```
(myenv) PS C:\Users\dhanu\Desktop\my_sem5\ML\EC_SECTION_C_PES2UG22CSS174> python Test.py --ID EC_C_PES2UG22CS174_Lab4
features and labels are obtained --before balancing of the dataset
No of feature are 6
Decision Tree:
              precision    recall  f1-score   support

     Hip-Hop       0.55      0.56      0.55       182
        Rock       0.90      0.89      0.89       779

    accuracy                           0.83       961
   macro avg       0.72      0.73      0.72       961
weighted avg       0.83      0.83      0.83       961

DECISION TREE RESULTS:
              precision    recall  f1-score   support

     Hip-Hop       0.55      0.56      0.55       182
        Rock       0.90      0.89      0.89       779

    accuracy                           0.83       961
   macro avg       0.72      0.73      0.72       961
weighted avg       0.83      0.83      0.83       961

LOGISTIC REGRESSION RESULTS:
Decision Tree:
              precision    recall  f1-score   support

     Hip-Hop       0.69      0.49      0.58       182
        Rock       0.89      0.95      0.92       779

    accuracy                           0.86       961
   macro avg       0.79      0.72      0.75       961
weighted avg       0.85      0.86      0.85       961

              precision    recall  f1-score   support

     Hip-Hop       0.69      0.49      0.58       182
        Rock       0.89      0.95      0.92       779

    accuracy                           0.86       961
   macro avg       0.79      0.72      0.75       961
weighted avg       0.85      0.86      0.85       961
```

```
############BALANCING OF THE DATASET##################
features and labels are obtained --before balancing of the dataset
No of feature are 6
Decision Tree:
              precision    recall  f1-score   support

     Hip-Hop       0.76      0.74      0.75       182
        Rock       0.75      0.77      0.76       182

    accuracy                           0.76       364
   macro avg       0.76      0.76      0.76       364
weighted avg       0.76      0.76      0.76       364

DECISION TREE RESULTS:
              precision    recall  f1-score   support

     Hip-Hop       0.76      0.74      0.75       182
        Rock       0.75      0.77      0.76       182

    accuracy                           0.76       364
   macro avg       0.76      0.76      0.76       364
weighted avg       0.76      0.76      0.76       364

LOGISTIC REGRESSION RESULTS:
Decision Tree:
              precision    recall  f1-score   support

     Hip-Hop       0.79      0.79      0.79       182
        Rock       0.79      0.79      0.79       182

    accuracy                           0.79       364
   macro avg       0.79      0.79      0.79       364
weighted avg       0.79      0.79      0.79       364

              precision    recall  f1-score   support

     Hip-Hop       0.79      0.79      0.79       182
        Rock       0.79      0.79      0.79       182

    accuracy                           0.79       364
   macro avg       0.79      0.79      0.79       364
weighted avg       0.79      0.79      0.79       364
```

c

Cumulative Explained Variance vs Number of Components

Cumulative Explained Variance vs Number of Components