Cluster the credit card users into different groups to find any meaningful patterns.

Use Principal Component Analysis (PCA) to reduce the dimension of the feature space and

then use the K-means algorithm to find clusters. Import relevant Python libraries.

* Load dataset (CC GENERAL.csv, the name of the file when downloaded from Kaggle.)
* Check for null values and handle those values.
* Perform feature scaling using StandardScaler.
* Perform PCA with all the columns and plot number of components vs. PCA cumulative explained variance. From the plot, identify the number of components required to cover 85% of the variance.
* Perform PCA with 2 principal components with the aim of visualizing clustering.
* Find the 2 columns which give the most covariances.
* Interpret the results of PCA by looking at the covariance matrix (use get\_covariance() method of PCA).
* Perform K Means Clustering on the 2 component PCA transformed data with clusters ranging from 2 to 11 and plot the K Means inertia against the number of clusters (Elbow Method). From the elbow plot, identify the ideal required number of clusters.
* Perform K Means Clustering on the 2 component PCA transformed data with the ideal number of clusters found in the sixth bullet point.
* Visualize the clusters on a scatter plot between 1st PCA and 2nd PCA component giving

different colors to each cluster