SOUL DEFENDERS

GROUP MEMBER:

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- Goals:

Variety of Tower and Enemy Types: various types of towers and enemies.

Fun of the game: Entertaining, challenging, and interesting.

Intuitive Interface: simple and readable.

Replay Value: Players are able to edit and create custom level

Optimization: Lightweight, minimal bugs or performance issues.

I / Introduction

- Objective:
- Improve Java programming skill
- Understand the OOP concept
- Another way to approach programming

II / Methodology

Application

- Coding:
  - Visual Studio Code
  - IntelliJ IDEA
- Drawing Sprite:
  - Aseprite

Website

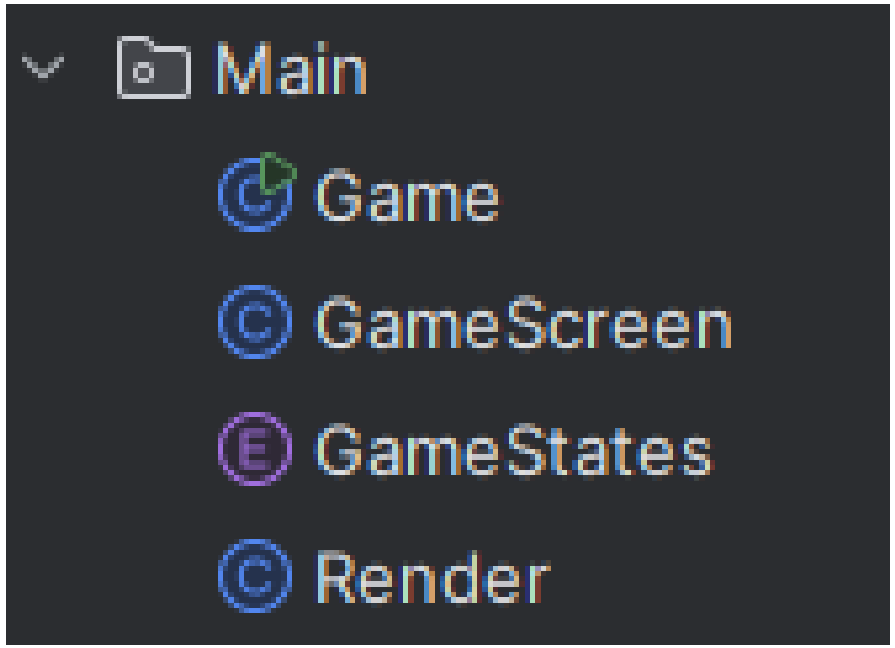
- Draw.io
- ERDplus
- Github

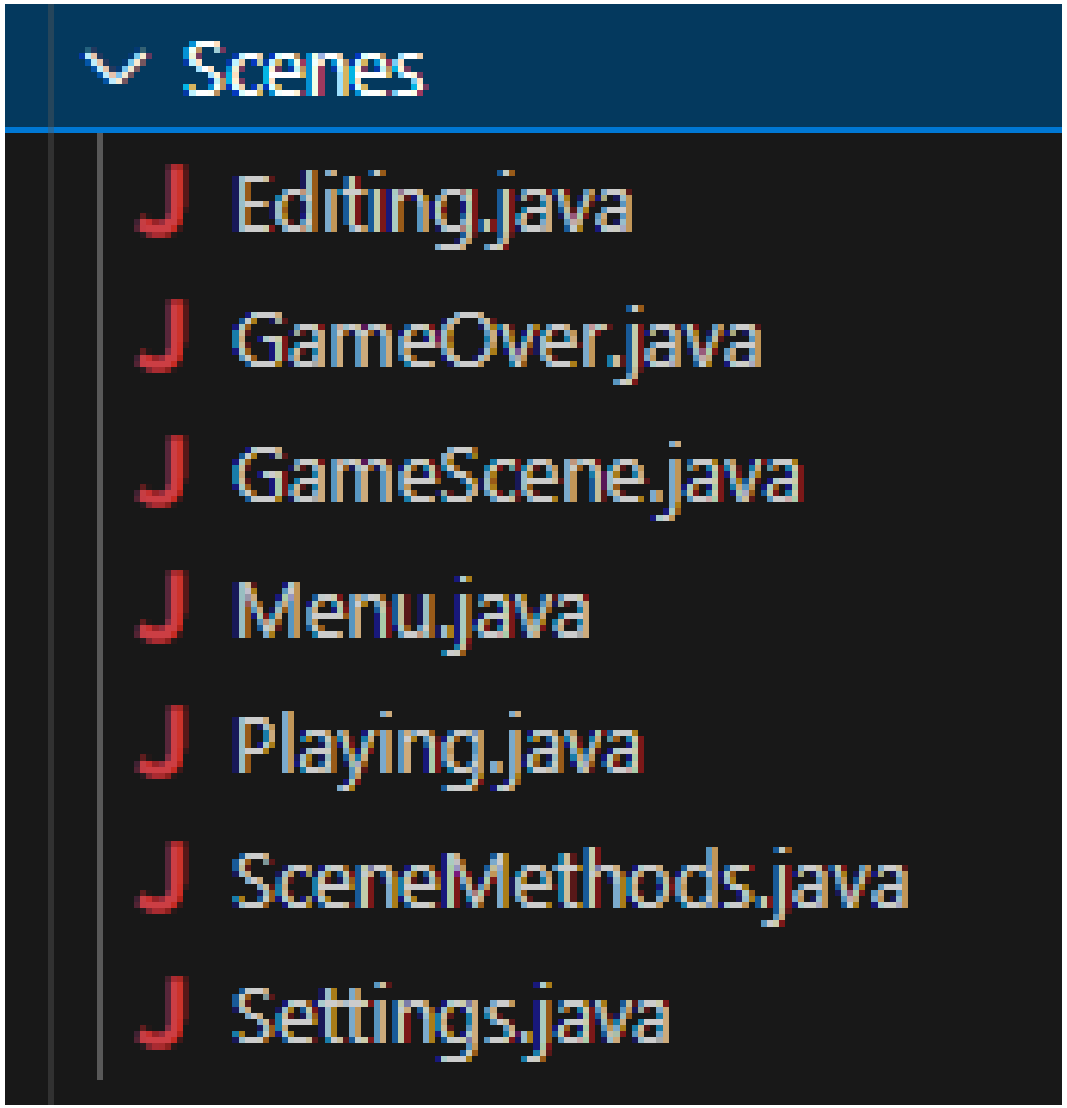
Communication

- Discord
- Messenger
- Google Drive (for file)

MAIN

- Game: the main class of the game.
- GameScreen: handling display and managing input events from the user.
- GameStates: defines the different states of the game.
- Render: allows to render depending on cases

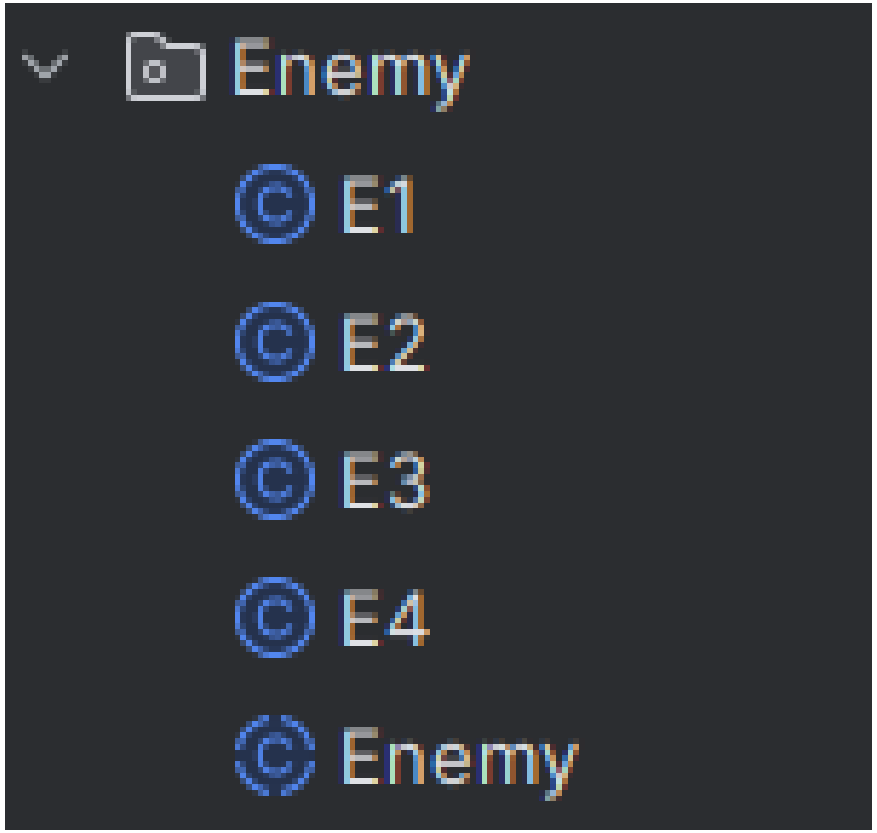




SCENES

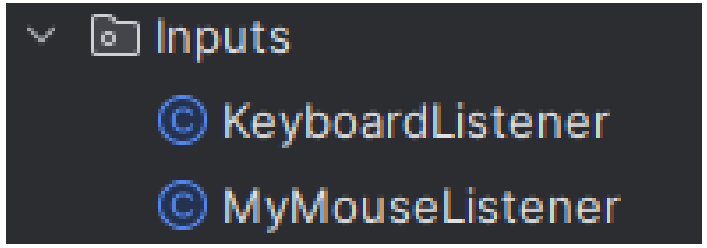
- ScencesMethods: Interface that contains mouse input methods and render method
- GameScene: Getting sprite from atlas by getSprite() and running a loop of animation with updatetick()
- Menu: Draw buttons “Play”, “Edit”, “Settings”, “Quit” and background
- GameOver: draw Menu and Replay.

ENEMY



- E1, E2, E3: defines kinds of enemy.
- Enemy: abstract class for E1, E2, E3, define their statistics and behavior.

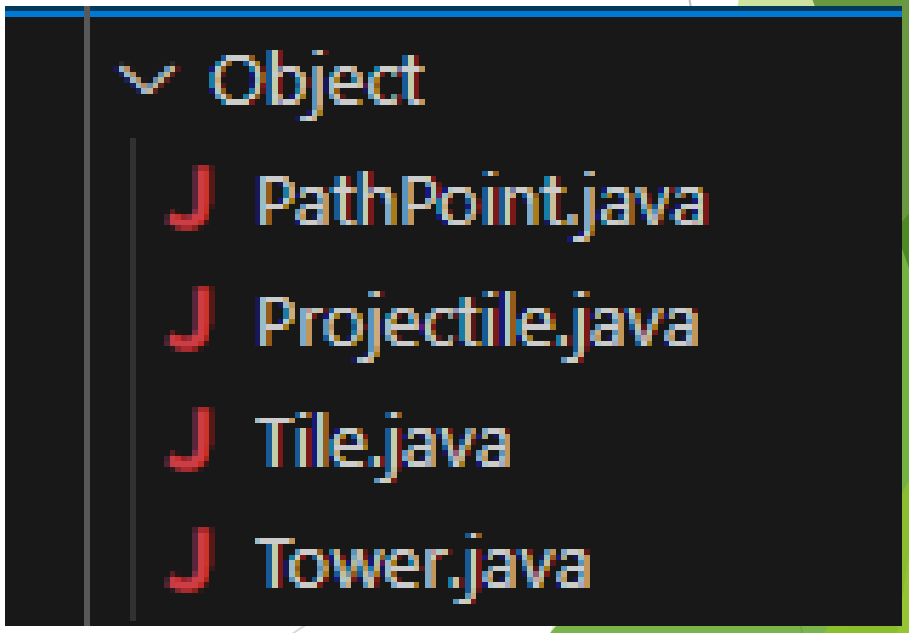
INPUTS



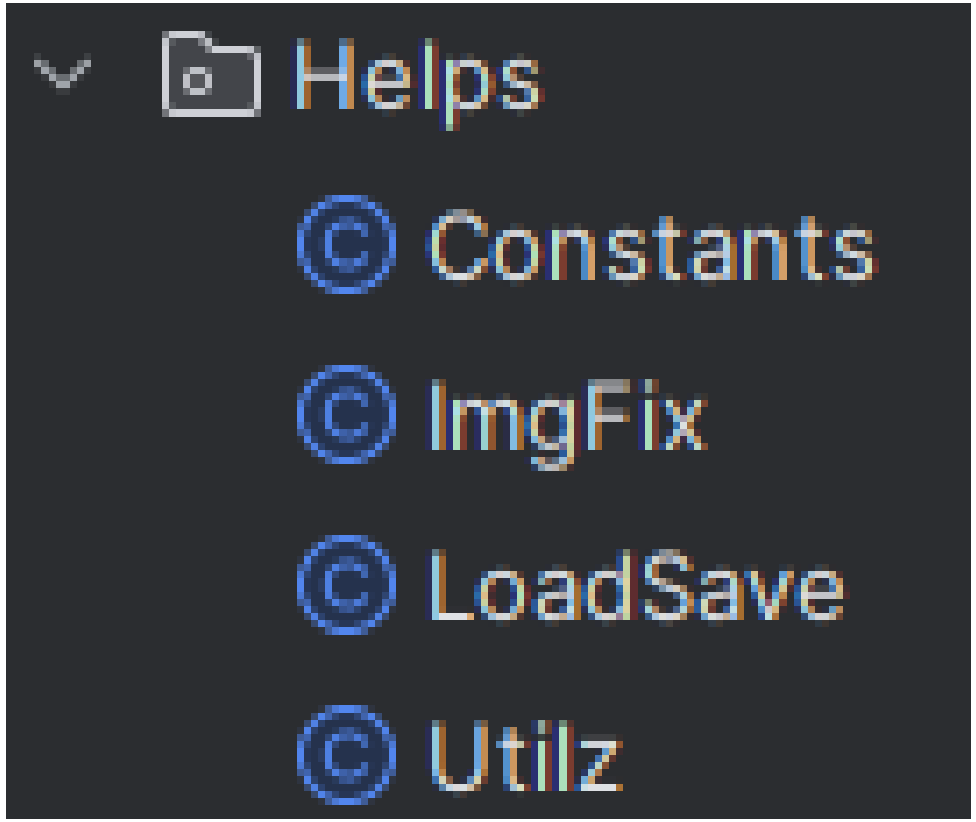
- KeyboardListener: Making methods for keyboard inputs
- MyMouseListener: Making methods for mouse inputs

OBJECT

- Pathpoint: represent a point in a 2D space using two coordinates: **xCord** and **yCord**.
- Projectile: represent a projectile
- Tile: represent a tile, used to create the game level environment.
- Tower: manage towers, with different attacks and types. Handle attack cooldowns, upgrades, placement



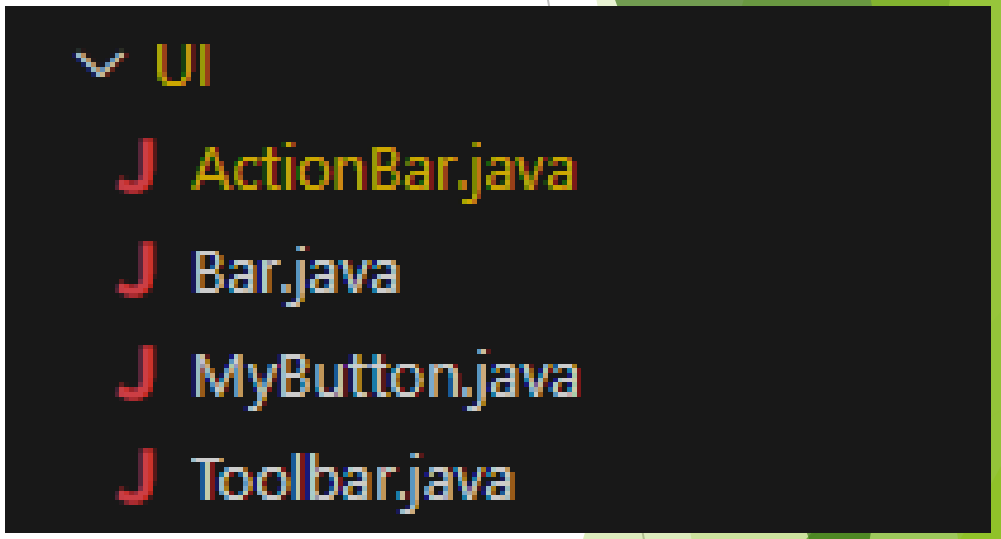
HELPS



- Constants: sets statistics for both towers and enemies
- ImgFix: provides methods for image manipulation, including rotation and image construction from multiple images
- LoadSave: provides methods to load and save data for the game
- Utilz: provides methods for handling arrays and calculating distances.

UI

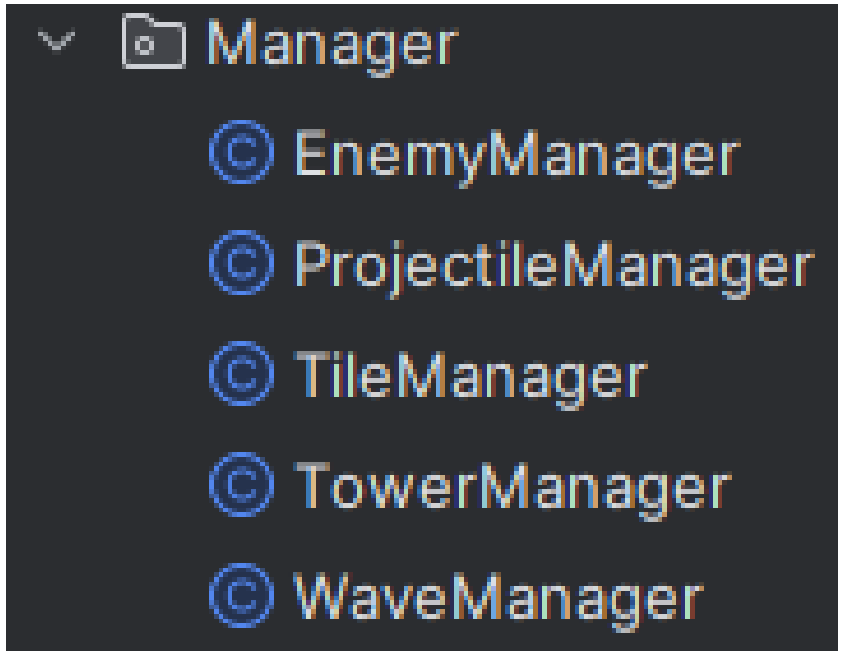
- Bar: UI elements that represent a rectangular area on the screen (action bar and toolbar).
- MyButton: represents a clickable button in the user interface
- ActionBar: extends the Bar class and represents a specific area of the UI that displays gamerelated
- Toolbar: extends the Bar class and represents a specific area of the user interface dedicated to editing functionalities



EVENTS

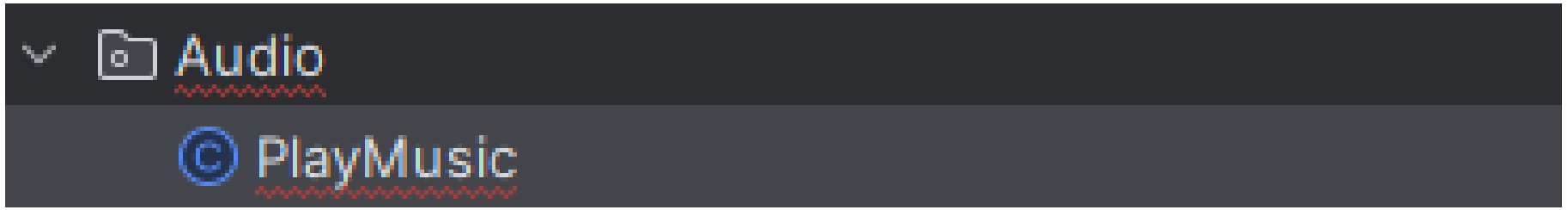
- Wave : defines a enemy wave

MANAGER

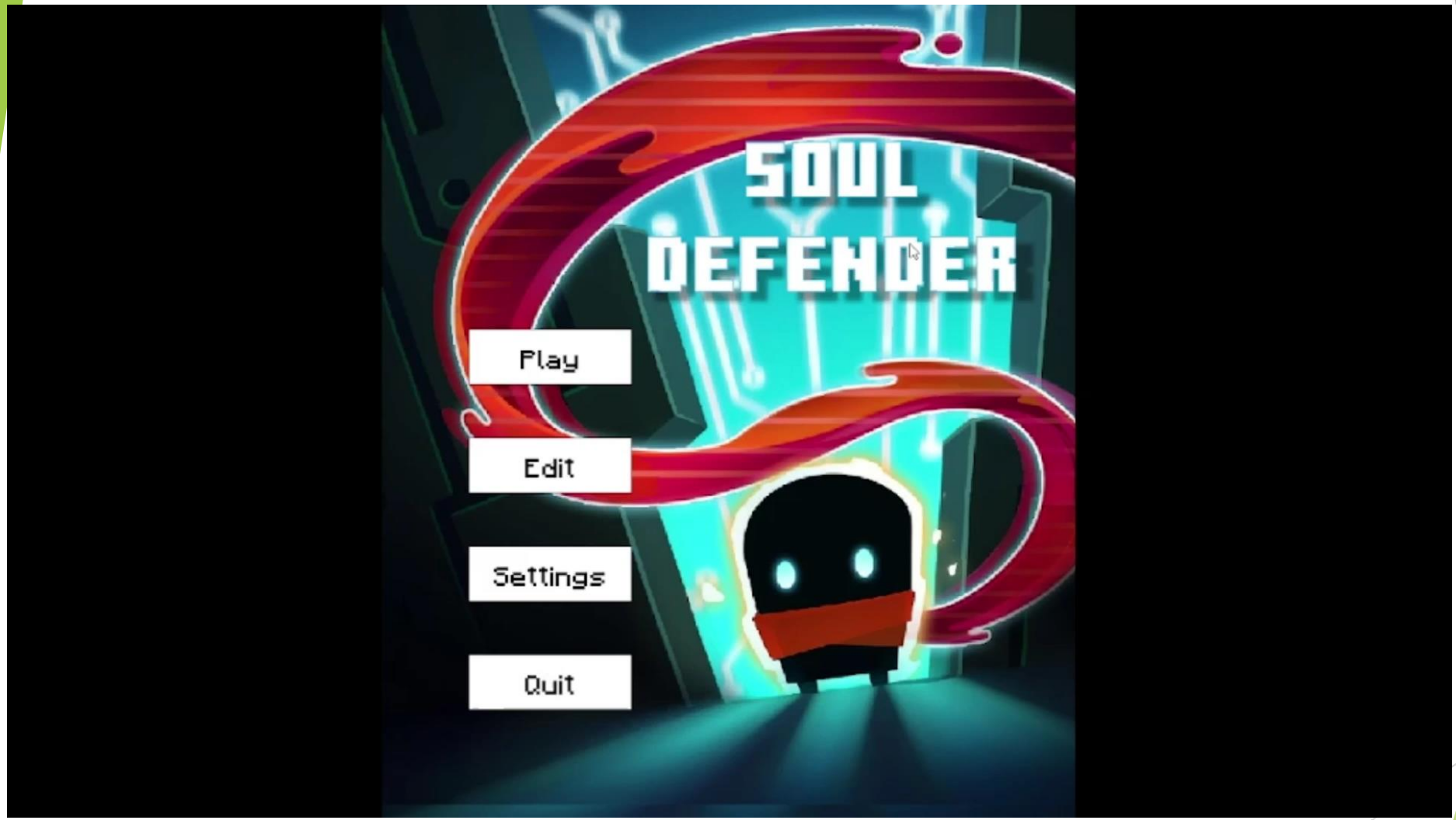


- EnemyManager: manages enemies in the game.
- ProjectileManager: manages effects of shooting and explosions
- TileManager: manages kinds of tiles in the game.
- TowerManager: manages kinds of towers.
- WaveManager: manages waves of enemies.

AUDIO



- PlayMusic: Defines method to play, stop, and continue music



RESULT

CONCLUSION & FUTURE WORKS

- Summary:
- Experiencing programming game
- Understand core concept of OOP

- Future Works:
- Adding more features
- Working on animation
- Fixing bugs

THANKS FOR LISTENING