Paxton Higgerson

Brandon Casey

Will Harris

**Project 3 - 2D Platformer**

**Interactive Game Development**

For our game, we decided to make a space platformer where the objective is to reach the flag at the top. And so we created a simple narrative: you are a space ranger stuck in the moon’s gravity and need to maneuver up to escape it. With that intent and narrative, we decided to lower the gravity to create some interesting jumping mechanics and to create some vertical levels. The jumping is very simple, but is different in that the gravity on the player is closer to the gravity of the moon. So you will jump higher and fall slower than normal. In level design, we did two things. We made the levels vertical instead of horizontal like in traditional 2D platformers, and we introduced a mechanic where falling off of one level will send you to the previous level. This is to make the game a little more challenge and provide an interesting experience for the player. That experience of climbing a mountain with the risk of every fall setting you back far. To offset that difficulty is a physics-exploit-turned-mechanic where moving into the side of a platform mid-air will “stick” the player to the side. This should give some breathing room to the player if they fall.

In the aesthetics, we tried to have a 16-bit-esque feel throughout the sprites. The background and platforms came from a great asset folder on itch.io and the astronaut came from a spritesheet on Open Game Art. These assets were the ones we could find that meshed well together. The astronaut had spritesheets for standing, running, and jumping, so animation work is cut out for us. The background has a variety of textures and sprites that could work well with parallaxing. In the UI, we found a cool font on FontSpace that looked science fiction enough to fit with the aesthetic. We also made the text color grey to make it fit in with the colors of the background.

**Contributions/Joys/Struggles-**

**Will Harris**

I created the player, camera, and game manager scripts, which includes the UI stuff, score, and parallax code. I worked on getting smooth movement and creating jumping code that would only jump when the player is on the ground. In the game manager script, I worked on having it interact with the UI and showing the player’s score, calculated by how far up the player is. I even set up the UI to be persistent and to show attributions and instructions from the main menu. I even worked on the parallax code as best as I can.

One of the joys is fine-tuning the movement and getting everything to work. I had some fun playing around with the movement, and finding out how it interacts with colliders. One of the things I found is that the player can “stick” to the side of the platform. We decided to keep this in the game because it allowed for players to recover a little bit and think through their next action. Another joy I had while making was putting together the UI for the game. Having everything come together into an aesthetic whole was enjoyable, especially when I found a good font that has the science fiction feel to it.

One of the struggles I had was getting the parallax to work. In short, the parallax worked in a unique way, seeing how the game is vertical rather than horizontal. I had to code it so that not only would it work in one direction but in multiple directions. So, I had difficulty getting the background and the parallax script to work well with each other. I tried to see if the parallax script could work with a tilemap background, but it doesn’t work. So, I had to deactivate the grid and put in a background image for parallax. It does work, but not in the way that I hoped it would work.

**Contributions/Joys/Struggles**

**Brandon Casey:**

I split the tilemaps for sprites, created scripts for various platform movements, scripted the flags to change scenes and to revert levels when the player falls off screen downward, designed the levels, added music, animations, and an endgame screen.

Designing and testing the levels was fun because I had control over how difficult I wanted the platforming to be without frustrating the player too much. I played both levels over and over to try and get an adequately difficult game. Finding unusual work arounds to problems was fun as well, for example moving platforms would toss the player off so I scripted the player to become a child of the platform while on it so they would move together. Will found some really good sprites for the game that made level design and animation really easy so that was a joy to work with. With Will and I being roommates we were able to communicate about the game and the major bugs that we found very easily and we could work together to deal with them very quickly.

Struggles, Oh boy. Two merge conflicts in particular ruined hours of work and forced me to redo half of my work. One completely deleted my animations and the other deleted half of the entire project, a change which I had unfortunately pushed, so I had to figure out how to backtrack those changes before anyone else pulled the project. I luckily recovered most of the project and only had to remake the second level and end game screen. A lesser struggle was trying to switch animation between my walking animation and a single static sprite for the idle and jumping animations. I couldn’t figure it out so the animations I did have were 2 similar looking sprites awkwardly swapping between each other for idle and jump.  
  
 **Contributions/Joys/Struggles**

**Paxton Higgerson**

I added the final animations to the player and tweaked them so that I couldn’t notice any issues with transitioning between them. In addition, I was able to do some playtesting and look over some sprites that Will had found online. That said, my contributions to this project did not extend much further than this. Will and Brandon were both incredible groupmates, and I owe a lot to them for being understanding in spite of my own shortcomings during this project. As far as joys go, playing with and tweaking the animations was a lot of fun for me. I’ve dabbled *very* lightly in keyframe animation before, but to be able to do it and then immediately play the game to test and view them was instant gratification that my other experiences had not yielded.  
 In terms of struggles, my biggest and primary one was against time. The day after this project was assigned, I had to load up on a bus with the swim team and drive 8 hours to our conference meet. Between the lack of reliable internet, frequent fire alarms waking my teammates and I up in the dead of night, having to share a small room with two other swimmers, and the swim meet itself taking up at least 10 hours of each day, finding any time at all to work was a nightmare. Over the course of the 5 days we were gone, I struggled hard to communicate with my group and undoubtedly caused them some problems because of it. That said, I’m glad I was able to contribute at least something in the end.

Attributions-

Lunar background: <https://mattwalkden.itch.io/lunar-battle-pack>

Astronaut spritesheet: <https://opengameart.org/content/space-platformer-kit>

Edge of the Galaxy Font: <https://www.fontspace.com/edge-of-the-galaxy-font-f45748>

Flag sprites: <https://opengameart.org/content/flags-0>

Background Song: <https://freemusicarchive.org/music/Deep_Space_Destructors/Psychedeology/Deep_Space_Destructors_-_Psychedelogy_-_03_Return_To_The_Black_Star>