

Color Switch

CSE 201 : Advanced Programming

Piyush Sharma 2019316

Ritvik Budhiraja 2019322



Implementation

- The game is developed using Java 15.0.1 and JavaFX 15.0.1 along with Scene Builder
- The main menu handles operations to play game, load previous games, see stats page and quit the game
- The gameplay area renders all the obstacles, color switchers, and balls.
- It has 4 unique geometrical obstacles that repeat infinitely
- The game becomes harder as the player gains more points
- The player begins the game with a score of 0 and with each collected star, the score increments by 1
- The player loses the game if they hit any obstacle or fail to keep the ball afloat.
- Pause menu can save the current state of the game, as well as return to main menu or restart game.
- Load game menu can load any previous state of the game
- Stats page displays total stars collected, the highest score, and other appropriate details.
- Quit page lets the player quit the application or return back to main menu.

Design

Design Patterns-

- Facade: Main game menu screen serves as a front-facing interface
- Template: All the obstacles are derived from the Item abstract class
- Singleton: We have just 1 unique instance of the ball and player throughout the game
- Iterator & Composite: Accessing the individual obstacles and rendering them indefinitely

The UI of the game has been developed using JavaFX and Scene Builder

Individual Contributions

Ritvik

- UML Use Case
- GUI: Gameplay screen, stats page and pause menu
- Initializing classes and their attributes
- Controlling game mechanics
- Making infinite obstacles
- Added God mode feature

Piyush

- UML Class Diagram
- GUI: Loading animations, main menu, load game, and quit Game
- Serialization and deserialization
- Linking static GUI with Java classes
- Background music
- Presentation

Bonus Features

- 1) Added relevant background music in the game.
- 2) Added God mode feature which allows the player to play the game without losing even on hitting an obstacle
- 3) Added 4 unique geometrical obstacles
- 4) Added a stats page that displays all the statistics of the player
- 5) Added loading animation at the starting of the application