Daniel Dotson, Timothy Pitts, Philip Gaver, Isaiah Jayne

Kinser Solutions

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Test Cases for Battleship Requirements

**Please note that the requirement numbers are set to the line number in the Battleship Requirements document in GitHub (**[**https://github.com/dotsondr/4250\_001/blob/main/BattleshipRequirements**](https://github.com/dotsondr/4250_001/blob/main/BattleshipRequirements)**).**

**We operated in a team of 4. Two team members reviewed the first two paragraphs of requirements for test cases, and the other two team members reviewed the last two paragraphs. Towards the end of our time, we reviewed each other's documents and made recommendations as appropriate**

Requirements 2,3,4,5,6

* Start game and press space bar 3 times and right click three times, make these presses .5 second apart. Ensure missile launches are activated for all but last right click. As soon as first launched missile leaves screen press space bar and launch another missile.
* Resize the screen and repeat test, to ensure changes to boundaries of game screen are recognized by the application

Requirements 7,8,9

* Start game and press space bar once and right click once, then move mouse and press right click again, half a second apart, ensure visual models of missiles do not increase or decrease space between. Ensure missiles come from center of game screen and travel in an exclusively vertical direction from the launch position.
* Repeat test after resizing game screen to ensure new boundaries are recognized

Requirements 7:

* Launch 5 missiles, each .5 seconds apart and time when the missiles reach the edge of the screen. Ensure timing is still .5 seconds apart. Repeat test multiple times

Requirements 11,12,13,14:

* Begin game, launch 5 missiles that are directed at a ship. Observe to see if explosion is displayed after first missile hits ship. Ensure subsequent missiles do no hit ship/cause explosions/become deactivated after passing through where ship model used to be. Ensure models for ship and missile are removed. Before any missiles leave the screen launch another missile to ensure missile was deactivated.
* Ensure hit count is only incremented by 1 throughout the test.

Requirement 14:

* Hit 8 ships with missiles and ensure hit count contains the value 8 and displays as such on the game screen. Ensure that hit count is incremented by 1 upon each hit

Requirement 11:

* Launch missiles and hit different ships in different locations to ensure that missile hits are registered

Numbers are equivalent to line number of requirement in Github Document (<https://github.com/dotsondr/4250_001/blob/main/BattleshipRequirements>).

1. Start program and see if a ship launches.
2. Start program and see if there is an option to select number of ship types (configurable value)
3. The application will display ship image when you click on active ship. Or display ship type when hovering or clicking or by caption.
4. There needs to be a menu choice to change rate of random ship launch. Check rate of random ship launch.
5. Run program and see if there is an observable pattern in ship type launch.
6. Set configurable ship launch rate to 100% and see if the number of ships ever exceeds 10.
7. Check that some type of random number generator is being used to choose launch locations. Verify that there is no observable pattern for launch locations
8. Verify that there is no observable pattern for the right or left launch locations.
9. Run program and make sure that no ships ever launch from the bottom 1/3 of the screen.
10. Run program and make sure that ships have different constant speeds. Test that speed is a property of the ship type.
11. make sure that no ships “wrap around” the grid.
    1. Ensure that ships launched from left side of screen only travel to the right
    2. Ensure that ships launched from right side of screen only travel to the left
12. Make sure system can launch more than 10 ships (meaning that the ships that go off the screen are not active). See line 22.
    1. Ensure that no more than 10 ships are on the screen at once.
13. Hit 10 ships and see if the game ends
14. Click left mouse button and ensure game ends
15. Click Esc key and ensure game ends.
    1. Press every other button on keyboard except esc, spacebar, and left and right mouse click and ensure that nothing happens.
16. Start game and leave it running with no input for 5 minutes, ensure game ends after 5-minute timer.