Space Ship Game

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# Planning

* Classes:
* main → Controls Game
* Game (Singleton) → Game Manager, Load "GameSettings.json”, Save and Load Games
* Renderer (Singleton) → Controls what happens in the render window
* Player → Moving around, spawning projectiles
* EnemySpawner → Spawn different enemies
* Enemy → Parent class
* EnemyShip → This kind can shoot projectiles, moving from top to bottom
* EnemyUFO → This kind floats in the space until killed
* AsteroidSpawner → Controls spawning different asteroids
* Asteroid → Just Asteroid
* Background → Scrolling background texture, spawn some stars
* Projectile → Just projectile, load different json file for different classes
* CollisionDetection
* UI
* AssetManager (Singleton) → Load textures
* GameTime (Singleton) → Provide time related variables
* Achieved:
* Main Player:
  + Movement, window boundaries
  + Shooting projectiles
  + Can take damage from enemy projectiles and collisions with enemies and asteroids
  + Destroyed after losing 3 lives
* Enemies:
  + Moving from top to bottom
  + Shooting projectiles
  + Can be destroyed from player projectiles and player collision
  + Another type:
    - Moving from left to right, or moving from right to left
    - Will return when reach the window edge, won’t disappear until killed by player
* Asteroids:
  + Movement
  + Collison with player
  + Can be destroyed by player projectiles
  + Random sizes
* Background:
  + Scrolling texture, spawning asteroids
  + moving stars
* Data Driven Design
* Git
* Not done:
* Game class control game states, achieve pause and replay
* A parent enemy class

# Data Setup

* Can change all the textures used in the game, including the texture size

Window size, full screen

Player lives, speed

Enemy moving speed

Projectiles moving speed

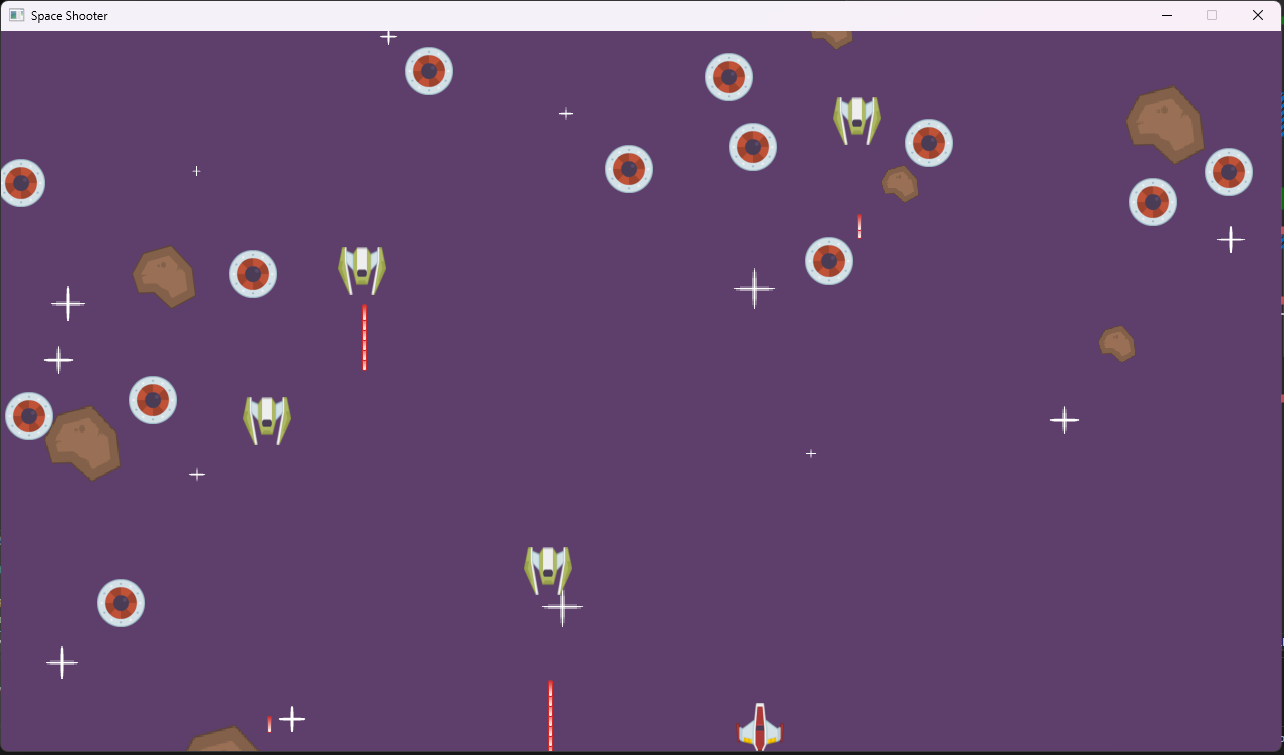
Asteroid moving speed

Background scrolling speed

# Incomplete (vs what was asked)

* Basic Requirements:
* Main Player: Respawn
* HUD
* Advanced Requirements:
* Loading and saving game state

# Screenshot A screenshot of a video game Description automatically generated



A screenshot of a video game

Description automatically generated