EECS 2030 Final Project

Snake Game

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**Project Description:**

This project is a custom swing based snake game. The objective of the game is for the player to control a snake that enjoys eating food. There are three types of food in this game, Golden Apple, Apple, and Poisoned Apple. The Golden Apple increases the score of the player by 50, the Apple increases the size of the snake and score of the player by 1-3. The Poisoned Apple on the other hand, will end the game. If the player hits any of the four boundaries, the game is over. Additionally, if the size of the snake reaches the maximum (the size of the game screen) then it would be considered a win and the player would be moved to the next level where the snake is faster and the game generally becomes more challenging. However, the player would gain double the score!

The game store and sync the score and name of the player upon losing the game (when the game over screen is shown) to a NoSQL Database. Data is synced across all clients in realtime, and remains available when the application goes offline. This was made possible by using a google service called Firebase Realtime Database. The Firebase Realtime Database is a cloud-hosted database. Data is stored as JSON and synchronized in realtime to every connected client. Additionally, all of your clients share one Realtime Database instance and automatically receive updates with the newest data.

This assignment applies multiple advanced topics in object-oriented programming. Starting with the most general such as Javadoc, Encapsulation / Information Hiding, Mutable and Immutable Classes, Functional Programming, and Polymorphism. As group, the most challenging feature was Networking and Sockets.