Over the past week, Jonathan has been working on ball detection by using OpenCV. This is done by using HSV to detect the green color of the tennis ball and performing a hough transform to detect the circular ball. The main problem has been that the environment needs to have constant lighting, as it is very sensitive to it. Another problem is that it will be impossible to detect both the ball and hand gestures as the two will need 2 different HSV thresholds. As a result, we will only detect hand gestures in the front menu, and detect for the ball when we go into the “ball detection” mode. Jiaxuan has been working on the control algorithm. The main algorithm was created and the piTFT ‘start/stop’ interface was tested. While the function of setting motor speed could not be tested without integrating the ball detection, the overall logic of the control function seemed to be working properly. Everything works as expected.

In the previous week, we have yet to get started with the project and have only decided on which project we will be going with. So, the past two weeks (week 3 and 4) has been about making progress.

In the upcoming week, Jonathan will be working on calculating the distance of the ball from the camera. He will also design the program to calculate offset of the ball from the middle of the robot’s viewpoint, to allow robot steering. Additionally, he will be working to detect hand gestures. Jiaxuan will work on integrating the ball detection function with the control function and do some testing on the robot.

In terms of tracking the initial plan, Jonathan is a bit behind and will be investing more time during the upcoming weeks.