

Assignment 4 Submission

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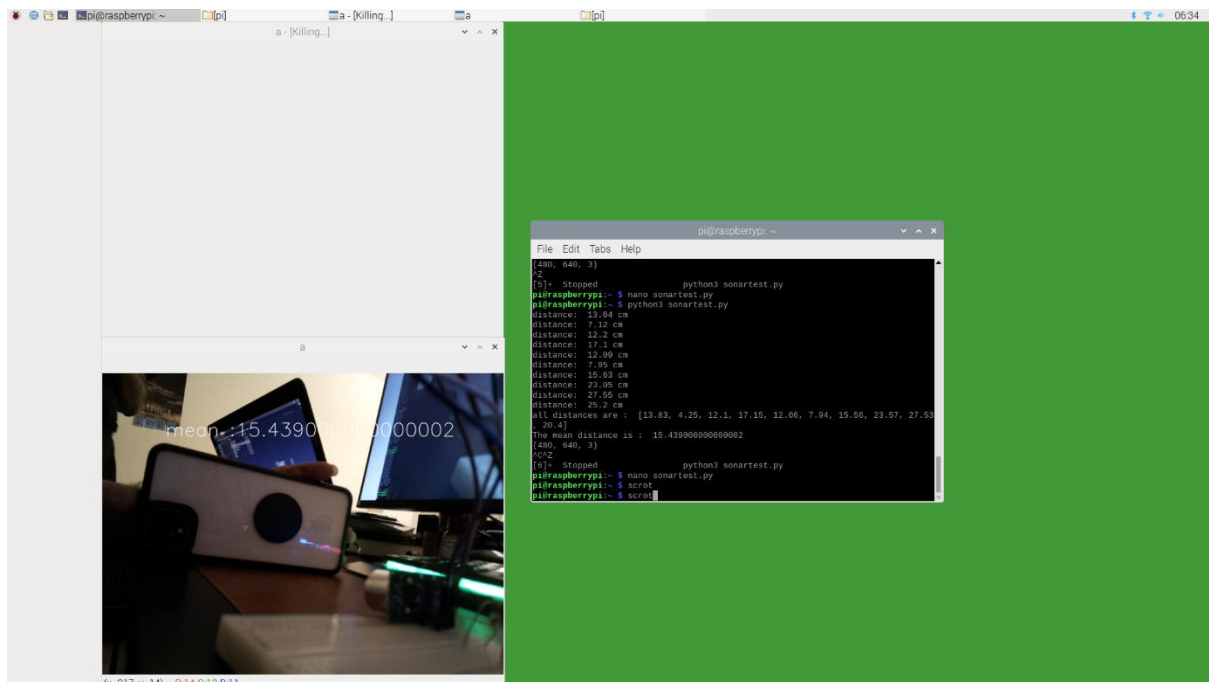
UID : 116699488

Autonomous Robotics - 809T

University of Maryland, College Park

Link to YouTube Video: <https://youtu.be/UOcsmb1nOps>

Question: 2

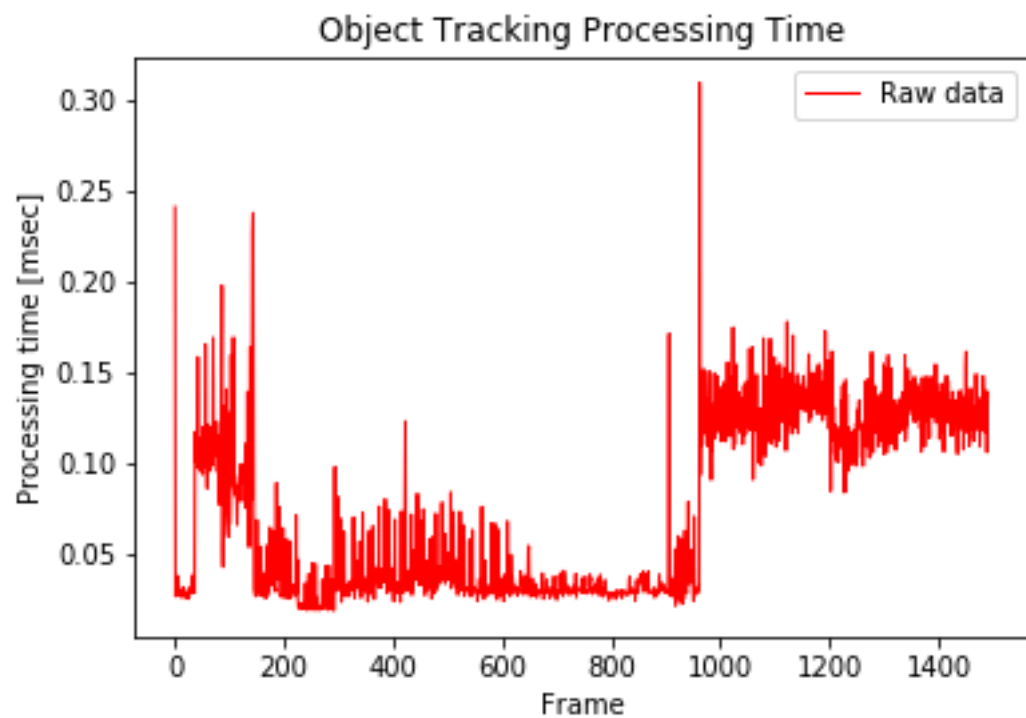


Mean distance can be seen in the image : mean_distance = 15.4390

Question: 3

The time elapsed can be seen in the image below. Here we can see that as the time progresses, the time taken to record and write each frame increases. This is because the Programme has a few conditions it must execute initially, which takes up sometime. However, if this were to carry on for long, the time taken would increase, due to the hardware limitations of the Raspberry Pi. These characteristics can be modified by altering the following parameters:

1. Cleaner code with a less complex logic
2. Cooler Operating conditions
3. Prevention of any long loops (especially infinite loops)
4. Usage of heat sinks
5. Reduced parallel processing with other programmes



In the second image it is shown that most frames take about the same time to execute. This might be because of the conditions which changed much. However, if the programme were to run longer, the histogram would show increased mode of data in longer time frame. This can be altered by the same parameters mentioned above. A closer representation of the histogram plot can be obtained by tweaking the parameter for the number of bars. Here we have the x axis equivalent to the number of frames, which are in direct proportion to the duration of the video.

