CGRA151 Project Report

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Name of game/artwork: Jump Quest

Vision

This game is a 2d shooter platformer. There will be a mixture of jumping, shooting, and problem-solving required to progress throughout the game. The aim will be to dodge the enemies and eliminate them, to work through each map to reach the car to escape for victory. Once the player reaches the end of the level, they will enter a new one, with different gameplay aspects and visuals.

Achievement

I managed to achieve everything that I had stated. The game includes 3 different types of enemies, a menu screen with multiple selection options, a shop which allows the user to interact and upgrade throughout the game, and multiple interactable entities such as scrolls, coins and cars. I did not however incorporate the game-changing mechanics such as anti-gravity and map rotation as these did not suit the overall theme of the game. The game meets all the criteria for this project, with the use of many player interactions and engagement, multiple levels and user inputs.

Technical Challenges

In creating this game there were many challenges faced, such as collision, live-updating multiple entities, smooth runtime, and enemy ai. I managed to overcome all these challenges with determination and some googling of course. To further explain; for the enemy AI, although the AI is quite simple, the logic behind getting the AI to track the player's movement, follow, and determine whether to shoot or not when it can see was quite difficult. However, once I had run through some diagram maps to follow the logic and then implemented it, it worked very well. Secondly, for the smooth runtime and multiple entities, this meant creating multiple classes with different parameters and then creating an ArrayList of each class. I used the CSV file to map each entity, and if the entity was an enemy of type (melee/normal/heavy) then add it to that ArrayList. Additionally, I then run through each ArrayList to check for collisions, bullets, deaths, updates and draws. This hugely decreased the runtime lag, and also made for much cleaner code.

Reflection

Overall I am extremely happy with this assignment, and honestly, it was neither harder nor easier than I expected. I knew what I was capable of doing due to creating a game with java before, however, there were also difficulties faced when coming up with new ideas, or implementing things using processing’s syntax. My plan matched reality very well, mainly coming down to the time and effort left, rather than my own capability. I believe my game is very well polished and could be a real game played by players. If I was to redo this project differently, I would likely optimize more time into adding sound effects and increasing the number of animations for the sprites, as this would make the game feel more fluent. I would also work on additional levels, and add more to the story to bring the whole game together.