

Abstract

The general idea of my game will be using a model of the falcon heavy rocket and landing it back onto a platform. The game will include some realistic physics such as drag, velocity, acceleration etc. The rocket should be capable of movement via thrust that provides forward momentum toward the aimed point. The rocket can be landed by rotating the rocket to position it above the platform and then slowly controlling the descent to ensure the rocket doesn't crash.

Inspiration Material



Fig 1. Falcon Heavy Rocket

https://fr.wikipedia.org/wiki/Falcon_Heavy



Fig 2. Closeup Falcon Heavy Rocket

<https://spaceflightnow.com/2018/01/03/spacex-releases-close-up-images-of-falcon-heavys-pad-debut/>

Prototyping

Below are some low fidelity prototypes I used during the planning of my game. I have envisioned the main parts of the game already such as the surroundings and atmosphere of where the game is set. The rocket however, I wasn't sure how to implement the design as a character so I tried to sketch out some approximations of the real life version and break it down into its key segments to better design it.

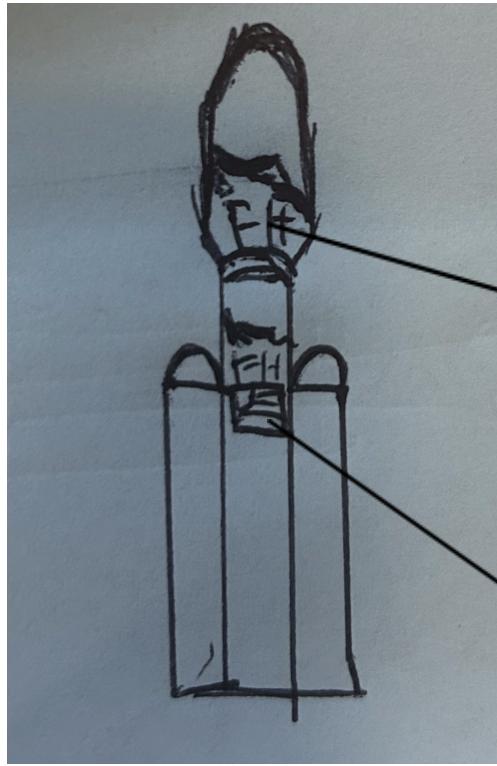


Fig 3. Full Rocket Sketch

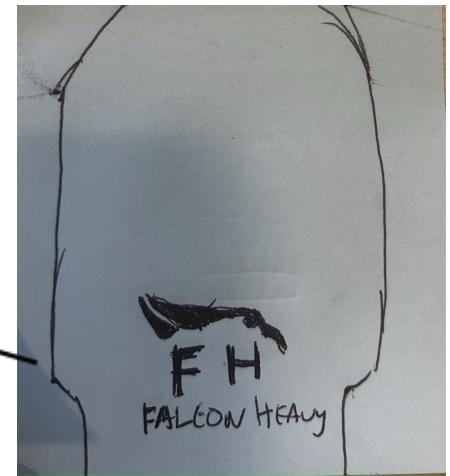


Fig 4. Close up sketch of the logo



Fig 5. Close up sketch of the flag and logo

Prototyping Review

After prototyping the designs and attempting them in P5, I realised that the intricate designs of the logo, writing and flag surpassed my design ability and therefore I had to remove them from the final design. The aerodynamic cones also proved a struggle but I managed to resolve them and decided to keep them uniform on each rocket for simplicity.

In order to make sure the design didn't look boring I decided to add some details to the rocket that deviate from the original design but I believe are a good addition for visual appeal.

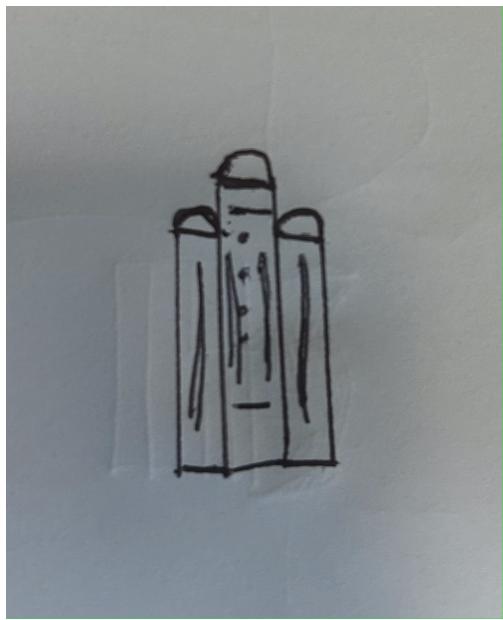
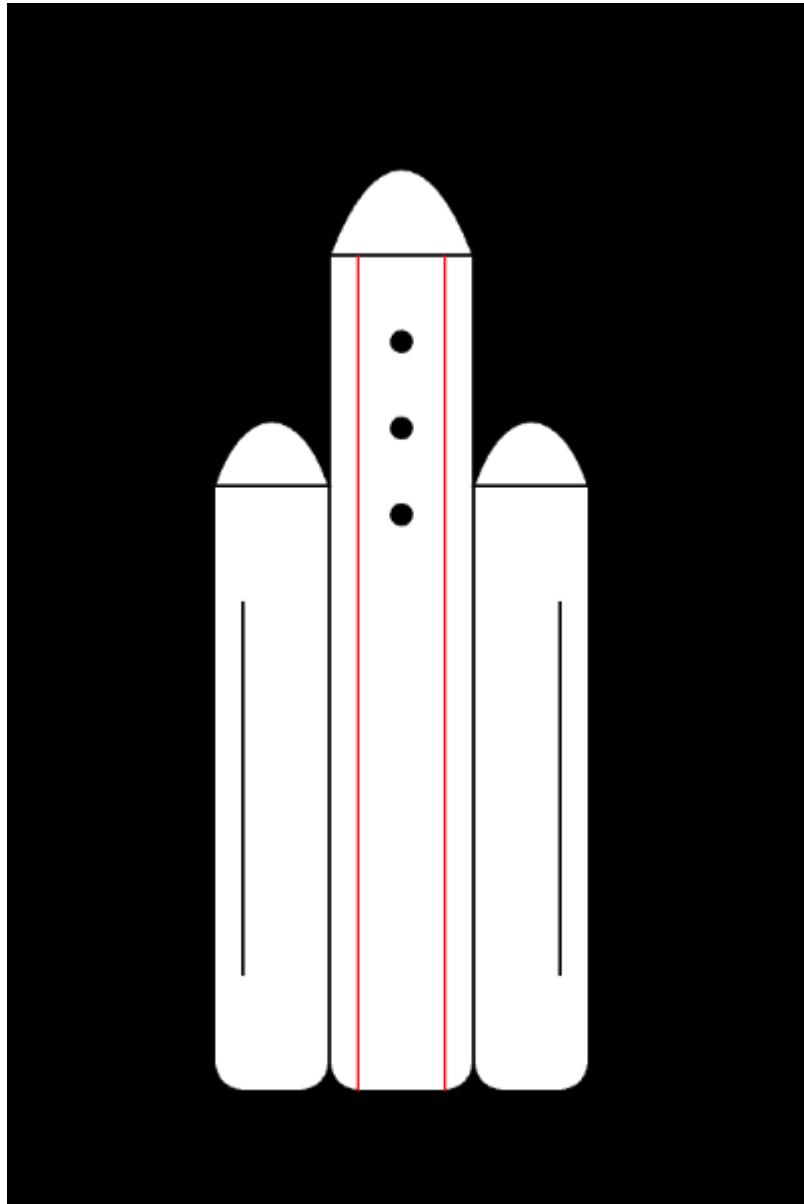


Fig 6. Simplified Prototype

I settled on a simpler design as I'm not massively creatively orientated and design isn't my strong suit. Figure 6 shows the iterated design. You will note that I have removed the logos, text, flag and large aerodynamic cone from the main booster. This was done mainly for the reason that I found writing the JavaScript to design it too challenging and an unnecessary complication in the project.

Final Design



The final design has similar features of the previous prototype and maintains the visual appeal while keeping a minimal easy to design appearance. The nose cones are created using the bezier vertex which was initially quite challenging to find the coordinates to align the various points.