

Steps to reproduce test

1. Start the game.
2. Choose "Start single player game".
3. Achieve more points than the last entry in the high score list.
4. Lose all ships.
5. Enter name into high score list.

6.7 Exiting The Game

Description of functionality being tested

It shall be possible to exit the game at any stage. While not playing the game, the user shall be able to quit to the operating system. The user shall be prompted if she is sure she wants to quit, when any exit function is chosen. While playing, the user shall be able to choose whether to exit to setup or exit to the operating system.

Reference to requirement document

Section 4.1.7.

Expected behavior

If it's possible to exit to setup and to operating system while playing the game and also to exit to operating system while in setup this requirement is met.

Steps to reproduce test

1. Start the game
2. Test exit button while in main menu and also when a game is started.

6.8 World Boundary Wrapping

Description of functionality being tested

When a player makes her ship to go beyond one of the world boundaries, it shall be “teleported” to the opposite side of the world. For example, going out on the left side shall result in appearing on the right side.

Reference to requirement document

Section 4.1.8.

Expected behavior

When a ship is at the border of the game world it is teleported to the opposite vertical and horizontal border, maintaining its movement.

Steps to reproduce test

1. Start the game.
2. Choose “start single player game”.
3. Move the ship to a border of the game world.

6.9 Player's World View

Description of functionality being tested

The player shall see her ship from above, at a distance that depends on the ship's movement speed. When the speed is increasing, the viewing distance shall increase too. Conversely, when the speed is decreasing, the viewing distance shall decrease too.

Reference to requirement document

Section 4.1.9.

Expected behavior

The zoom-level is proportional to the speed of the ship (more zoomed out the faster the ship moves).

Steps to reproduce test

1. Start the game.
2. Choose "Start single player game".
3. Accelerate the ship.

6.10 Game Play Information

Description of functionality being tested

The player shall be able to see information about her ship's health and fuel amount during the game play. If the game rules say that there should not be any fuel restrictions (i.e., unlimited fuel supply), then information about the fuel amount should be left out.

Reference to requirement document

Section 4.1.10.

Expected behavior

The ship information is visible while playing the game.

Steps to reproduce test

1. Start the game
2. Choose "Start single player game".

6.11 Scoring in Single Player Mode

Description of functionality being tested

Scores shall be gained partly by shooting at asteroids and partly by the time the player managed to stay alive, having three ships (and therefore chances) at her disposal.

Reference to requirement document

Section 4.1.11.

Expected behavior

The points are gained slowly while traveling around, and faster when shooting an asteroid.

Steps to reproduce test

1. Start the game.
2. Choose “Start single player game”.
3. Shoot down an asteroid.

6.12 Scoring in Two Players Mode

Description of functionality being tested

A player shall get rewarded when destroying his opponent's ship with any weapon. A player shall be punished when his ship is destroyed by crashing into some obstacle in the world (including the opponent's ship).

Reference to requirement document

Section 4.1.12.

Expected behavior

The player get points when destroying an opponent, and gets lower score when being killed.

Steps to reproduce test

1. Start the game.
2. Choose “Start Multi player game”.
3. Shoot down the opponent.

6.13 Single Player Ship Disposal (Lives)

Description of functionality being tested

The player shall start having three ships at her disposal. Gaining a certain amount of points shall give another ship. The ships shall not be used simultaneously, but once one is crashed it shall be replaced with a new one if available, otherwise the game ends and the achieved points shall be displayed together with a high score list.

Reference to requirement document

Section 4.1.13.

Expected behavior

If the game information displays three ships when the game starts, and if one ship is removed when the player's ship is destroyed, and if one ship is added when a preset amount of points are collected this requirement is met.

Steps to reproduce test

1. Start the game
2. Choose "Start single player game".
3. Run the ship into a planet.

6.14 Ship Speed Restriction

Description of functionality being tested

A ship's movement shall be restricted in speed. When the speed reaches a set limit, throttling shall not be able to increase it.

Reference to requirement document

Section 4.1.14.

Expected behavior

The player accelerates and reaches this speed no further thrust will accelerate the ship.

Steps to reproduce test

1. Start the game.
2. Choose "Start single player game".
3. Accelerate the ship.

6.15 Ship Fuel Restriction

Description of functionality being tested

A ship shall either have a fuel restriction (when in single player mode) or have an infinite fuel supply (when in two players mode). When there is a fuel restriction, it shall also be a restriction on how much fuel the ship can have at once.

Reference to requirement document

Section 4.1.15.

Expected behavior

If the fuel amount reaches zero no further thrust will be possible. In two player mode no amount of thrust will decrease the amount of fuel available.

Steps to reproduce test

1. Start the game
2. Choose “start single player game”
3. Accelerate the ship until fuel meter is empty.

6.16 Ship Damage

Description of functionality being tested

A ship shall be completely damaged when colliding with other ships, a planet or an asteroid. A ship's damage resulting from a weapon projectile hit shall be defined by the destructive power of that projectile. Complete damage results in ship destruction.

Reference to requirement document

Section 4.1.16.

Expected behavior

The ship shall be destroyed after colliding with a ship, planet or asteroid and the ship shall also resist one shot without being completely damaged.

Steps to reproduce test

1. Start the game.
2. Choose “Start multiplayer game”.
3. Move the ship into another ship, a planet or an asteroid.

6.17 Operating a Ship

Description of functionality being tested

A ship shall be controllable by throttling (i.e., gaining speed in the direction of the ship) and steering right and left respectively. Once a ship's movement and speed is achieved it shall remain constant until its destruction, unless affected by a gravity or its throttling.

Reference to requirement document

Section 4.1.17.

Expected behavior

The ship shall be maneuverable.

Steps to reproduce test

1. Start the game.
2. Choose “start single player game.”
3. Use the configured controls to maneuver.

6.18 Ship Laser Gun

Description of functionality being tested

A ship shall be able to fire laser projectiles. The laser projectiles shall not be affected by planetary gravities. The damage caused by a laser shall be partial. Lasers shall travel fast (in relation to missiles).

Reference to requirement document

Section 4.1.18.

Expected behavior

The ship shall fire a laser.

Steps to reproduce test

1. Start the game.
2. Choose “start single player game.”
3. Press the control associated with firing laser weapon.

6.19 Ship Missile Launcher

Description of functionality being tested

A ship shall be able to fire missile projectiles. The missile projectiles shall be affected by planetary gravities. The damage caused by a missile shall be complete. Missiles shall be slower than a laser projectile, but faster than a ship.

Reference to requirement document

Section 4.1.19.

Expected behavior

The ship shall fire a missile

Steps to reproduce test

1. Start the game.
2. Choose “start single player game.”
3. Press the control associated with firing missile weapon.

6.20 Operating a Ship's Weapons

Description of functionality being tested

The player shall be able to choose which weapon to use before firing it off. The projectile resulting from firing a ship's weapon shall be set off from the ship's current position and in the current direction of the ship (i.e., not ship movement, but where the ship will strive to go when/if throttling).

Reference to requirement document

Section 4.1.20.

Expected behavior

The player shall be able to choose a weapon before firing it. Upon firing the chosen weapon shall be fired.

Steps to reproduce test

1. Start the game.
2. Choose the “start single player mode.”
3. Press the button associated with changing weapons.
4. Fire the weapon.

6.21 Planets

Description of functionality being tested

A planet shall have a gravity which shall affect ships, missiles and asteroids exclusively. A planet shall not move in any way. An object being affected by a planet's gravity shall be pulled towards that planet with a certain strength. Asteroids hitting a planet shall, if that is the rule of the game mode or the map, increase the planet's gravitation.

Reference to requirement document

Section 4.1.21.

Expected behavior

The planet shall attract the players, asteroids and missiles.

Steps to reproduce test

1. Start the game.
2. Choose “start single player game.”
3. Move the ship around the planets.
4. Fire missile.

6.22 Asteroids

Description of functionality being tested

In single player mode, asteroids shall be sent in to the world at an adequate frequency, making the game play challenging enough. In two players mode, asteroids may be sent in at a deliberate frequency. Asteroids shall be destructible, both partially and completely. Partial destruction means that an asteroid is split into two smaller asteroids, while complete destruction means that the whole asteroid is destroyed.

Reference to requirement document

Section 4.1.22.

Expected behavior

Asteroids shall appear in single player mode.

Steps to reproduce test

1. Start the game.
2. Choose the “start single player game.”
3. Move around the game world.

6.23 Items

Description of functionality being tested

In single player mode, items containing fuel shall occur randomly in both place and time in the world, and frequently enough to guarantee that the player has a fair chance to pick them up before running out of fuel. In two players mode, items shall not contain fuel, but instead they shall contain weaponry and ship health upgrades. Items shall appear in free space in the world, allowing a player to pick them up.

Reference to requirement document

Section 4.1.23.

Expected behavior

Items shall appear.

Steps to reproduce test

1. Start the game.
2. Choose “start single player game.”
3. Move around the world.

6.24 Sound Effects

Description of functionality being tested

Sound effects shall be played for each of the following events: collisions, fired weapons, ship throttle and item pickups.

Reference to requirement document

Section 4.1.24.

Expected behavior

When the event occurs the sound shall be heard.

Steps to reproduce test

1. Start the game.
2. Choose “start single player game.”
3. Fire a laser.