3D Asteroids

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Purpose

- Recreate the game Asteroids in 3D
- Player dodges and destroys asteroids
- Destroy asteroids with blasters, broken into smaller pieces
- Goal: Achieve a high score by destroying asteroids and staying alive

Concept

Controls

- Control over Spaceship: Users will be able to control the Yaw, Pitch and Roll of the spaceship, as well as rotation of the wings, and the Yaw and Pitch of the blasters
- Control over Camera: Using Left-Alt, the user will be able to control the zoom and tumble of the camera

Requirements

- **Starship Movement**

  [Scene Node Hierarchy and Manipulation]
  - Move in 4 directions to avoid and destroy asteroids
  - Cannot move outside camera bounds
- **Asteroids**

  [Scene Node Hierarchy and Manipulation]
  - Spawned randomly at random depths/positions in range of the camera
  - Move towards player
  - Destroyed into smaller pieces by starship blasters

Requirements

- Cameras

[Viewports and Camera Manipulation]

  - Default camera behind starship, rotate around
  - Side view camera follows player
  - Top down view camera

- Score System

[Interact with Hierarchy]

  - Player awarded points when asteroids are destroyed
  - GUI text shows amount on computed point of asteroid destruction
  - Points multiplier once starship is destroyed based on survival time

Timeline

Week	Task	Status
11/11 - 11/17	❏ Define Requirements ❏ Begin Implementation	In Progress
11/18 - 11/24	❏ Starship Movement ❏ Starship Camera ❏ Early Asteroid Movement ❏ Prepare Progress Demo on 11/25	Not Started
11/25 - 12/01	❏ Finish Asteroids - Destruction, Smaller Pieces ❏ Laser Firing ❏ Early Score System	Not Started
12/02 - 12/09	❏ Cameras ❏ Finish Score System - Points, Time Multiplier ❏ General Polish ❏ Prepare Final Demo and Video on 12/09	Not Started