Group Name: Major Project Group 3

Agenda

1. Fix the servo issue in the Lidar sensor module

Meeting on 21/5/2021, 15:00
Location: Discord/Messenger
Duration: 2 hours
Attendees:

James Hanna	Rishabh Leelchand	Harry Jia	Devansh Shah

Updates from past meeting:
The servo issue has been posing quite the problem with the progress of the project. Testing of the gyro cannot fully be implemented without the servos working, also the gyroscopic equations need work.

Minutes

1. The horizontal servo of the Lidar sensor is continuing to violently shake with no apparent reason.
    a. The servos are set using the same protocols, however, the horizontal servo still seems to act up while the vertical servo works perfectly fine
    b. The horizontal servo also tends move only when it is relatively close to the angle it is set to. Also, it doesn't respond when beyond the angle it is set.
    c. Other times it just goes to the max angle it can go to despite the input angle not being the max angle
2. Changing the period value to a lower value seems to have lowered the amount it violently shakes by
    a. Change the PWMDTY cycle value also seems to affect it significantly in how it reacts and moves
    b. It moves much more calmly
    c. However, it still poses the same issues regarding the responsiveness and the accuracy and consistency of the motion when given certain input angles
3. Research into the gyroscope module has shown that the magnetometer and gyroscope readings from the Lidar sensor are not necessary to calculate pitch and roll angles.
    a. The main necessary component is the accelerometer
    b. The gyroscopic readings are rather erroneous and prone to a lot of misjudgement
    c. Also converting the gyroscopic readings to euler angles and then to pitch and roll is quite cumbersome
    d. So only the accelerometer will be used to calculate the pitch and roll angles

Action Items

Action	Person to do	Deadline
Work on other parts of the code while the servo issue remains	James	By next week meeting
Fully implement the gyro module	Rishabh	By next week meeting
Serialization module	Devansh	By next week meeting
Work on the serial input for the image module	Harry	By next week meeting