

CS307 Group Charter

Team 26

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Problem Statement

Snake games are one of the most classic game designs: since the original *Snake*'s debut in 1997 on the Nokia 6110, many new versions of the game have been designed. However, most of them are very basic and do not have many features, which make them increasingly monotonous the more one plays; players often experience visual fatigue after staring at the predictable movement of the snake for a long time. With our Snake game, players will be able to enjoy a modern take on the design through the inclusion of powerups, multiple levels, and different movement patterns, while still keeping the core concepts and gameplay.

Project Objectives

- Powerups/debuffs (such as automatic path-finding, changing difficulties, awarding when reaching high scores, adding special skills to the snake)
- Implement movement beyond the basic four directions in order to make gameplay more dynamic
- An A.I. that will teach itself to improve with time through machine learning
- The game will contain multiple maps with different features on each one of them. For example, in the ice map, there are ice cubes the snake can eat to slow the moving speed for a while
- The player starter menu can be more creative/dynamic. The background can be implemented as a dynamic interface where there is a snake moving around and trying to eat the bean
- Rewarding systems can be more open-ended. For instance, once a player reaches a score high enough a special skill can be launched to change to automatic path-finding for a short time

Stakeholders

Users: People who want to play an advanced version of the original Snake game (Customers of the game)

Developers: Matthew Der, Chirag Nath, Kevin Shi, Ran Guo

Project Manager: Siddharth Dhar

Project Owners: Matthew Der, Chirag Nath, Kevin Shi, Ran Guo

Deliverables

- Advanced Snake game, graphics implemented with Java Swing GUI

- CICD implementation through IntelliJ Gradle/Maven
- Machine learning API [Tensor Flow] that will teach itself to improve over time