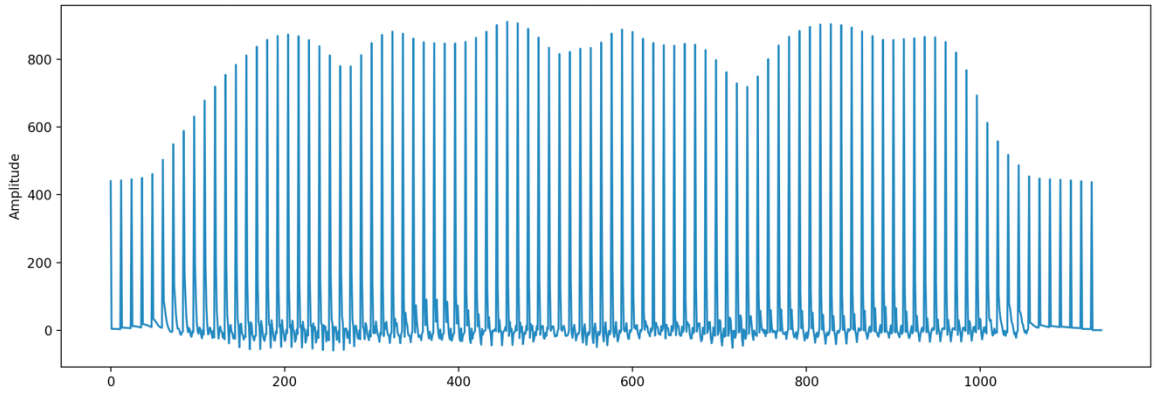
Task 8.1P

MFCC diagram



SVM and AdaBoost classifier

```
------ For num_mfcc = 12 ------
The confusion matrix for the SVM classifier is:
[[31  0  1  0]
 [ 3  7 13  9]
 [17  1 13  1]
 [ 5  8  2 17]]
The accuracy score for the SVM classifier is 53.125%

The confusion matrix for the AdaBoost classifier is:
[[26  0  6  0]
 [ 8  4  4 16]
 [19  4  6  3]
 [ 1  5  4 22]]
The accuracy score for the AdaBoost classifier is 45.312%


------ For num_mfcc = 14 ------
The confusion matrix for the SVM classifier is:
[[32  0  0  0]
 [ 3  7 13  9]
 [18  1 12  1]
 [ 5  8  2 17]]
The accuracy score for the SVM classifier is 53.125%

The confusion matrix for the AdaBoost classifier is:
[[25  1  6  0]
 [11  0  6 15]
 [18  3  8  3]
 [ 0  0  9 23]]
The accuracy score for the AdaBoost classifier is 43.750%
```

```
------ For num_mfcc = 16 ------
The confusion matrix for the SVM classifier is:
[[32  0  0  0]
 [ 3  7 13  9]
 [18  1 12  1]
 [ 5  8  2 17]]
The accuracy score for the SVM classifier is 53.125%

The confusion matrix for the AdaBoost classifier is:
[[30  0  2  0]
 [14  0 12  6]
 [24  0  4  4]
 [ 4  1 13 14]]
The accuracy score for the AdaBoost classifier is 37.500%


------ For num_mfcc = 18 ------
The confusion matrix for the SVM classifier is:
[[32  0  0  0]
 [ 3  7 13  9]
 [19  1 11  1]
 [ 5  8  2 17]]
The accuracy score for the SVM classifier is 52.344%

The confusion matrix for the AdaBoost classifier is:
[[31  0  1  0]
 [ 6  1 18  7]
 [21  0  8  3]
 [ 0  4  7 21]]
The accuracy score for the AdaBoost classifier is 47.656%
```

```
------ For num_mfcc = 20 ------
The confusion matrix for the SVM classifier is:
[[32  0  0  0]
 [ 3  7 13  9]
 [19  1 11  1]
 [ 5  8  2 17]]
The accuracy score for the SVM classifier is 52.344%

The confusion matrix for the AdaBoost classifier is:
[[30  0  2  0]
 [ 8  1 16  7]
 [21  0  8  3]
 [ 0  4  7 21]]
The accuracy score for the AdaBoost classifier is 46.875%


------ For num_mfcc = 22 ------
The confusion matrix for the SVM classifier is:
[[32  0  0  0]
 [ 3  7 13  9]
 [19  0 11  2]
 [ 5  8  2 17]]
The accuracy score for the SVM classifier is 52.344%

The confusion matrix for the AdaBoost classifier is:
[[28  0  4  0]
 [12  1 13  6]
 [20  1 10  1]
 [ 0  4 20  8]]
The accuracy score for the AdaBoost classifier is 36.719%
```

```
------ For num_mfcc = 24 ------
The confusion matrix for the SVM classifier is:
[[32  0  0  0]
 [ 4  7 12  9]
 [19  0 11  2]
 [ 5  8  2 17]]
The accuracy score for the SVM classifier is 52.344%

The confusion matrix for the AdaBoost classifier is:
[[28  0  4  0]
 [10  1  9 12]
 [21  1  8  2]
 [ 0  4  5 23]]
The accuracy score for the AdaBoost classifier is 46.875%


------ For num_mfcc = 26 ------
The confusion matrix for the SVM classifier is:
[[32  0  0  0]
 [ 4  7 12  9]
 [19  1 11  1]
 [ 5  8  2 17]]
The accuracy score for the SVM classifier is 52.344%

The confusion matrix for the AdaBoost classifier is:
[[26  0  6  0]
 [12  1  4 15]
 [20  3  7  2]
 [ 0  3  5 24]]
The accuracy score for the AdaBoost classifier is 45.312%
```

```
------ For num_mfcc = 28 ------
The confusion matrix for the SVM classifier is:
[[32  0  0  0]
 [ 4  8 12  8]
 [19  1 11  1]
 [ 5  8  2 17]]
The accuracy score for the SVM classifier is 53.125%

The confusion matrix for the AdaBoost classifier is:
[[29  0  3  0]
 [12  1 13  6]
 [20  1 10  1]
 [ 1  4 19  8]]
The accuracy score for the AdaBoost classifier is 37.500%


------ For num_mfcc = 30 ------
The confusion matrix for the SVM classifier is:
[[32  0  0  0]
 [ 4  7 12  9]
 [19  1 11  1]
 [ 5  8  2 17]]
The accuracy score for the SVM classifier is 52.344%

The confusion matrix for the AdaBoost classifier is:
[[26  0  6  0]
 [10  0  5 17]
 [20  4  4  4]
 [ 0  2  3 27]]
The accuracy score for the AdaBoost classifier is 44.531%
```

Based on the all the accuracy scores as shown above, the SVM classifier is more accurate as compare to the AdaBoost Classifier.