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CART253 – Section A

FINAL PROJECT
CONCEPT AND TECHNICAL PITCH

SUMMARY

My idea is quite simple – protect the planet against evil. The user will play as the superhero that must protect its planet against incoming villains. I was thinking about my game's theme after I purchased my Star Wars: The Last Jedi movie tickets, so the game will take place in ***drum roll please*** …space!

There will be a (possibly animated) star field in the background, with other planets in the cosmos, and the user's planet placed at the bottom of the window. The villains will be spawning randomly from the top of the window, heading down towards the user's planet. The user will have to stop the villains from reaching its planet by shooting beams/projectiles at them. When a villain is shot three times it will be destroyed. Shooting stars will appear and if the user catches one this will allow the beam to become stronger for a certain period of time and this mean a villain can be shot only once and it will be destroyed. There will be a set of control keys to be used to move the superhero and to allow it to shoot laser beams.

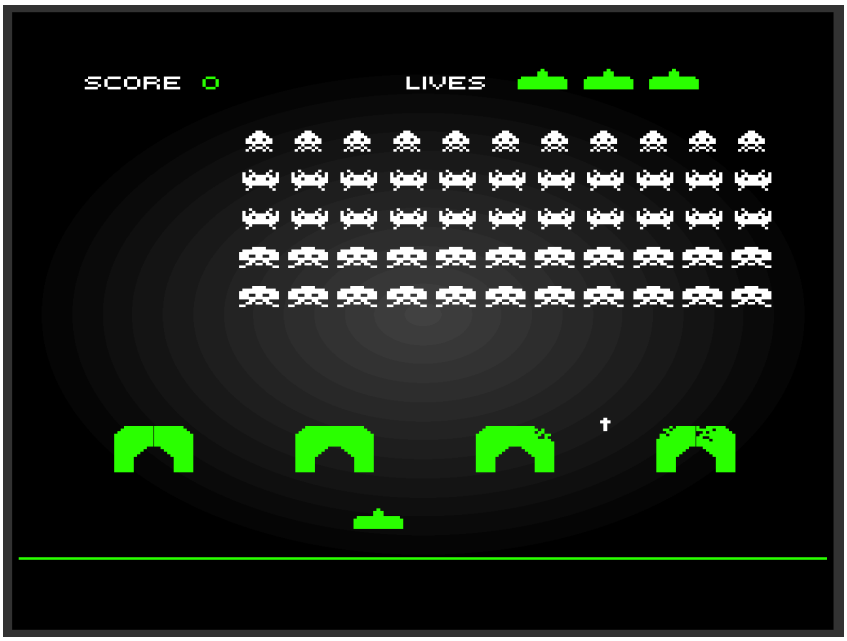
MEDIA

For now, I sketched out doodles for the superhero and villains. Later on, I will create my own characters in illustrator, as well as come up with the names for the superhero and villains.

The user will be able to move left or right within the window. The planet will be anchored at the bottom of the window. The villains will be entering from the top of the window and moving down on the y-axis.

INSPIRATIONS

I want my background to have a star field like the Star Wars intro has, but unlike the Star Wars star field, I want mine to be moving/animated. They will either seem as if they are coming towards the user or it'll be like a vertical parallax scrolling effect of stars.



In this *Space Invaders* game, there is a high score that increases whenever the user destroys an invader, and the user loses a life whenever it is hit by a projectile from an invader. I can implement this in my game as well, but the user in my game will lose a life every time it gets hit by a villain or if a villain reaches the planet.

TECHNICAL APPROACH

Superhero: moves like the paddle in the simple Pong game from exercise02. It will have an x and y location, and it will move along the x-axis (have an x velocity – vx).

Control Keys: I will probably program the left and right keys as the control keys, using keyPressed() and keyReleased().

Classes: need to define a Villain class and a ShootingStar class, as I want to have many of them spawn randomly within the window during the game.

Villains & Shooting Stars: will have both an x and y velocity as they will move downwards but will also move organically using noise().

Collisions: need to check to collisions between the superhero and the villains, and between the villains and the planet. Same concept as the collisions in the Pong midterm or with the exercise05 Griddies and Dotties.

Alpha or tint(): in exercise05, the Griddies and Dotties slowly fade away, and I want to implement the fading effect in my game. The villains will fade away when they get hit by the laser beams, and the planet will slowly fade away every time a villain collides with it. If I create the characters with shapes in processing I will use the alpha channel just like in exercise05 to make them fade; but if I use images, I will use tint() to apply a transparency to the images.

Score & Lives: just like I implemented in the Pong midterm, there will variables to keep count of these values.

Sound: I would like to implement sound effects whenever a villain is destroyed or whenever the superhero loses a life, or when the planet is destroyed by the villains. if() statements will be used to determine when the sounds will be played. Will be using the website freesound.org for royalty free sounds.

TECHNICAL RESEARCH

“The Coding Train – Coding Challenge #1: Starfield in Processing”
https://www.youtube.com/watch?v=17WoOqgXsRM
This tutorial will help with creating the animated star field background.

“Programming projectiles in processing”
https://www.youtube.com/watch?v=9aSx40aeeak
This tutorial will help with implementing the laser beams for the user.

tint() – Processing
https://processing.org/reference/tint_.html
This will help to learn how to make my planet and villain images fade away/become transparent.

“Parallax Scrolling: A Simple, Effective Way to Add Depth to a 2D Game”
https://gamedevelopment.tutsplus.com/tutorials/parallax-scrolling-a-simple-effective-way-to-add-depth-to-a-2d-game--cms-21510
This will help me to implement the vertical parallax scrolling background.

freesound
https://freesound.org/browse/
This website has royalty free sounds and I will search for my sound effects.

Sound
https://processing.org/reference/libraries/sound/index.html
Along with using the class slides, I will use the processing website to learn more about implementing sounds. I will need to import the sound library as well.