

AP Project - Stick Hero

Group 94

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Running the game using Maven

The user can run this command in the directory AP_Project_Stick_Hero to launch the game via the terminal.

1. `mvn clean javafx:run`

Main Game Implementation

In our AP Project, we created a game like Stick Hero which requires players to traverse the game using sticks extended by holding the left mouse button. The player can collect cherries along the way, by flipping the character, which adds to their score and allows them to be revived once they've collected 5 cherries. The user can save their progress, which allows them to pick up right where they left off, with their high score being saved as well.

Classes and their Relationships

The following classes and interfaces have been used in the game:

1. AudioManager
2. ExitController
3. GameElement
4. GameManager
5. HelloApplication
6. LevelManager
7. MainLoop
8. StartController
9. Platform
10. Player
11. RunnerClass (JUnit Runner Class)
12. ScoreManager
13. TestInput (Contains JUnit Tests)

Design Patterns

1. **Singleton:** Used for the ScoreManager class, which ensures that at any point there is only one instance managing the score and high score in the game.
2. **Flyweight:** Used to ensure that pillars of the same width aren't repeatedly created in the game during gameplay.

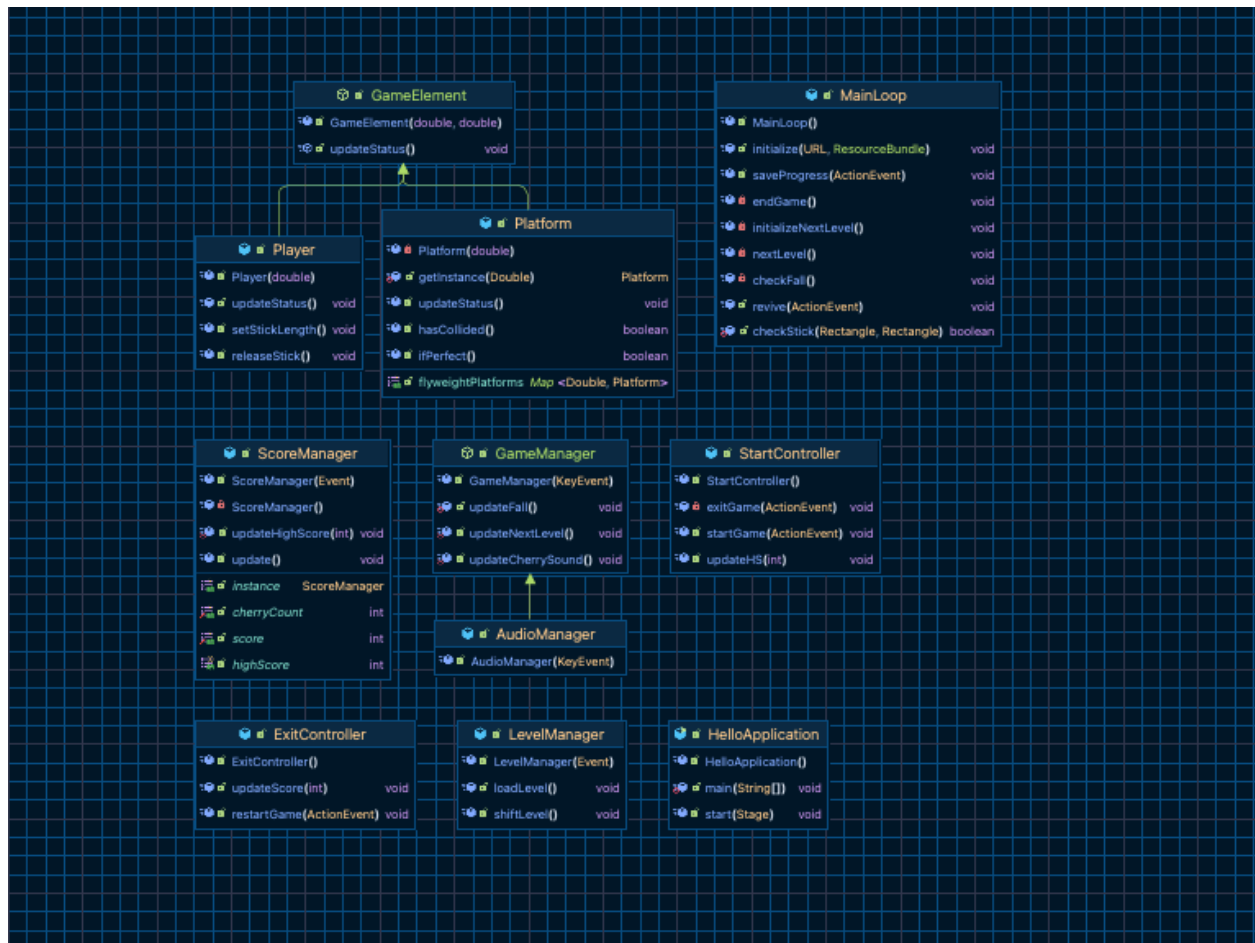
JUnit Tests

Our JUnit tests are contained in the TestInput class, with the runner class being RunnerClass. We've tested for the ScoreManager being a singleton, successful and unsuccessful collision, and proper implementation of the flyweight design pattern in pillars.

Bonus

1. **Multithreading:** We've implemented multithreading in our AudioManager class, to ensure sounds are played correctly and at the proper time for each event.
2. **Bonus Feature:** We added a monster into the game in each level, which must be avoided by flipping the character. Collision with a monster causes instant death of the character, without the possibility of revival.

UML Diagram



Github Repository

<https://github.com/shauryabajaj1/AP-Project-Stick-Hero>