IML
Lab-8

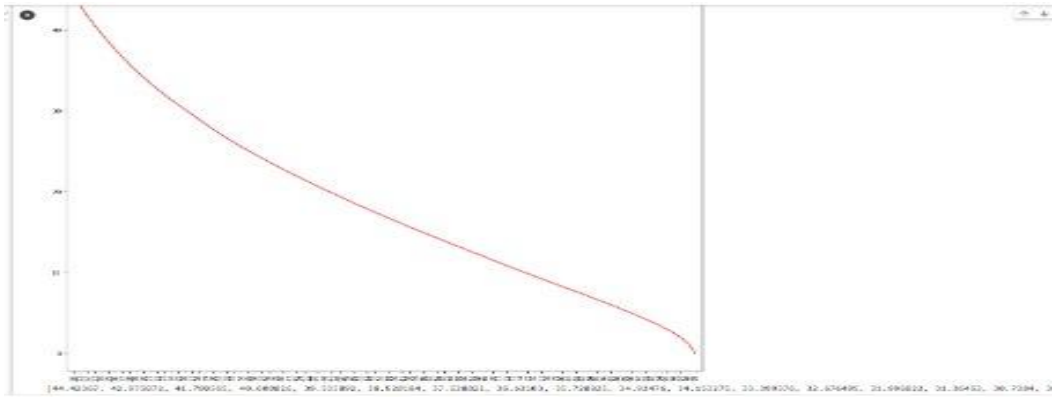
Report:

Problem 1:

In this question,

Theory-Image processing is **a method to perform some operations on an image, in order to get an enhanced image or to extract some useful information from it**. It is a type of signal processing in which input is an image and output may be image or characteristics/features associated with that image.

- I have taken a sample of datasets from a face dataset. We have taken 100 faces and 10 clases.
- Then taken images of of sample of pixel 64*64.
- Then as asked in the question I have found the component with minimum error using reconstruction error algorithm applied from 10,100. It comes out to be 90.
- Then using It applied pca taking n component at min error.
- Then taking different value of n component I have found out mean face and top eigen k faces .



The error vs component curve I got.

Problem 2:

LDA:Linear discriminant analysis (LDA) is **used here to reduce the number of features to a more manageable number before the process of classification**. Each of the new dimensions generated is a linear combination of pixel values, which form a template.

- In this Question I have taken the iris dataset and after applying lda at n component =2 and n component =1.
- The accuracy comes out to be :
  For n component =2,Accuracy =`0.8918918918918919.`
  For n component =1,Accuracy =`0.9459459459459459.`

----------Thank You----------