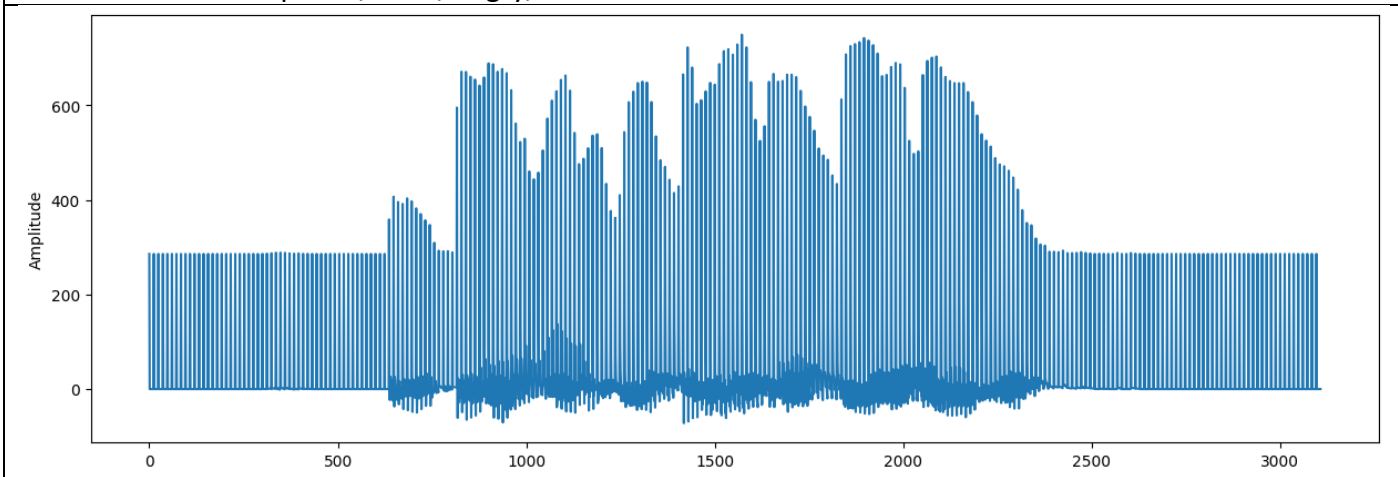**Task 8.1P Answer sheet**

Fill in the required results (numerical values, visualisations).
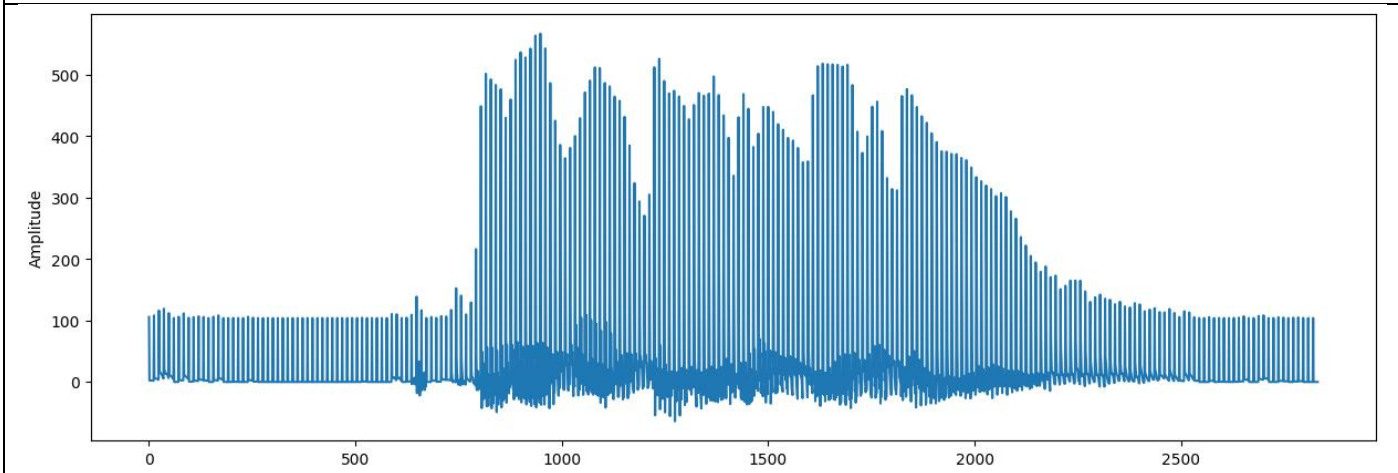
Notes:

-   Examples (if any) need to be replaced by your results.
-   Missing any required results will result in a re-submission.

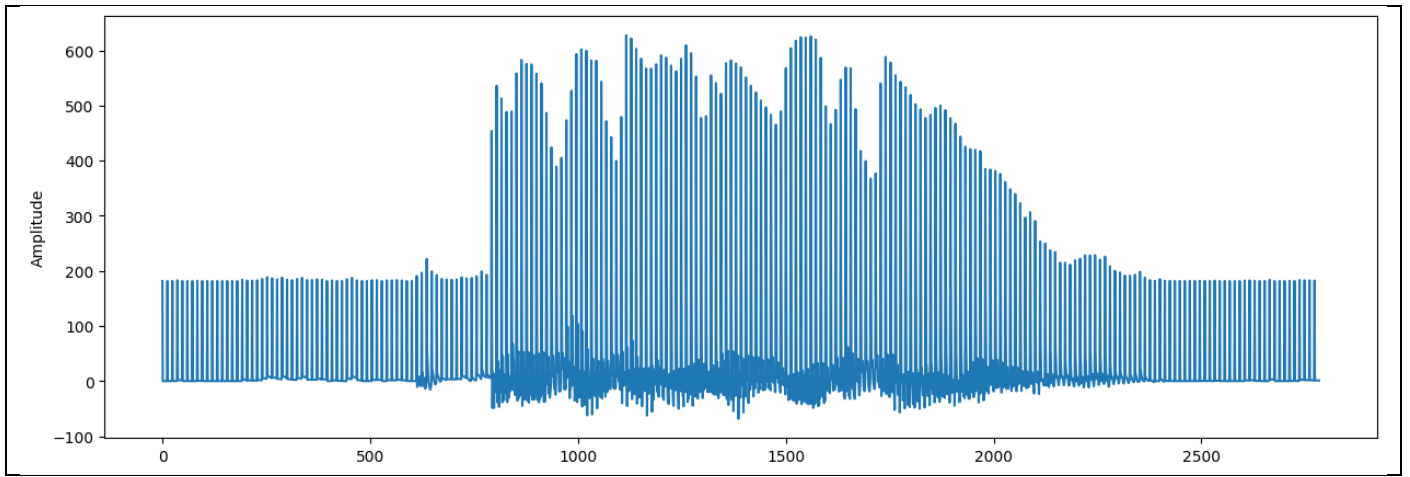# 1. Visualisation of MFCC features of the following speech files using the mfcc_extraction method.

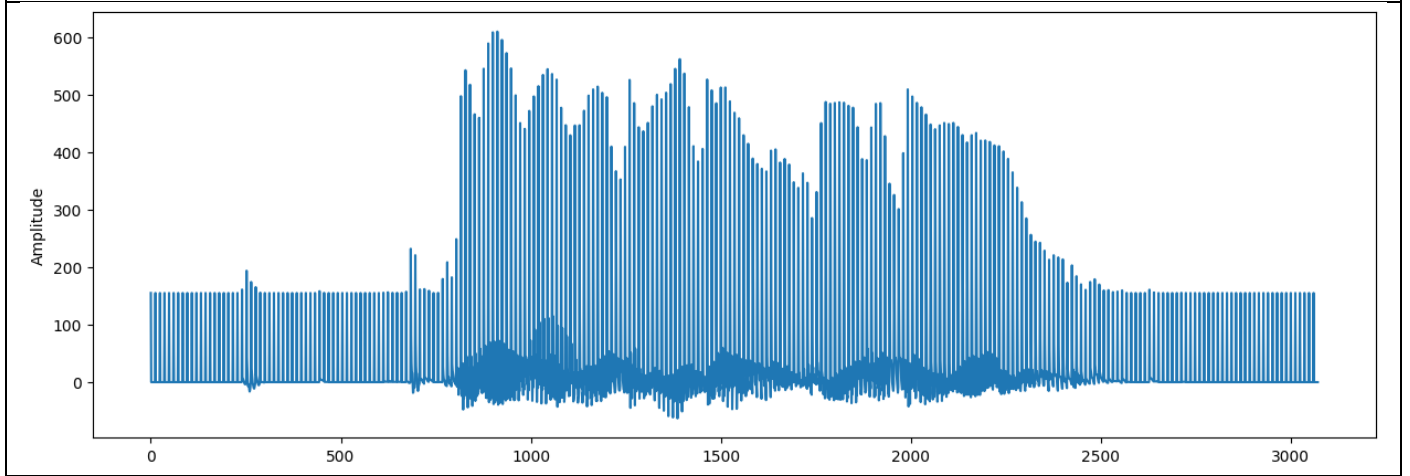| **Filename:** EmotionSpeech/Train/Angry/03-01-05-01-01-01-01.wav |
|---|
| |

Filename: ' EmotionSpeech/Train/Calm/03-01-02-01-01-01-01.wav'

Filename: ' EmotionSpeech/Train/Happy/03-01-03-01-01-01-01.wav'

Filename: 'EmotionSpeech/Train/Sad/03-01-04-01-01-01-01.wav'

2. Emotion recognition performance (overall accuracy, per-class accuracy, and confusion matrix) with different numbers of mfcc features

num_mfcc	Overall accuracy	Per class accuracy	Confusion matrix
10	0.656	Angry: 0.62, Calm: 0.81, Happy: 0.56, Sad: 0.62	[[26 0 6 0] [2 18 8 4] [10 0 20 2] [3 6 3 20]]
12	0.664	Angry: 0.62, Calm: 0.81, Happy: 0.59, Sad: 0.62	[[26 0 6 0] [2 19 8 3] [10 0 20 2] [3 6 3 20]]
14	0.664	Angry: 0.62, Calm: 0.81, Happy: 0.59, Sad: 0.62	[[26 0 6 0] [2 19 8 3] [10 0 20 2] [4 6 2 20]]
16	0.656	Angry: 0.62, Calm: 0.81, Happy: 0.56, Sad: 0.62	[[26 0 6 0] [2 18 8 4] [10 0 20 2] [4 6 2 20]]
18	0.633	Angry: 0.62, Calm: 0.81, Happy: 0.47, Sad: 0.62	[[26 0 6 0] [2 15 11 4]

			[10 0 20 2] [3 6 3 20]]
20	0.641	Angry: 0.62, Calm: 0.81, Happy: 0.50, Sad: 0.62	[[26 0 6 0] [2 16 11 3] [10 0 20 2] [3 6 3 20]]