- **Bi-weekly Summary:** In this previous time segment, we spent quite a bit of time working on creating the circuit that will control steering functionality, discovering how to control steering through software, and creating fields in which the system will make informed decisions to steer inside a C++ program.

- **Past two week's accomplishments**
  - Peter Wissman: Created test code for the turning of the car as well as helped in the creation of said circuit
  - Gavin Petrak: Created fields for the car's autonomous detection system, derived how to use only useful LiDAR reads and information to solve system conflict, and converted code from Python/C programs into C++.
  - Andrew Kraft: Finished circuit design and started work on completing the stand to hold all devices. Addressed all power issues we had for each device.
  - Jack Doe: Provided aid to Gavin and helped to create more fields for the car's autonomous detection system. Creating said fields in C++.
  - Jacob Nedder: Worked to study the library used by the LiDAR sensor to program in C. Observed the circuit design and code used to control the GPIO for use in the completed system.

o **Pending issues**

One of the only issues we currently have is getting each sensor mounted onto the vehicle. We have already expressed our concern about affecting the car's suspension with added weight, so we are still trying to find a safe way to keep all of our components securely on the craft while not adding too much weight

o **Individual contributions**

NAME	Individual Contributions *(Quick list of contributions. This should be short.)*	Hours this week	HOURS cumulative
Peter Wissman	Circuit design, basic circuit testing code	4	16
Gavin Petrak	Gitlab Backlog Refinement, Steering Car in Software, Autonomous Functionality	8	20
Andrew Kraft	Power requirements and circuit design finished.	10	20
Jack Doe	Autonomous functionality, software development for car steering	4	14
Jacob Nedder	LiDAR and steering circuit connection. Code developed for automatic steering.	4	16

o **Plans for the upcoming two weeks**
- Peter Wissman: Help with the creation of the mounting device as well as review code for autonomy
- Gavin Petrak: Continue to create a more refined system for autonomous functionality, especially for factors that may be considered once obstacles are added into the mix.
- Andrew Kraft: Complete the stand for mounting the devices.
- Jack Doe: Continue to refine the code for autonomous function and to get to a point where object detection and traversal are in a testing stage and show real progress.
- Jacob Nedder: Work alongside the others to begin proper testing of integrated lidar and rc system code. Conduct experiments to determine tolerances needed to avoid collision.

- o **Summary of weekly advisor meeting**

  - We did not have our weekly advisor meeting as the week we were to meet, we did the peer review from class. We plan on meeting this week to review progress and discuss plans for our demo time.

- o **Midterm Feedback**

  - <u>Feedback Summarization:</u> We discussed with the other teams things we could improve on as well as ask questions to the other teams. We asked the track team what sort of software they're using for their project as well as some details on the other car team's way of doing autonomous driving. We also asked the other car team how they went about controlling the motors on their RC car. That includes turning and powering the motor.
  - <u>New Insights:</u> Some insights from the meeting included how the track team will set up their track and obstacles, which will help us implement our car's design and create code for its autonomous functionality. Furthermore, we learned how the other team is implementing their code for autonomous function, and albeit on an Arduino, we can use their l; logic as a guiding reference as we move forward, mainly because they have working object detection already enabled.
  - <u>Feedback Response:</u> For the software side of our project, which I am a part of, we started creating more successful steering fields for our car by converting previous code from Python to C++, making our autonomous functionality more refined and higher functioning. We also saw how the other car team mounted their sensors, which will help Peter and Andrew when it comes to mounting our Lidar sensor this week. We will also consider the track team's initial plans and design when further developing our car, as that is the track our car will have to traverse.