ML ASSIGNMENT 5

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**#** **700728240**

**question1:**

**output:**

**before scaling**

**Graphical user interface, application

Description automatically generated**

**After scaling**

**Graphical user interface, text, application

Description automatically generated**

**Comments:**

🡪Silhouette Score- ranges from −1 to +1 , a high value indicates that the object is well matched to its own cluster and poorly matched to neighboring clusters.

* After scaling the silhouette score decreased.

**Question2**

**Output:**

**Graphical user interface, text, application

Description automatically generated**

**COMMENTS:**

THE SVM ACCURACY after applying PCA(K=3) IS 91.68%

**QUESTION3 :**

**OUTPUT:**

**Chart, scatter chart

Description automatically generated**

**QUESTION4:**

**COMMENTS:**

* Both LDA and PCA rely on linear transformations and aim to maximize the variance in a lower dimension. PCA is an unsupervised learning algorithm while LDA is a supervised learning algorithm. This means that PCA finds directions of maximum variance regardless of class labels while LDA finds directions of maximum class separability'
* PCA reduces the features into a smaller subset of orthogonal variables, called principal components – linear combinations of the original variables. The first component captures the largest variability of the data, while the second captures the second largest, and so on.
* LDA finds the linear discriminants in order to maximize the variance between the different categories while minimizing the variance within the class.'