Introduction

Integration is the last lab in EECS 16B where you combine everything you have done in previous labs to complete the S1XT33N car project. For hands-on lab students, your Integration lab checkoff will be in the form of a final demo. You must demo your car live in-person and your car must meet the requirements specified below to get checked off.

Grading

Integration/Final Demo is worth 10% of your lab grade (8 global course points). Like regular lab checkoffs, the final demo is all-or-nothing; if you get checked off, you will be getting full credit for the Integration lab.

Hands-on Integration Checkoff: Final Demo Requirements

S1XT33N has 4 different drive modes, each corresponding to a word you have recorded in Lab 9: Classification. They are: drive straight far, drive straight close, turn left, and turn right. **We will give you a random sequence of 8 voice commands, one at a time, for you to demonstrate. Each drive mode will be tested twice to make sure each of your words classifies correctly at least two times.**

In the demo, you will need to demonstrate successful implementations of controls and turning. Classifications should also be accurate. You are allowed to pick up your car in-between commands to reposition and prevent it from hitting a wall.

Controls	Car goes fairly straight for straight far and straight close drive modes. The definition of straight is the same as how we defined it in Lab 7: Controls Part 1.
Turning	Car turns roughly 90 degrees for turn left and turn right drive modes.
Classification	Commands classify correctly most of the time. See the Classifications section below for more details of what is expected.

Classifications

1. **You will need to demonstrate that each of your 8 voice commands classifies correctly (the corresponding drive mode is executed) at least 1 time more than it misclassifies (the wrong drive mode is executed).** For example, if you have 0 misclassifications for a command, you need your voice command to classify correctly 1 time; if you have 1 misclassification, you need 2 correct classifications, and so forth.
2. Non-classifications, where the car does not move, either because `EUCLIDEAN_THRESHOLD` or `LOUDNESS_THRESHOLD` is not satisfied, do not count as misclassifications.
3. If, for any particular command, you reach 4 or more misclassifications, you will need to improve the classification rates and submit another checkoff request when you are ready.
4. **These requirements must hold for each of the 8 commands we ask for during the demo.**

Written by Eric Yang and Steven Lu (Fall 2021)
Updated by Eric Yang and Steven Lu (Spring 2022)