Concordia University

COMP 371: Computer Graphics

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Mid Project Report

Space Shooter 5000

Team 6

Ajayveer Aujla 26595863

Ahmed Dorias 26649874

Ian Kelley 26507549

Simon Labute 40012570

Mark Massoud 26599486

Project Status

Space Shooter 5000 status is currently Green (on track).

Changes from Original Project Proposal

The task list was modified in order to take into account the suggestions made to the proposal (for example, to use b-splines for asteroid trajectory, using a texture atlas, etc.).

The initial idea was to implement a game taking place in space. Due to the fact that the actual gameplay aspect is not essential or important for the scope of this graphics course, some features were categorized as “Wish List” priority initially. As such, if time does not permit, certain features may not be developed at all, including various types of projectile shots (Projectile3) or different views/screens for the user to shoot in (Screen/View1). Instead, an open world concept where the user can still fly around in space around asteroids, stars, etc. in a spaceship may end up being the end-goal of this project, instead of the initial game. All non game-related tasks will remain, including the various visors and particle systems, light sources, etc. since they are relevant to exploring the world.

Individual Progress

Developer	Tasks Done	Tasks In Progress	Tasks Not Started
Ajayveer Aujla	[Screen/View2] Implementing zooming functionality for scope. Ahmed will take care of adding an overlay as a scope. [Projectile1] Projectile translation / movement from camera in lookAt vector direction. [Projectile2] Projectiles scale and get smaller as they move away from camera.	[Asteroid/Projectile1] Collision detection between asteroids and projectiles [Particle2] Particle emitter for stars, etc. in background.	[Projectile3] Wish list feature for implementing different types of shots: scatter shots, etc. May be scoped out.
Ahmed Dorias		[Lighting 1] Implement the light that emits from the projectiles. Emissive light is the type of light that will be attached to the projectiles as they get	[Lighting 2] Create multiple light sources. [Screen/View3] Implement the thermal scope for the gun.

		shot. Now that the projectiles are in the scene, this task is near completion. [Screen/View2] Implement the regular scope for the gun. I still need to attach an overlay unto the zoom, so that it looks like a scope. This will be done using billboards in the shape of a scope that follow the camera.	
Ian Kelley	[Particle1] Finished designing the look of the particles; smoke trail to follow the projectiles and circles that will fall away from projectiles once they are hit.	[Particle1] Still need to attach the particles to the asteroid models once they are ready. May change the look of the particles depending on how the asteroids look.	[Texture 1] Need to create a texture atlas for all textures and decals. Also need to use a geometry shader to improve particle perfomance.
Simon Labute	[Camera1] Add various camera views and angles to toggle between 1st person, 3rd person, etc. [Camera2] Add camera controls to move the camera up/down along z-axis	Adding ASSIMP object loader library to import models for spaceship, gun, etc.	Create overlay for the HUD.
Mark Massoud	[Asteroid1] Created AsteroidModel class to represent asteroids. Created AsteroidSystem class. Just like particles, Asteroids will use a similar system to create them randomly in the world, and update their position toward the origin.	[AsteroidSystem] This system still creates Particles attached to a billboard. I am currently working on binding it to the AsteroidModel instead. Then, AsteroidModels would have a ParticleSystem attached to it. Also in the process of making AsteroidModel follow a BSpline path to give it a more realistic aspect.	[Asteroid2] Asteroids are still a big red sphere. I need to attach a rock texture into it. Also, need to add more attributes to it, like HP (HitPoints), so that they get destroyed when they get hit a certain amount of time. [Asteroid/Projectile2] Need to add decals where the collision occurs