159.261—Games Programming
Assignment 2: 2D Game

Total marks: 100
Course Weighting: 40%

Due Date: **Friday 2nd June 2023**

Assignment Brief:

Design and build a computer game in Java as a team. You have the freedom to design and build your own game - a 2D game in Java. You must use the course game engine `GameEngine.java`. The game graphics should include at least some sprites and some animation, the game should have some sound effects (even if it is just background music) and must have a scoring system (gaining and losing scores as a result of some actions). You are welcome to add other additional features (start menu, multi-player, more sophisticated graphics/animation/collision detection etc).

Make sure you are realistic about the size of the game you can create in the available time. I encourage you to be ambitious and step out of your comfort zone, but make sure you can finish everything and have a working game by the deadline.

Groups

This is a group assignment and groups will be assigned as per the responses recorded in the group questionnaire posted on stream.

Game Suggestions

Puzzle Game

Puzzle games involve the user attempting to solve a puzzle or a series of puzzles. This could be a game like Tetris where pieces are continuously falling and the player must fit them together to form lines or something like a sliding puzzle where the player has to slide tiles around to form a complete image. Scoring in this type of game would be the number of lines the player can complete before the game ends (in the example of Tetris), how fast the player can complete the puzzle or how many moves it takes the player to complete the puzzle.

Platform Game

Platform games generally involve the player controlling a character jumping between different platforms. The aim is usually to reach an exit, collect items or avoid opponents. Scoring may be based on how long the player can survive, how long it takes them to reach an exit or how many items they manage to collect.

Maze Game

Maze games consist of the player attempting to navigate a maze and complete some objective. This may involve simply reaching the exit or collecting items hidden in the maze. This type of game may be single-player where the player simply has to navigate

the maze or two-player where the players compete to collect the most items or reach the exit first. This type of game may also include one or more computer-controlled enemies that either compete against the player or try to attack the player. Scoring in this type of game would depend on the number of items the player can collect, how fast they can complete the maze or how long they can avoid the enemy agents.

Submission Instructions

Put comments at the top of your program and make sure you include the **name** and **ID** number of **all members** of the team.

Make sure your code is written clearly and concisely and is well commented. You will lose marks if the code does not compile.

Prepare a document (4-5 page maximum), outlining your design decisions, features of the game as well as some screenshots of the game. List a brief summary of the contributions made by each team member as well.

Hand-in

One member of the team should submit all files (source code + documentation) in **GroupName_Assignment2.zip** on Stream. Use "File..Export..Project to Zip File" from IntelliJ to create your zip file.

Group Presentation

Each group is also required to submit a 5 min video presentation with a demonstration of the game. Think of this presentation as a trailer for the game or an instructional video about how to play the game. Include all the features of the game and talk about possible future improvements.

All group members should take part in the presentation. The presentation will be taken into account when determining the marks. There is a separate submission on stream for presentations. Submit the video as an mp4 or mkv video file (not zipped).