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Lab Report 1

Plan for last week:

- Find a group to do the project with and finalize it by October 1.
- Brainstorm ideas for our project.
- Purchase Raspberry Pi and supporting accessories.
- Work on Lab 1 and set up Python environment

What ended up happening last week:

- Team 4 was created with Michelle, Elijah, and Michael.
- We are leaning towards a project related to mountain bikes.
- Idea 1 is a suspension analysis system that records the damper position and damper speed of a mountain bike front fork and rear shock and provides the user with input on how to set up the suspension.
    - This system would use visual analysis to help balance the suspension front to back based on the rider's position.
    - The system would be mounted on the bike and use linear potentiometers to determine the position and speed of the dampers
    - Based on collected data, changes to the damping curves can be suggested by the device and made by the rider
- Idea 2 is to make a mountain bike simulation using an IMU mounted inside mountain bike handlebars
- For the lab, the Python environment needed to be set up using miniconda instead of anaconda. The virtual environments were not setting up quickly and using miniconda solved that issue. Opencv was successfully installed and put to use.
- For the camera object detection, a light blue envelope was used.
    - A major challenge was the lighting in my apartment, which comes from focused sources and doesn't illuminate the envelope well from all directions.
    - HSV was better than RGB for detecting the envelope because it was less susceptible to random blue spots in my testing.

Plan for this week:

- Bring mountain bike parts to further explain the suspension project idea and decide whether to do a simulation or a data acquisition system.