

DOCUMENTATION

Game operation

The Asteroids 3D is a version of the [2D] Asteroids arcade game which is played as a first person shooter (FPS) game, and a Six Degree of Freedom (6DOF) motion model is implemented to move the ship within the game. Additionally, the player is able to fire proton torpedoes at targets such as asteroids and aliens in order to eliminate them. When any of these proton torpedoes hit an alien, the force field recharges to keep the ship protected. Besides that, the player will be able to earn lives by colliding with the little red stars. Finally, the player's ship is destroyed when hit by an incoming asteroid or enemy fire. The actions of the player are triggered by the next input:

- Vertical mouse movement for pitch.
- Horizontal mouse movement for yaw.
- Left & right arrow keys to perform a roll.
- Up & down arrow keys to perform translation forward and reverse thrust.
- Left mouse click to fire proton torpedoes.
- F1 key to load next scene
- ESC key to unlock cursor

Features

This game was created and designed only by me. The features that were implemented are listed below:

- The 6DOF movement model for the player with mouse and select keys used.
- Collision detection, physics, and effects.

- Particle system for the different types of explosion.
- High scores and live mechanisms.
- Movement and attack of aliens.
- Solar system with sun and all planets (from tutorial).
- Simulated stars which give off light in the game.
- Render texture to display rear view of the player's ship.

Third party assets

Most of the game assets such as the asteroids and the alien were downloaded from the Unity Asset Store. The solar system was created with the assets from the tutorial.

Additionally, most of the sounds were obtained from websites such as Pixabay and Mixkit.

Summary

In this project, I learned how to create a 3D project with different features such as 6DOF movement, simulated stars, particle system, render textures, effects. However, the most important thing that I have learned is to make a good study plan. I have been so busy lately but I managed to finish all my tasks on time. Some of the keys were to start working on any these tasks at least some days before they were due and don't get distracted with social media.