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Dr. Zordan – CPSC 4160

Initial Game Proposal

For the game that I would like to create, I took a lot of inspiration from the game Jetpack Joyride. The idea is that there is a main character that gets stranded in space and needs to get back to their spaceship to be able to leave the world and get back to Earth. There is some life in the planet that he is stranded on that are hurling space rocks/asteroids to try to get in the way and "eliminate" the character. Using the basis of Jetpack Joyride's mechanics in a limited-gravity setting, the character is to avoid these obstacles while retrieving broken spaceship parts on the way through a couple of levels before fixing the spaceship and heading back to Earth. This type of game could be an considered an endless side-scroller, but there is an element of multiple levels and an objective to accomplish this.

As I mentioned earlier, the basic mechanics will be like Jetpack Joyride. In that game, the character could only be moved in the vertical plane to dodge obstacles. It was sort-of taken place in outer space, where the jetpack was propelling the up and down movement and used a velocity-delta model. I plan on continuing that vertical plane and velocity-delta model notion, but my character doesn't have anything but the gravitational force of the unknown planet that the character is stuck on. Therefore, the initial vertical jump can be controlled by the user and has a max jump size of the entire height of the screen. The height of the jump is controlled by the length that the jump key is pressed by the user and therefore follows the velocity-delta model. Going back down to the surface is based off the gravity constraint. The goal of the game is again to find the parts to the spaceship. They will be randomly located with a specified number of

parts per level. The main character will have to retrieve these parts by jumping through them while avoiding the rocks/asteroids that are coming for them. If a rock/asteroid hits the main character, the level is over and the play loses. The challenge will increase throughout the levels by having more rocks/asteroids and increasing the speed in which they hit. Another challenge that I am contemplating is having certain parts of the level scroll in different directions (rather than just left to right).

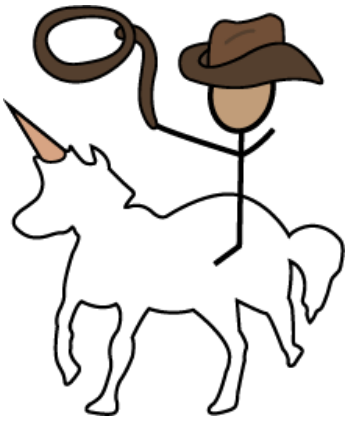
There is really only one "character". I took the idea for this character when watching the movie "The Martian" when Matt Damon was talking about that he was a space cowboy. So, I made a literal space cowboy, and since that is probably not realistic at all, I put him on a unicorn as well. I have a drawing of the entire picture where the sprite is inside of a rocket ship and I am using pieces of that as the game pieces. I plan on just cropping like the wing and nose off of the ship for the pieces of ship that the character needs to gain. For the background, I plan on using a cratered, blue surface that will take up the entire screen (like a blue moon ground would look). For the rocks/asteroids, I plan on using the same image for the asteroids but vary the sizes of them. (I will put the images at the bottom of this document).

This game is not going to require much input from the user. I will have the spacebar as the user's way to jump. I was also have both the escape and the 'p' key map to the pause menu. The starting menu will just have a button to play now and I don't plan on having the ability to save the game. Both the starting menu and the pause menu will be able to be interacted with using a mouse and clicks. The pause menu will have an option to resume, exit, or mute sound, as I plan on having some sound effects for when the player gets hit with a rock/asteroid, retrieves a piece of the ship, and finishes a level. I also plan on having royalty-free background music during the actual gameplay as well as a different soundtrack within the menus.

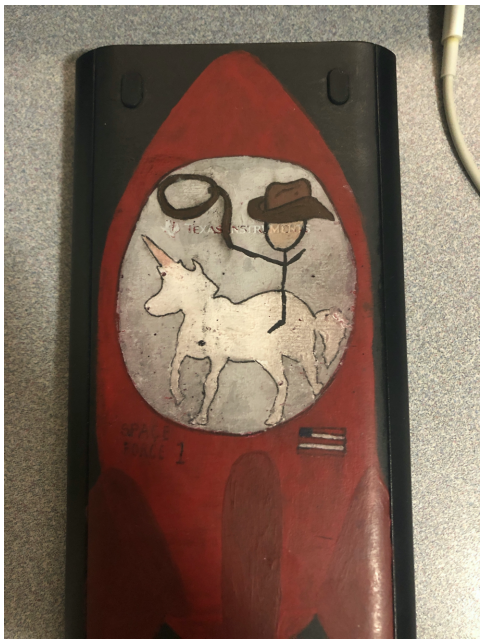
I think most of my challenges will be figuring out how to interconnect all the various pieces in different classes. I've only worked on a handful of projects in my CS classes here that required a large number of different classes. I feel like the main issue in there will be knowing when to use other class data within the class that I'm working in. I plan on circumventing this by writing my thought process down on paper as well as going to the TA's/Dr. Zordan to ask a lot of questions. Otherwise, I feel like some of the other trouble I will have is trying to sync up all of the while loops that I might need and try to get them to line up with clock ticks as I still don't totally understand the concept. On another note, if this game does turn out well, I do plan to port it into a mobile app and see how it goes by adding more robustness that is needed for a game to distributed to a much larger market.

PICTURES:

Main Character Sprite:



Picture of the Drawing I am taking inspiration from and will put into Illustrator:



Rock/Asteroid:

Blue Moon Surface:

 (This type of surface)

 (with these shades of blue overlayed in Photoshop or Illustrator)