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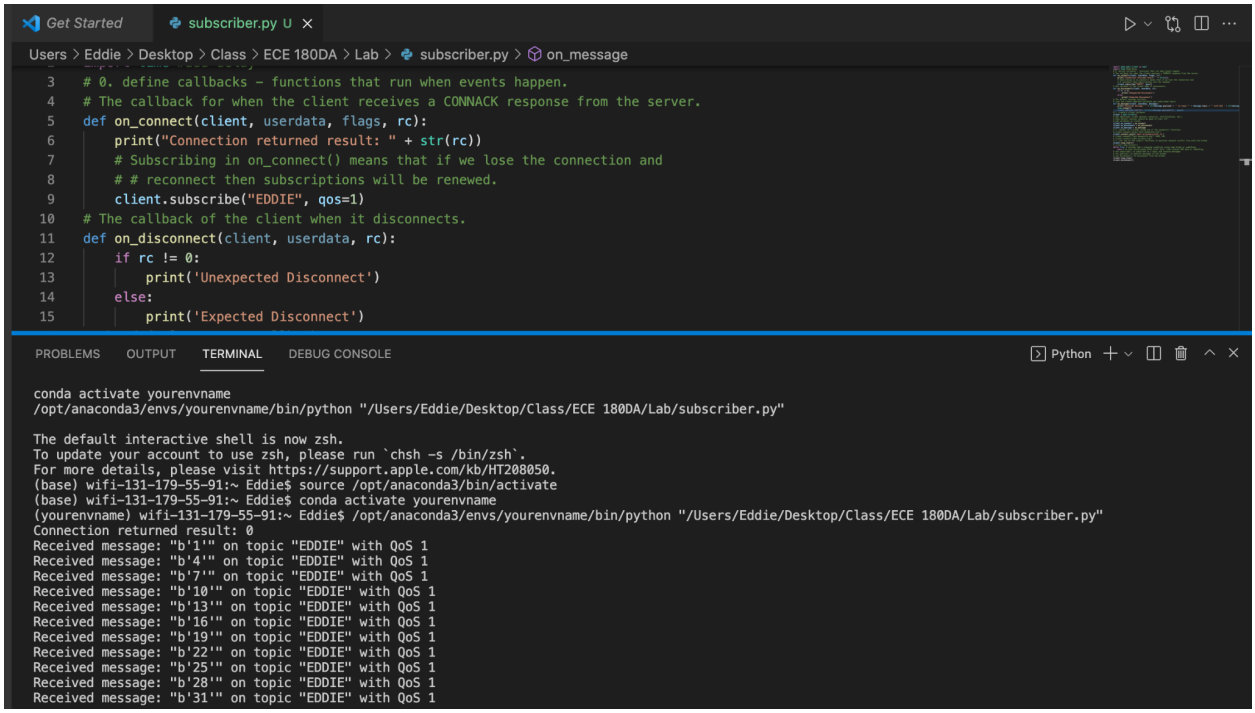
Team 4

Lab 2

Task

1. My team members Austin, Tan, and I ping ponged a counter that increments each time we receive a message with a delay of 1. The result can be seen below.



2. For this task, I am using the python speech recognition library. It is fairly good at picking up words. It was pretty good at distinguishing the letters.

```
Say something!
Got it! Now to recognize it...
result2:
{   'alternative': [   {   'confidence': 0.9524942,
                           'transcript': 'letter a letter b letter c letter d '
                                         'letter e letter F letter G'},
                       {   'transcript': 'letter a letter b letter c letter d '
                                         'letter e letter F liturgy'},
                       {   'transcript': 'letter a letter B literacy letter d '
                                         'letter e letter F letter G'},
                       {   'transcript': 'letter a letter b letter c letter d '
                                         'letter e litter F letter G'},
                       {   'transcript': 'letter a letter b letter c letter d '
                                         'letter e letter F liter G'}],
    'final': True}
You said letter a letter b letter c letter d letter e letter F letter G
```

Similar sounding words can be confused but not too bad.

It seems to be longer the phrase is, it is better for error correction. For speech recognition, it is easier to make sense out of a longer speech and correct it. It can be seen that confidence is higher for a longer phrase than for just one word.

```
Got it! Now to recognize it...
result2:
{   'alternative': [   {   'confidence': 0.96718633,
                           'transcript': "hello my name is Eddie I'm 22 years "
                                         "old I'm studying electrical "
                                         "engineering and I'm taking design "
                                         "course this quarter I'm really "
                                         'enjoying this class'},
                       {   'transcript': "hello my name's Eddie I'm 22 years "
                                         "old I'm studying electrical "
                                         "engineering and I'm taking design "
                                         "course this quarter I'm really "
                                         'enjoying this class'},
                       {   'transcript': "hello my name is Eddie I'm "
                                         "22-years-old I'm studying electrical "
                                         "engineering and I'm taking design "
                                         "course this quarter I'm really "
                                         'enjoying this class'}],
    'final': True}
You said hello my name is Eddie I'm 22 years old I'm studying electrical enginee
ring and I'm taking design course this quarter I'm really enjoying this class
Say something!
Got it! Now to recognize it...
```

```
Say something!
Got it! Now to recognize it...
result2:
{   'alternative': [   {'confidence': 0.69279182, 'transcript': 'cat'},
                       {'transcript': 'Kat'},
                       {'transcript': "can't"},
                       {'transcript': 'cats'}],
    'final': True}
You said cat
```

Playing music in the background causes a little bit of noise, but most of the time if the music is not too loud, it works relatively well. Using a better microphone than just a laptop's built-in microphone and talking a little louder to the microphone can help improve the performance in noise. When I played the song relatively loud, it picked up some words from the song and the result can be seen below. I only said "I am very thirsty, I want to drink water".

```
Got it! Now to recognize it...
result2:
{   'alternative': [   {   'confidence': 0.97219551,
                           'transcript': "I'm very thirsty I want to drink "
                                         'water'},
                       {   'transcript': "I'm very thirsty I want to drink "
                                         'water because too'},
                       {   'transcript': "I'm very thirsty I want to drink "
                                         'water with those two'},
                       {   'transcript': "I'm very thirsty I want to drink "
                                         'water it goes to'},
                       {   'transcript': "I'm very thirsty I want to drink "
                                         'water it does too'}],
    'final': True}
You said I'm very thirsty I want to drink water
Say something!
```

a)Using this speech program, we can use speech for switching tools in our game. The word “switch” can be used to switch between shovel and slingshot.
b) In our game, we are thinking of using speech recognition to switch roles. I do not expect our speech recognition to be that complicated. It should be relatively simple since we are recognizing only one or a few words to switch tools and do simple actions.
c) Having good accuracy is always better and we would like to have the speech processed quite fast not to frustrate the player. Failing to recognize often might hurt the progress of the game since the player will need to switch tools. However, the speech is not the main part of the game. Therefore, it would not hurt as much as the other parts of the game.
d) I think it will be ideal if we can choose an environment where there is no loud background noise. However, having a good microphone rather than a built-in laptop microphone can be really helpful to clearly recognize the player’s speech.