ME449 Homework 1

Sean Morton, 10/14/22

Part 1B

Graphical user interface, text, application

Description automatically generated

This is the UI script for Scene 1 in CoppeliaSim. I changed the group layouts of the UI so that all the vertical boxes “vbox” were changed to horizontal boxes “hbox”.

Parts 1B + 2

A screenshot of a computer

Description automatically generated with low confidence

This is a screenshot of my CoppeliaSim Scene, showing:

* The changes to the UI I made
* The position of the robot after moving to the joint angles calculated in my Python script
* The SE(3) matrix corresponding to the orientation of the robot. The rotation matrix within the SE(3) representation is approximately equal to the rotation matrix Rsb I calculated in Python, within 2 decimal places. Below: comparison between CoppeliaSim and Python output

Text

Description automatically generatedText

Description automatically generated

See attached for Python code + full outputs