TESTING HEALTH-BAR, POWER-UPS, OBSTACLES

**Test case ID:**

PowerUps

**Purpose:**

Verify that user can correctly grabs the collectibles during the race and receive the corresponding advantage regarding the AI-controlled rivals.

This test cases involves FR011 (Health-bar), FR020 (Lanes), FR001 (Player) and FR009 (Legs).

**Test case description**

This test case evaluates the functionality of Speed, HP and Invincibility PowerUps within the game interface. It aims to ensure the player benefits during his journey along the river in an easy and intuitive way and without encountering any issues when appearing randomly down the lane.

**Pre-conditions**

* Prerequisites:

Game is installed and running successfully.

User has chosen a boat and a race scenery.

User is already participating in a race (the difficulty level does not affect)

* Test data:

Not applicable.

**Test steps**

* Steps description:

1. When the player’s boat surpasses the Speed PowerUp’s hitbox, the ship doubles movement speed.
2. When the player’s boat surpasses the HP PowerUp’s hitbox, 25% of the health is automatically added to the health bar.
3. When the player’s boat surpasses the Invincibility PowerUp’s hitbox, the ship becomes oblivious to the obstacles and cannot be negatively affected by these in a time Interval of 10 seconds.
4. If no PowerUps hitbox is surpassed by the boat, the player will not obtain any advantage regarding the rivals.

**Post conditions**

* Expected outcome:

The corresponding booster is correctly applied to the player's boat for each Power-Up collected meanwhile, verifying that no advantages are gained if no PowerUp is collected maintaining fairness throughout the race.

* Cleanup:

Not applicable

**Notes**

This specific test can be performed with any of the boat models available on the “Boat selection” screen.

------------------------------------------------------------------------------------------------------------------------------

**Test case ID:**

Health bar

**Purpose:**

Verify that the item increases and decreases the level shown by the graphical interface regarding the PowerUps or damage caused by collision with obstacles reflects changes in the boat accordingly. This test cases involves FR004 (Obstacles) and FR006 (PowerUps).

**Test case description**

This test case evaluates the functionality of the boat’s remaining health bar within the game interface.

**Pre-conditions**

* Prerequisites:

Game is installed and running successfully.

User has chosen a boat and a race scenery.

User is already participating in a race (the difficulty level does not affect)

* Test data:

Not applicable.

**Test steps**

* Steps description:

1. When the race starts, the health bar is completely full.
2. When the player’s boat surpasses the HP PowerUp’s hitbox, 25% of the health is automatically added to the health bar.
3. When the player’s boat collides with an obstacle (Stone, Duck or Log), the amount of ship’s remaining health decreases a 25% and its current speed is reduced for a short amount of time as penalty.
4. If no PowerUps’ hitbox is surpassed or the boat does not crash with any of the randomly spawned obstacles, health bar remains the same.
5. If the remaining health becomes 0 or lower, the boat becomes unable to continue racing and the game finishes.

**Post conditions**

* Expected outcome:

Health indicator is correctly increased/decreased by 25% depending on colliding object and remains unchanged if no PowerUp is collected or obstacle is hit. Also, the boat is unable to continue racing, and the game ends when the health bar reaches 0 or lower.

* Cleanup:

Not applicable.

**Notes**

This specific test can be performed with any of the boat models available on the “Boat selection” screen. However, depending on the qualities of each of them, the starting health level and the percentage of health increased/decreased will be different for testing purposes.

------------------------------------------------------------------------------------------------------------------------------

**Test case ID:**

Obstacles

**Purpose:**

Verify that randomly spawned along the lane obstacles work correctly, attributing slowing properties and severe damage to the boat hull. This test cases involves FR011 (Health-bar), FR020 (Lanes), FR001 (Player) and FR009 (Legs).

**Test case description**

This test case evaluates the functionality of obstacles such as ducks, logs, and stones within the game interface. It aims to ensure the player sees his navigation along the river negatively affected due to the collision with the obstacles’ hitbox and to prevent any issue when appearing randomly down the lane.

**Pre-conditions**

* Prerequisites:

Game is installed and running successfully.

User has chosen a boat and a race scenery.

User is already participating in a race (the difficulty level does not affect).

* Test data:

Not applicable.

**Test steps**

* Steps description:

1. The duck obstacle appears randomly down the lane and keeps moving side to side (horizontally) with the purpose of hitting the boat.
2. When the player’s boat surpasses a duck obstacle’s hitbox, the ship loses speed and the remaining health attribute indicated with the health bar decreases.
3. The log obstacle appears randomly down the lane and remains static.
4. When the player’s boat surpasses a log obstacle’s hitbox, the ship loses speed and the remaining health attribute indicated with the health bar decreases.
5. The stone obstacle appears randomly down the lane and remains static.
6. When the player’s boat surpasses a stone obstacle’s hitbox, the ship loses speed and the remaining health attribute indicated with the health bar decreases.
7. If no obstacles’ hitbox is surpassed by the boat, the player will not have any disadvantage regarding the rivals.

**Post conditions**

* Expected outcome:

The ship continues racing against the rivals, seeing the navigation penalized in the event of a collision with any of the obstacles and not in any other case.

* Cleanup:

Not applicable

**Notes**

Each obstacle will cause a different amount of damage regarding his size, being the log the heavier one. Regarding the slowing down effect, they all act in the same way.