The first area I chose to research most heavily is PVectors. Pvectors were crucial in my project because it allowed me to implement my First Person Camera. I used this website to research PVectors: https://processing.org/reference/PVector.html and https://processing.org/reference/PVector_x.html. I used other research topics such as setMag(), add(), and limit() to manipulate the values of my PVectors. My second area I chose to research heavily was 3D objects and 3D object manipulation. Here is the website I used: https://www.youtube.com/watch?v=QpU5XisnH_8. This allowed me to add a clean look to my game by adding the car and the track. This required a lot of research, as I had to initially create/find my track and car using Blender or the internet, and then research PShapes to integrate the objects into my program. I also had to research pushMatrix and popMatrix so that translations and scaling wouldn't stack on my objects and camera. My final product succeeds in its difficulty and enjoyment. My program is difficult to navigate through the track because the car drifts. I believe it is enjoyable because you can play it over and over again, and eventually get the hang of controlling the car. The program is bug-free and is realistic for the way the car drifts and can fall off the track, which I made by creating over 15 different hitboxes for different parts of the track and the car. Another good thing about my program is that by changing a couple of numbers in the code, you can change the difficulty by either slowing down the speed of the car or speeding it up. Additionally, my program has a sleek design and is minimalistic with a well-designed track floating in space. The track has many different turns and even has an overpass. I was very much challenged by the First Person Camera Movement because it is confusing to understand and is very different due to the additional direction introduced in P3D. Another thing I was challenged by was pushMatrix and popMatrix, which is now simple for me to understand, but I could not find a good explanation online, and it took a long time testing and trying out new things on my own. I believe I can improve my ability to think creatively because it is always hard for me to decide on a project idea. To make my program better, I think I could somehow research how to include audio. For example, including engine audio could make my program a lot more enjoyable and alluring. Furthermore, I could include how to time the laps around the track, which I had tried to include for a couple of days, but had to give up because I ran out of time. Timers in Java are much different than those in C++, and I would like to learn how to use them. My program can be made more complex by adding a jump on the track, or I could also improve the already existing boost idea in my code. In all, I am proud of what I accomplished, and I will definitely continue coding this at home in my free time.

Car design :
https://sketchfab.com/3d-models/jeep-compass-2022-lowpoly-e4087350c4d84d8391de09b405c96488 (At home I changed a lot of it in blender to reduce the size of the file)

Track design: (Created at home on blender by cutting parts out of this:
https://sketchfab.com/3d-models/race-track-low-poly-1c8633fd04bb4f6d9302f37fcc222afd )