

Stick Hero (Readme)

This is a Stick Hero application developed using Java and JavaFX. The game features a character that can move across platforms by extending a stick. The goal is to reach as far as possible by extending the stick to connect with the next platform.

Features

1. **Gameplay Mechanics:**

- The character can extend a stick to reach the next platform.
- Platforms are randomly generated, and the character must land on them to progress.

2. **Cherry Bonus:**

- The game includes a cherry bonus that appears on some platforms.
- Collecting cherries increases the score.

3. **Sound Effects Bonus:**

- Sound effects are incorporated using the `soundManager` class.
- Background music, click sounds, and other audio feedback enhance the gaming experience.

4. **Animations Bonus:**

- Smooth animations for stick extension, character movement, and rotation.

5. **JUnit Tests:**

- The application includes JUnit tests to ensure the correctness of the `soundManager` class.
- Mockito is used for mocking dependencies and verifying interactions.

6. **Design Patterns:**

- The Singleton pattern is applied to the `soundManager` class, ensuring a single instance responsible for managing sounds.
- The Flyweight pattern is used for playing click and play sounds, optimizing resource usage.

Code Overview

Gameplay Controller (`gameplayController`)

- Manages the game mechanics, platform generation, and character movement.
- Handles mouse input for stick extension and release.
- Rotates the stick and checks if it's long enough to reach the next platform.
- Implements cherry bonus functionality.

Home Screen Controller (homescreenController)

- Controls the home screen view.
- Manages background music and provides options to exit the game or switch music.

Main Class (Main)

- Launches the application, sets up the main stage, and handles the exit confirmation.

Platform Class (platform)

- Represents the platforms in the game.
- Generates and initializes platform properties.

Sound Manager Class (soundManager)

- Manages sound effects using JavaFX MediaPlayer and AudioClip.
- Implements background music, click sounds, and game over sounds.

Module Info

- Specifies required JavaFX modules and opens the main application package to JavaFX.

Unit Tests (soundManagerTestPart2)

- Tests various functionalities of the `soundManager` class using JUnit and Mockito.

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