Unit Test Documentation

Project Name:
Boat Class
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Test Case Overview

Test Case ID:
BT_001;

Purpose:
This test case verifies that the boat's position is correctly updated after calling the ***update*** method with a specific delta time.
Test Case Description:
This test case focuses on testing the behavior of the ***update*** method in the ***Boat*** class. Specifically, it verifies that the boat's position is correctly updated based on its horizontal speed **(speedX)** when the ***update*** method is called with a delta time of 1 second.

Pre-Conditions

Prerequisites:
The Boat class and its dependencies (Position and Texture) must be correctly implemented and available.
The boat image file “boat.png” must be available at the specified path.
The development environment must be configured with Junit.

Test Data:
int speedX = 10;
int speedY = 5;

Test Steps

Step Description:

1. Set up the test environment by creating a boat instance with an initial horizontal speed(SpeedX) of 10, vertical speed (speedY) of 5.
2. Record the initial position of the boat.
3. Call the update method of the boat with a delta time of 1 second.
4. Record the new position of the boat.
5. Compare the expected position change with the actual position change

Post-Conditions

The boat’s position should be updated correctly based on its horizontal speed(SpeedX) when the update method Is called with a delta time of 1 second. Specifically, the boat’s X-coordinate should increase by speedX * 2 pixels.

Cleanup:

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Notes

Ensure that the boat image file “boat.png” exists at the specified path.
The calculation for the expected position change considers the boat’s movement in pixels per second, hence multiplying (SpeedX) by 2.

Test Case ID:
BT_002

Purpose:
This test case verifies the functionality of the ***getLane()*** method of the ***Boat*** class. It ensures that the correct lane is returned by the method.

Test Case Description:
This test case will call the ***getLane()*** method of the ***Boat*** class and verify if it returns the expected lane number.

Pre-Conditions

Prerequisites:
An instance of the Boat class must be created.
The boat object must be initialized with a specific lane value.
The development environment must be configured with Junit

Test Data:
int lane = 1;

Test Steps

Step Description:
1. Setup: Initialize an instance of the Boat class with a lane value of 1.
2. Invoke Method: Call the getLane() method on the boat object.
3. Verify Result: Assert that the returned lane value matches the expected value of 1

Post-Conditions

Expected Outcome*:* The ***getLane()*** method should return the value 1, indicating that the boat is in lane 1.

Cleanup:

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Notes

This test assumes that the Boat class is correctly implemented and returns the current lane number when getLane() is called.

Ensure that the assertEquals method is appropriately configured to compare integer values. This test does not require any external dependencies or complex setup.