

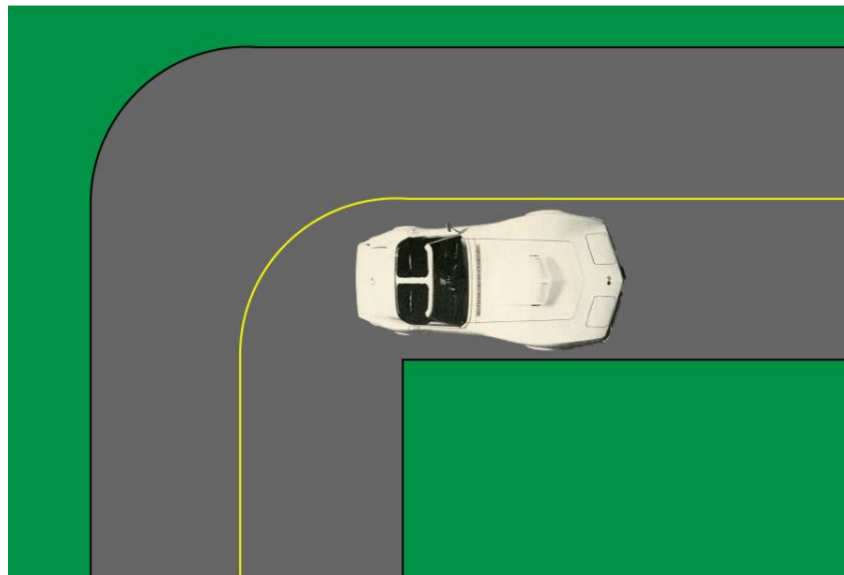
CART-253-2232-B  
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## Final project proposal

My final project is going to be a comic space travel simulation consisting of three levels. In this simulation, players assume the role of an astronaut and travel from Earth to another celestial body. The program will be based on various code exercises I've completed throughout the semester and will utilize all components of P5 JavaScript that I've learned so far.

In each level, the player will control a different kind of vehicle, and the vehicle will remain in the center of the canvas as it travels. As an astronaut, you have to transport yourself to the launching site by car (maybe a Stingray from the 60s). Therefore, the first level of the simulation will be a driving simulation where you must travel from point A to point B using polar coordinates to drive the car. Naturally, you must maintain the speed limit while still reaching the launching site before the rocket takes off.

To maintain a specific speed, I will implement a gear system or speed limiter that will increase or reduce the maximum speed of the car. There will also be boundaries on the road and other cars driving, so if the player leaves the road or collides with another car, they will lose the game.

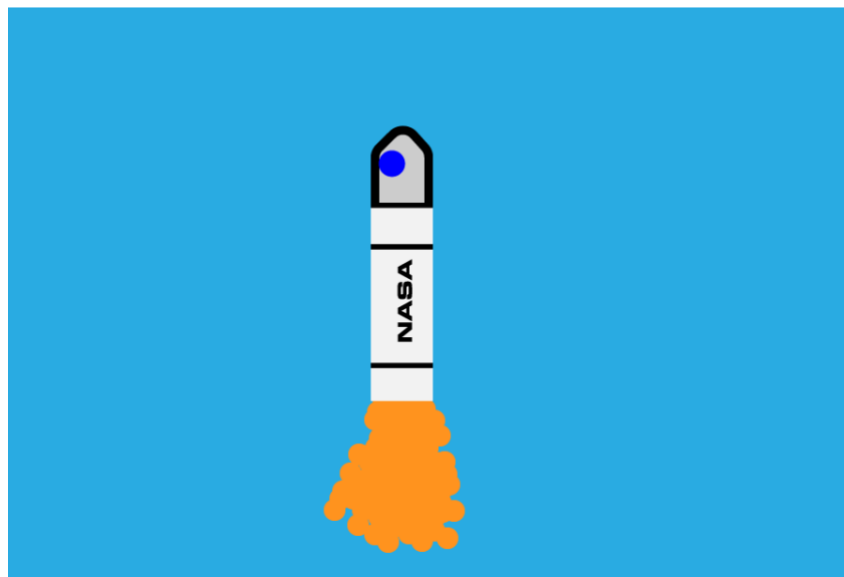


*Poor depiction I made of a stingray on the road*

The second level of the simulation will be the launch, which consists of three different stages. The background color will change throughout this stage and will reveal stars at the end. It will be a simple yet satisfying level with for loops to generate fire and smoke animations, along with sounds such as loud crackling from the rocket booster and muffled radio communication. I might record my own voice or source these sounds from the internet.

The first stage is liftoff. The user has to give an “OK” to start the countdown. Once the countdown finishes, the player has to activate the booster for liftoff. I will use a similar calculation for gravity as the one in the object-oriented programming activity, and the gravity force will decrease as the rocket ascends. Liftoff will only occur when the thrusters reach a certain power, causing the speed to increase drastically.

Stage two consists only of gaining altitude after liftoff until the rocket is out of Earth’s stratosphere. After reaching a certain altitude, stage three begins, and the rocket separates. During this stage, the only change in the simulation will be the size of the spaceship without the rocket. By this point, the background will already be a starry sky. At the end of stage 3, the space module will be separated from the orbit booster, marking the end of the second level of the simulation.



*Stage 2*

In the third level, the player will start with the space module in Earth’s exosphere, working to achieve orbit. From here, the player must engage in deep space travel. A

dashboard at the bottom of the screen will guide the travel with two compasses and distance measures, one for Earth and one for the destination. The compasses will be arrows pointing in the direction of each body, and their angles will be calculated using “atan2” to determine the tangent between the two.

This level represents the most significant programming challenge, as the player must be able to thrust and control the space module for travel. Space bodies can affect the speed, and in fact, I want to make the player depend on them, as this stage will feature a fuel meter, and using gravity for a slingshot effect will be essential. However, I have made great advancements in the prototype.

The player will complete all three stages when they reach the destination and land the space module. I am still unsure whether the destination should be the Moon, Mars, or if I should give the choice to the player.

A great inspiration to me was the show *For All Mankind*, but I want to add a funny or comic element to make the whole program more satisfying and enjoyable.

Overall, the project will present many challenges as I progress, with the main one being the orbit adjustments and centering the vehicles in the camera. As a multimedia designer, I will attempt to create most of the sounds, illustrations, and images myself through recordings and vector art. I might still resort to Envato Elements for resources.