Subject: 21AIE315

Lab Session: 01

Notes:

1. Please read the assignment notes carefully and comply to the guidelines provided.
2. Code should be checked into the GitHub and the report to TurnItIn. These details shall be provided in the Lab.
3. If you have not completed the prerequisite assignments, please complete them before starting these assignments.
4. Please use your headphone / earphones for lab experiments. Avoid using the device microphone / speakers (not to disturb others).

References:

1. https://librosa.org/doc/latest/index.html#
2. https://librosa.org/doc/latest/generated/librosa.load.html#
3. https://www.kaggle.com/code/robikscube/working-with-audio-in-python

Main Section (Mandatory):

Please speak "AI in Speech Processing" and record your voice. This recorded voice shall be used for this lab experiment.

A1. Load the recorded speech file into your python workspace. Once loaded, plot the graph for the speech signal. You may use the below code from librosa as a reference.

```
>>> y, sr = librosa.load(filename)
>>>librosa.display.waveshow(y)
```

A2. Observe the length & magnitude range of the signal from the plot. Observing the plot, relate to the spoken words and silence between the words.

A3. Take a small segment of the signal and play it.

A4. Play around with your recorded speech signal for various segments. Understand the nature of the signal. Also observe with abruptly segmented speech, how the perception of that speech is affected.

Report Assignment:

1. Take the IEEE template and create a title for your project.
2. Find and obtain 10 research papers (journal and conference articles) from IEEE, ScienceDirect, Springer or other such databases. Perform quick study on these papers.
3. Based on the study of papers, write the introduction section in your report.