

Advanced Programming CSE201- Course Project (Snake vs Block)

Design & Implementations

- Our Game had a block class which instantiates sets of blocks that translate downward. The user can use the Keyboard to control the movement of the snake toward the left or the right.
- Walls and tokens spawn during the gameplay. While the walls restrict the movement of the snake on the screen, bonus acts as a power up.
- A User class takes into account user profiling, and Leaderboard class maintains the top score with dates.
- Program can be serialized to save the state of the game at any point and this can be continued later.
- We have used abstract classes, Interfaces and Inheritance. Singleton and Observer design patterns were also used. Threads are created at various points in the game for for parallel execution or to stop execution for some time.
- Exceptions were handled and all points and extensive use of Java Collections Frameworks has been made.

Issues faced and Remedies

- Team work: Our schedules clashed often, and it was tough to find a common time during the day to sit together. Hence we often worked for an entire night at a stretch to complete our project.
- Linking of GUI part with the backend Java code caused issues due to lack of familiarity with JavaFX. Reading documentation and online resources helped overcome this hurdle.
- Github merge conflicts: Were tackled easily due to familiarity with VCS.
- Serialization of Objects that cannot be serialized.
- Implementing collisions was tough due to different relative coordinate systems of objects

Individual Efforts

Both of us worked together and contributed equally to the project. We coded most of the project together, and discussed idea and improvisations.

Arsh Verma (2017221)

Set up all FXML pages

Linked pages and added button functionalities.

Implemented KeyBoard interrupts and animation of snake, blocks and walls.

Implemented the Leaderboard.

Implemented Serialization and Deserialization to save state of game.

Daksh Shah (2017336)

Implemented the code for collision between walls and snake, blocks and snake.

Improved design and UI components of blocks

Collection of tokens during gameplay, increasing length of snake and functionalities for all tokens

Bonus Features

- Log in as a Guest.
- Log in/ Sign up with username and password
- Background music for entertainment.
- User can collect coins as bonus during game.
- User can change avatar of snake head.
- User can change Theme of game.
- Speed of snake changes due to tokens – fast or slow.
- User can pause the game during game play and resume.
- Cheat codes using keyboard interrupts.
- If 10 coins collected, user gets bonus chance.