CGRA 151, T2 2017, Assignment 5 Plan

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Name of game/artwork: Hexavoid

Vision

1. Game concept: Fly your ship around hexagon shaped obstacles and collect gold coins as long as possible. The more coins the player collects, the larger your score will be.

2. Game play: The spaceship will only move horizontally, while the obstacles will move around the spaceship vertically in a loop. The mouse will be used to control the spaceship. The user will be able to destroy the obstacles and move through it with bullets. Using Bullets will reduce the score by 1 as well (so that the player won't overuse the shooting ability). If the spaceship collides with the obstacles, the game will end and the payer can restart.

3. Visual design: The background of the game will be a gradient. The background changes based on the level. I have also created a spaceship from scratch. The obstacles will be represented by hexagons. Score will be displayed on the top of the screen. There is also a background music played, when the program is run.

Achievement

I was able to achieve every goal that I set when I started planning this game. I was also able to add more features into the game such as an explosion effect, background music, better menu, fonts and backgrounds. Collision detections was one of the major goal that I set and I was successful in achieving that goal.

Technical Challenges

The major obstacle that I had to tackle was the collision detection. After putting a lot of time and effort into figuring out the equations necessary for the collision to work, I was able to detect collision between rocket and hexagon, rocket and coin, bullet and hexagon etc. Another challenge was getting the explosion working. I had to create a separate class for the rocket to explode into 25-- particles. Also gravity was one thing that I had to figure out for the explosion. I did find some good articles/ tutorials for the maths/ physics behind these, which helped me a lot. Therefore, I can say without a doubt that getting the maths/ physics behind the collision and explosion was the challenging part of the game.

Reflection

I usually start on my assignments/ projects as soon as possible. However, i tried to avoid these projects during the mid half of the time period available for me to create the program. This cancels out all of the advantages that I had with my head start. Therefore, better time management is an improvement that I should make in the future projects. The fact that this program is completely made out of scratch by me and that this project is closely aligned with my interests helped me to achieve more than I planned for.

Getting the collision working for various shapes and getting the physics behind the explosion working were harder than I expected. This dragged me behind with continuing my project. However, I was able to overcome these obstacles eventually and outdo my plans. Designing the game elements and implementing those elements were easier than I expected.

I was able to meet all of the requirements that I made when I made the plan. I was also able to achieve some extra goals that I set during the production of the game. If I had more time, I would have redesigned the game to save the highest scores in a text file. Otherwise, I am pretty happy with the output of this project.