

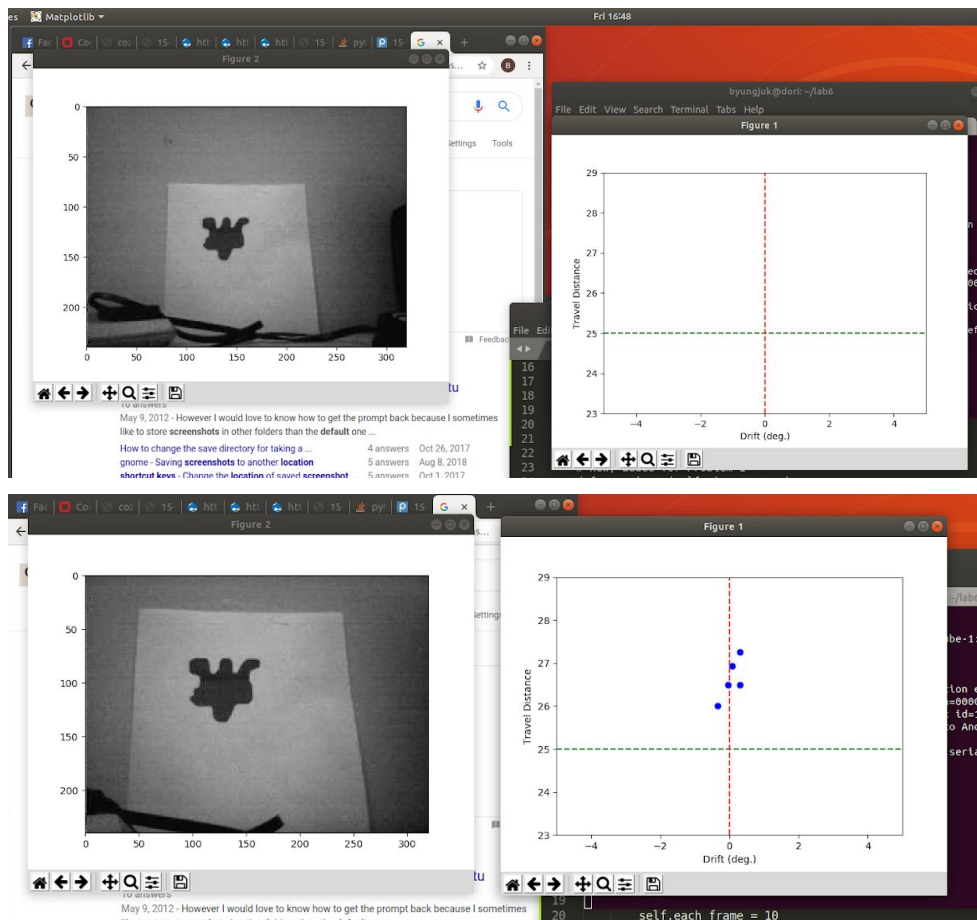
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15-494 Cognitive Robotics
2/28/20

Lab 6 Writeup

(The two of us worked together on all of these problems).

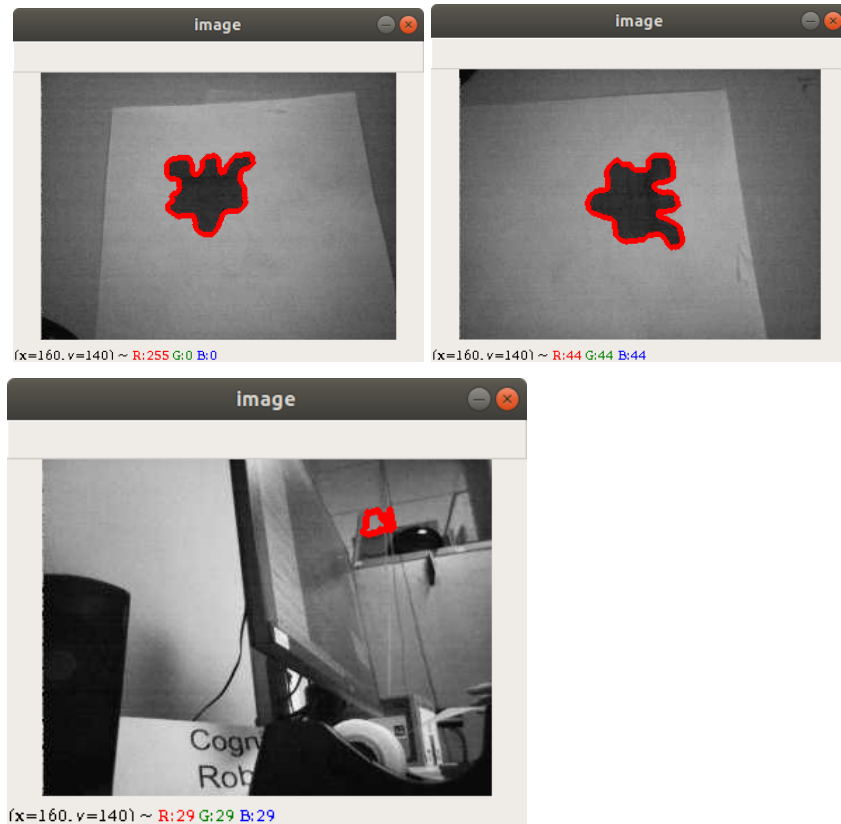
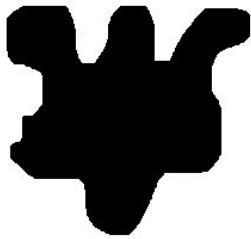
Problem One:

We added a camera viewer using matplotlib. Below are images from the beginning and end of our modified PlotDrive.fsm, though the images were plotted consistently every 10 frames.



Problem Two:

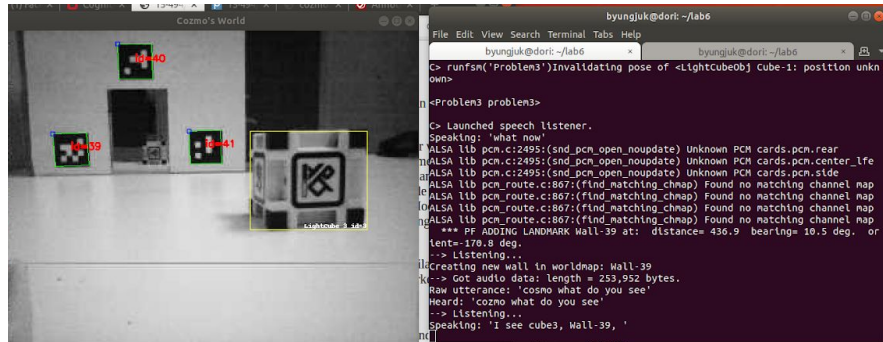
Cozmo recognizes our shape fairly well, even when it's rotated. It's not perfect, though. Below are the shape itself, two successful recognitions (from the OpenCV display), and one failed one (when the shape wasn't present).



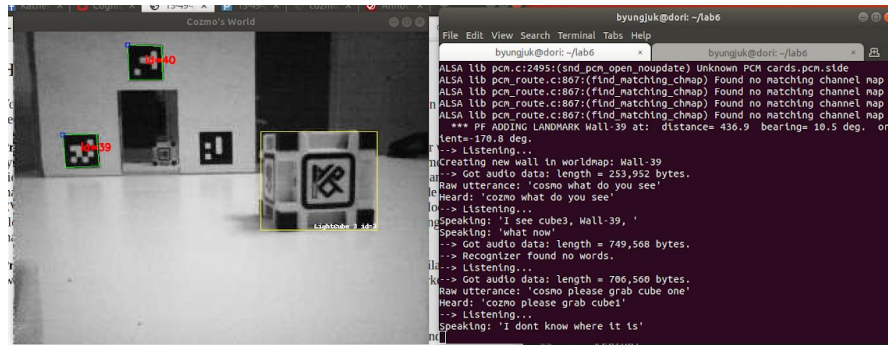
Problem Three:

We set up Cozmo in front of the Shack and a light cube and asked a series of questions to make Cozmo perform a sequence of actions. First we tested whether he could properly reply to "Cozmo, what do you see?". Then, we tested whether he could grab any cubes in his vision as well as doorways. He passed all of our tests and was able to successfully perform all the tasks we asked him without any issues, complaining when it was appropriate.

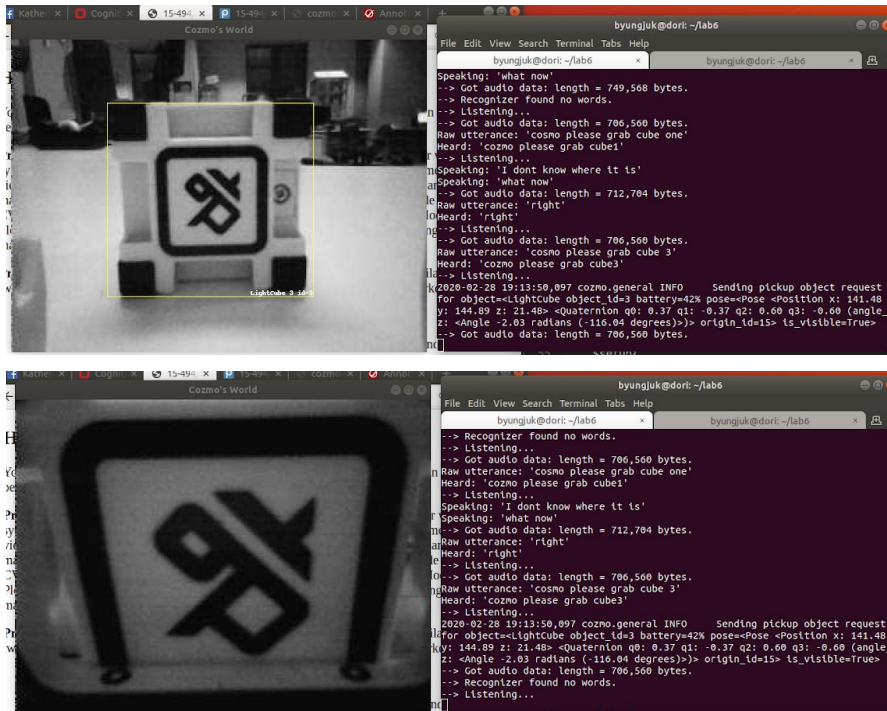
We first asked Cozmo what he saw. He correctly said that he saw Cube3 and Wall 39 as shown in the viewer.



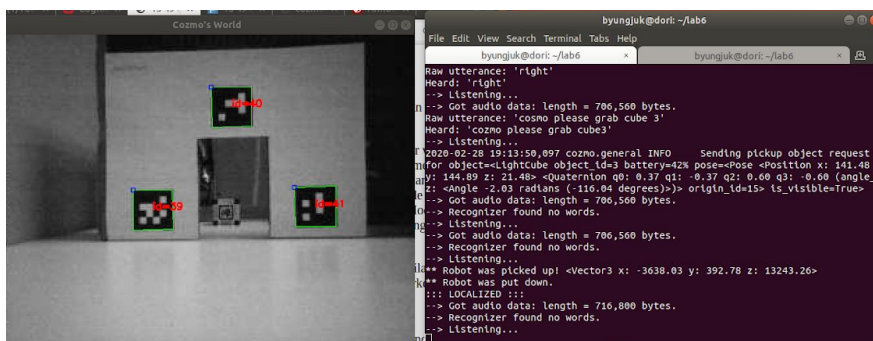
Then we asked Cozmo to grab Cube1, which was not visible, to which he complained that he didn't know where it was.



We then asked Cozmo to grab Cube3 that was in his view. He proceeded to pick up Cube3 and put it down.



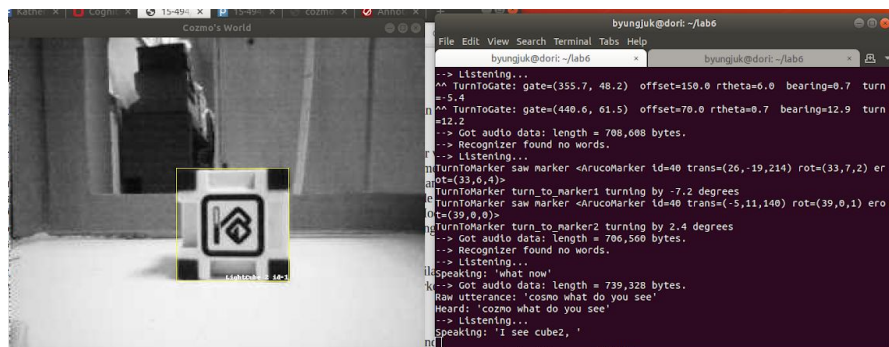
After Cozmo grabbed Cube3, we took away the cube so that Wall 39 would be in view again, and placed Cube2 inside the shack.



We then told Cozmo to drive through doorway 40 corresponding with wall 39. He followed the instructions and passed through doorway 40, stopping right in front of Cube2.



We asked Cozmo again what he saw, and he replied as expected, saying he only saw Cube2.



As the last part of the sequence, we asked Cozmo to go through a random doorway he did not know about. He complained, saying he didn't know where it was, as expected.

