

COLOR

SWITCH

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DETAILS

Course: CSE201- Advanced Programming

Project Details: End Term Project

Create a clone of the famous arcade game 'Color-Switch' using java, javafx and essential principles of object oriented programming.

Team:

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IMPLEMENTATION

Navigation: navigation of on-screen components done using FXML.

Saving/Loading a game: every time a user saves a game, the game state is added in the database along with the count of stars earned, which is then serialized using I/O streams.

Delete: game state is automatically removed in which the user loses the game and is unable to revive.

Difficulty: levels become harder as the user progresses through the game. Rotation rates of obstacles start increasing along with consistent change in their sizes.

Revive: The user can revive if he/she has enough stars (10 stars per revival) and feels like continuing or start afresh otherwise.



FEATURES



Difficulty starts increasing after 10 stars are earned in a game.

Colors available are red, yellow, blue, purple.

Obstacles available are square, circle, triangle and cross.

User can unlock and choose between different shapes of the ball.

User can save multiple game states and reload or restart them at any time.

Cool background music.

DESIGN PATTERNS

Threading: All the in-game animations are done using AnimationTimers each being an individual thread in JVM



SINGLETON

A:

Instance of the final database which stores data of several games is limited to one as there is no need of multiple databases.

FACADE

B:

Hidden complexities of various in-game components and menus using facade based implementation.

ITERATOR

C:

Ensured ordered accessing of the list of saved games in the database while loading into different menu screens.

INDIVIDUAL CONTRIBUTIONS

Abhishek Saini

- Game Play
- Pause Menu
- Load Menu
- Interaction between ball and other elements
- The game loop
- Increase of difficulty
- Enabling and stopping animation
- Serialization/Deserialization

Raghav Nakra

- Main Page & Leaderboard
- Load game Options
- Transition of elements
- Buttons and Background
- Initializing classes and their attributes
- Randomness of obstacles
- Background Music
- Saved game state

BONUS FEATURE



ITEM SHOP

The user can unlock exciting shapes of the ball by redeeming stars collected during the game.

