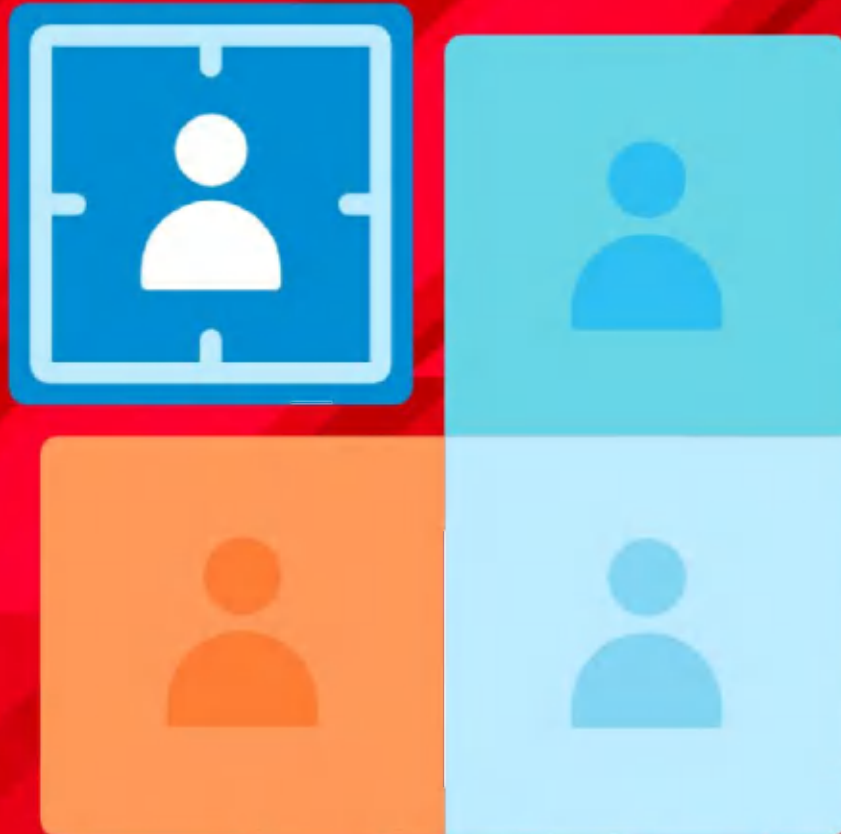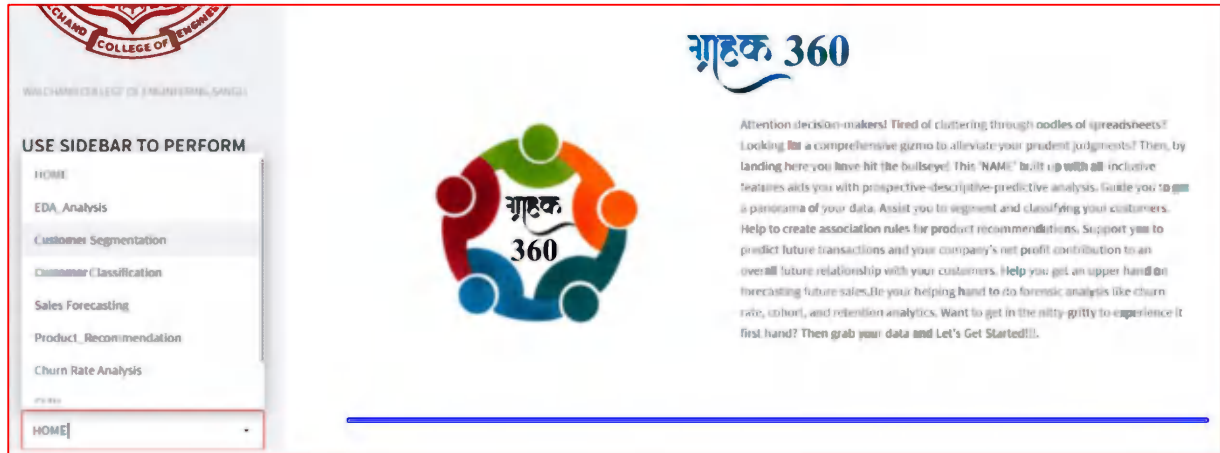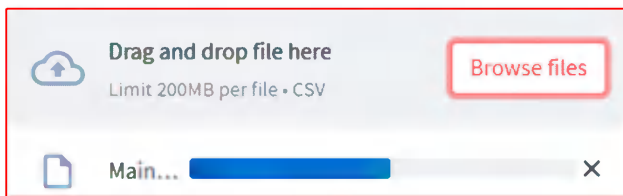# CUSTOMER SEGMENTATION

A GUIDE TO USER

3.1 Customer Segmentation

- Select the Customer Segmentation option from the dropdown in the sidebar menu. Wait for some time until the screen gets static.
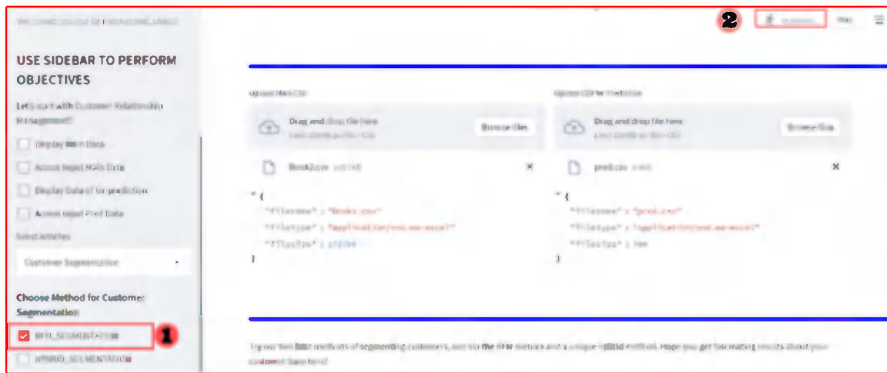

- Upload the *.csv file* of the dataset whose sales are to be forecasted.
- This can be done either by 'drag and drop' mode or by just browsing your directory.

- Further you can choose between RFM Segmentation and Hybrid Segmentation as per your requirements by clicking the checkbox in the sidebar menu.
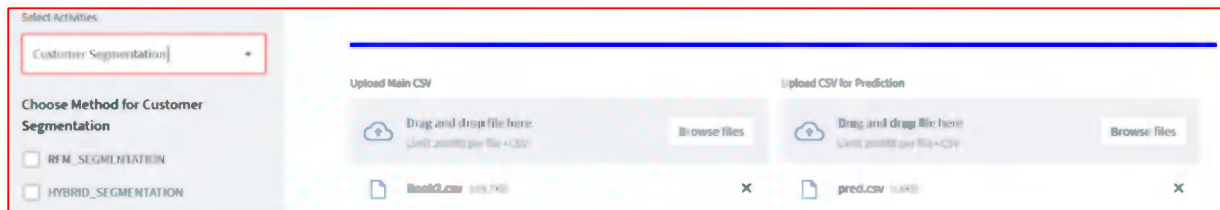
3.2 RFM Segmentation

- Click on the **RFM Segmentation** option in the sidebar menu.
- Wait for some time until the results are displayed.

- A tabulated data containing recency, frequency, monetary and their respective scores, cumulation of RF score and their respective segments are will appear on the interface.
- To fully view the RFM table, use the expander at top right corner.
- To download this table for further analysis or usage, click on the button '**Download data as CSV** '.
- Further you can choose between scatter plot, bar plot, tree map plot, access customer Information as per your requirements by clicking the checkbox in the sidebar menu.
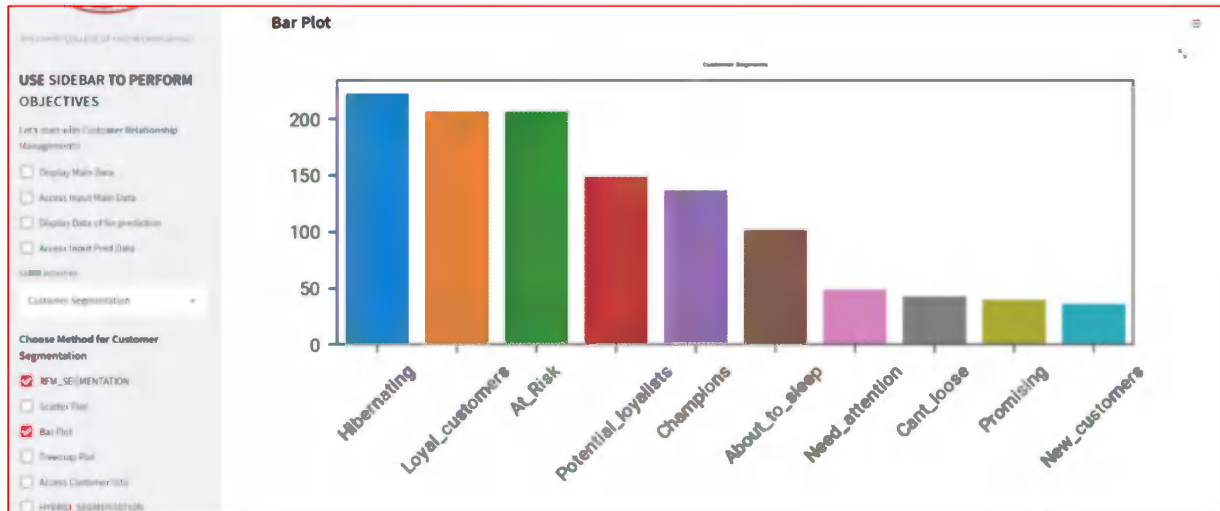
- Here by clicking on scatter plot you will get detail analysis.
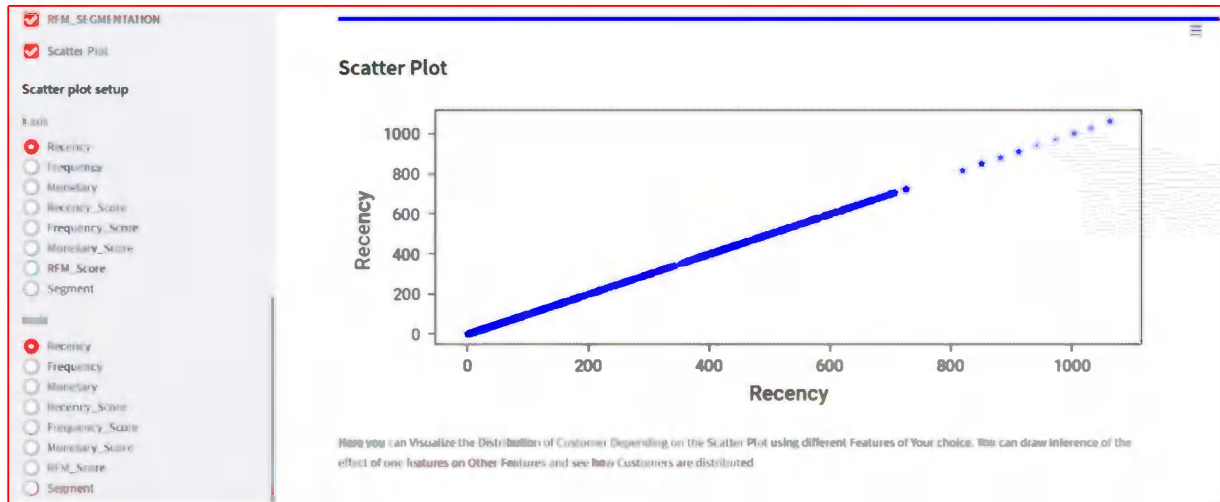
- Here you can visualize distribution of customers depending on scatter plot by choosing one of various attributes along x and y axis.
- Here by clicking on Bar plot you will get detail analysis.

- Here you can visualize distribution of customers in different segments from the bar plot generated.
- Also refer to the details given about each customer and the corresponding remedy to increase your business.

- Here by clicking on Treemap plot you will get detail analysis.

- Here you can visualize share of each of the customer segments through this tree map plot.
- Here by clicking on Access customer Information you will get detail analysis.

- To access the segment and RF Score of the particular customer, enter the Customer ID of the particular customer.

Access Customer Information

Enter a Customer ID

12354

SEGMENT : About_to_sleep

RFM SCORE : 31

- Here you can get the RF score and segment to which this customer belongs.

3.3 Hybrid Segmentation

- Click on the **Hybrid Segmentation** option in the sidebar menu. Wait for some time until the results are displayed.

- A tabulated data containing recency, frequency, monetary and their respective scores, cumulation of RF score and their respective segments are will appear on the interface which is similar to the table generated in RFM Segmentation.
- To fully view the RFM table, use the expander at top right corner.
- To download this table for further analysis or usage, click on the button '**Download data as CSV**'.
- Further you can choose between show dendogram, show elbow curve, check skewness, visualize transformed data, K-means segmentation dataframe, access customer Information, box plots of clusters, scatter plot of clusters and best possible number of cluster as per your requirements by clicking the checkbox in the sidebar menu.

- Here by clicking on show dendogram you will get a dendogram plot.
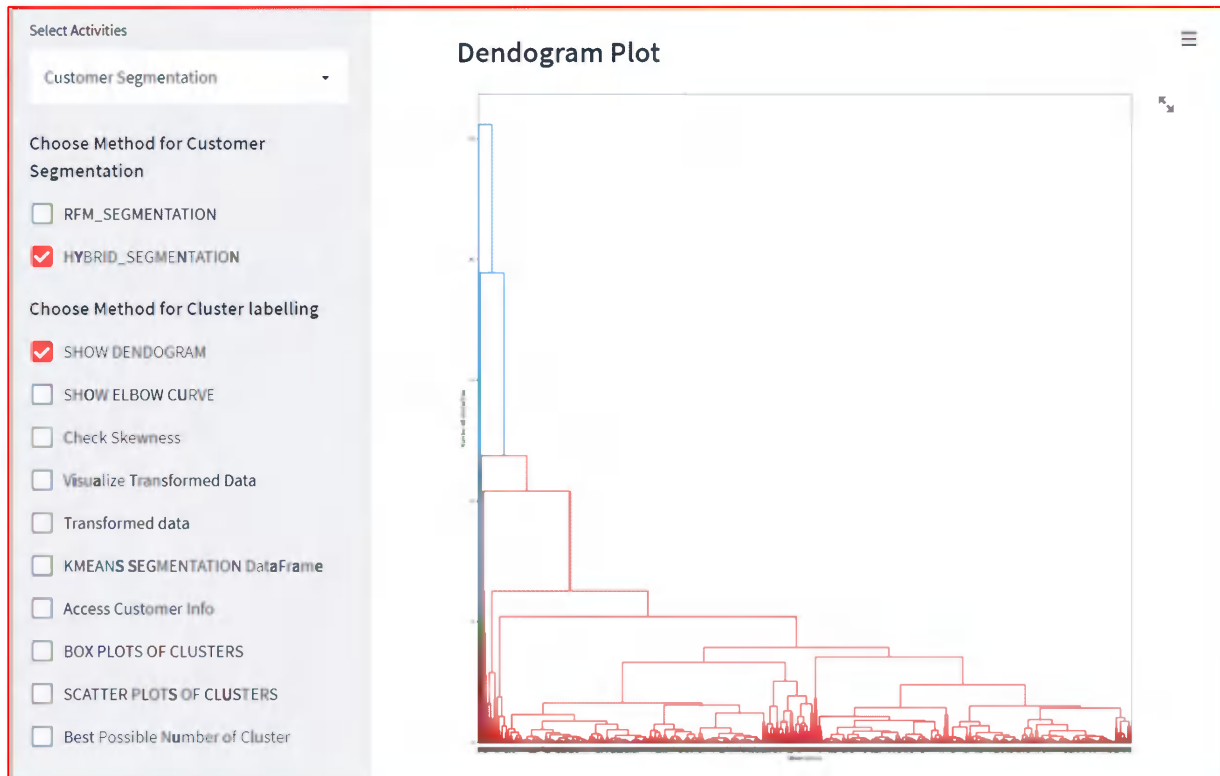
- Here you can visualize the dendogram a tree like structure to understand the relationship between all the data points of the input dataset. The different levels of dendogram here indicates clusters of data and how gradually it combines into a single cluster.
- Here by clicking on show elbow curve you will get an elbow curve plot.
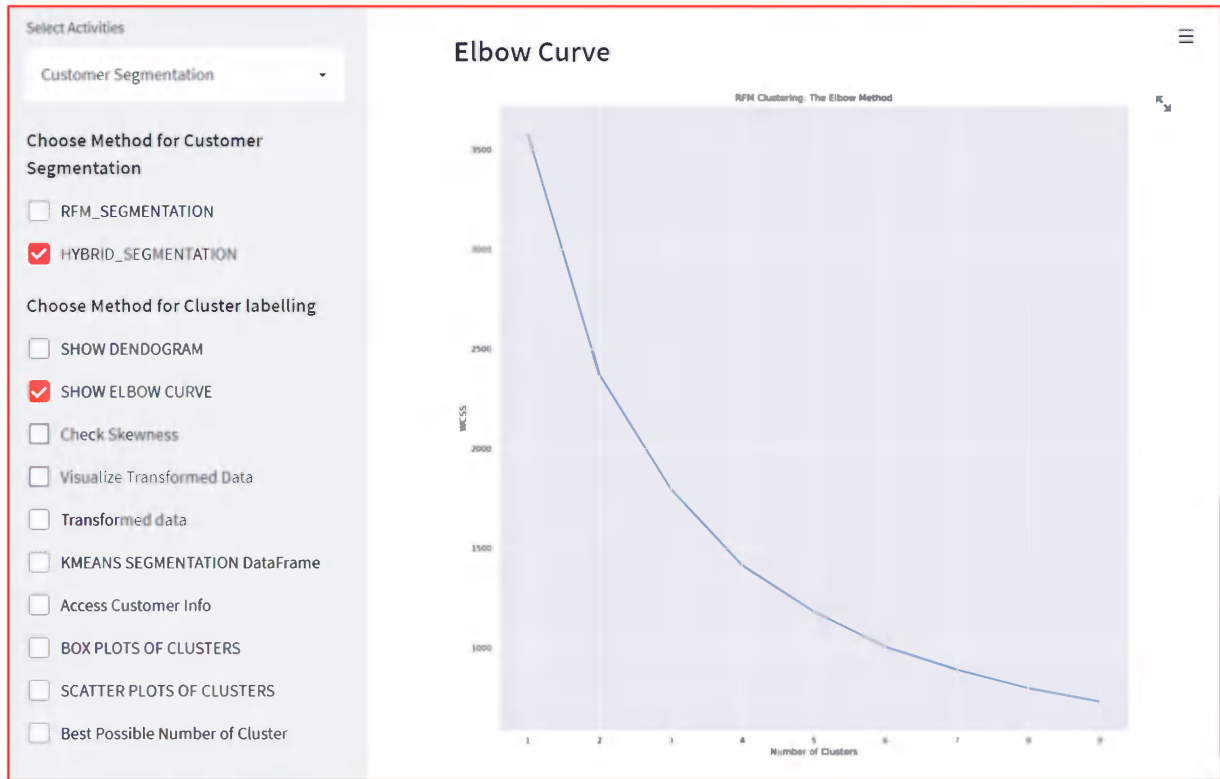
- In the above elbow graph, there are some sharp points that indicate minimum distortion. The total number of these sharp points will denote the number of clusters that can segment the provided data efficiently.
- Here by clicking on check skewness you will get detail analysis of skewness Information
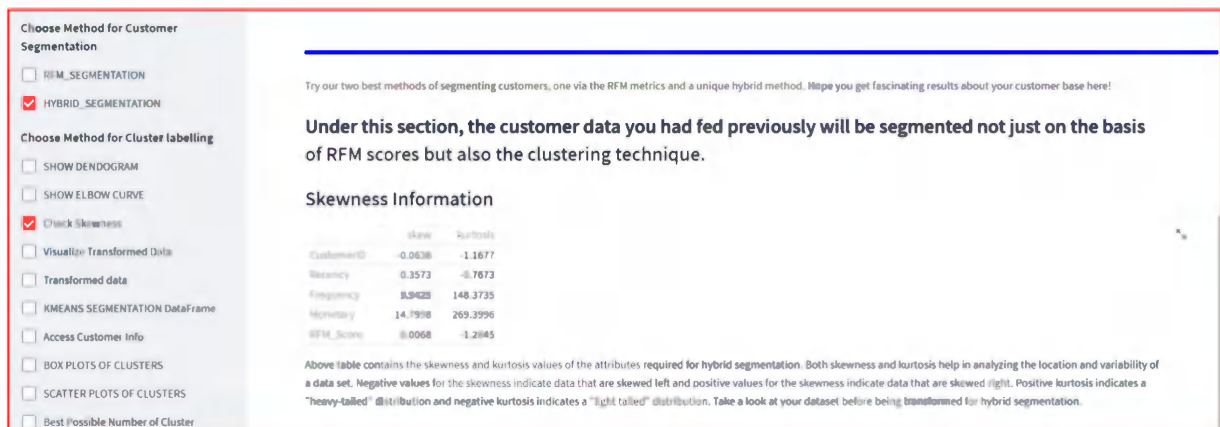
- Above table contains the skewness and kurtosis values of the attributes required for hybrid segmentation.
- Both skewness and kurtosis will help you in analyzing the location and variability of a data set.

- Negative values for the skewness here indicate data that are skewed left and positive values for the skewness indicate data that are skewed right.
- Positive kurtosis indicates a "heavy-tailed" distribution and negative kurtosis indicates a "light tailed" distribution.
- Also, take a look at your dataset before being transformed for hybrid segmentation.
- Here by clicking on visualize transformed data you will get corresponding plots.
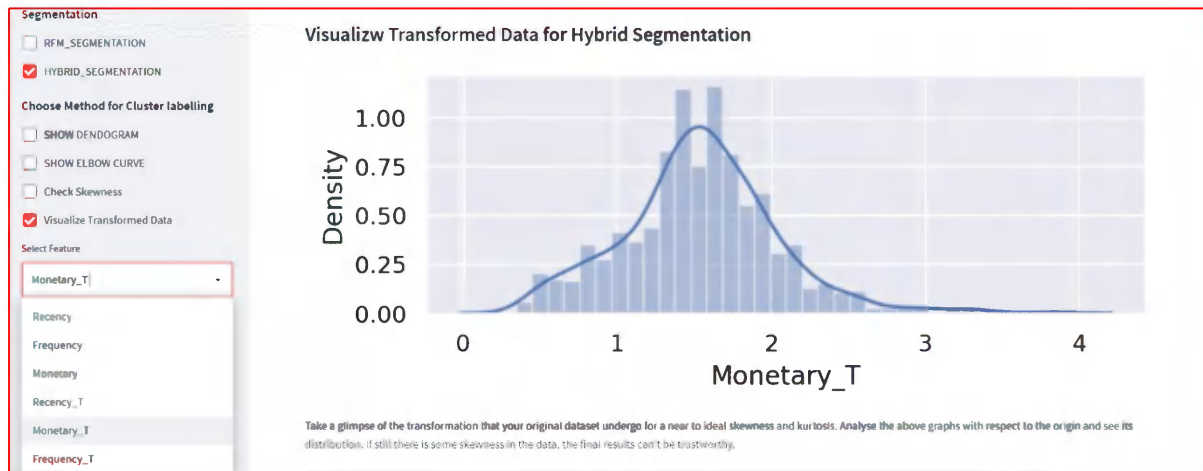
- Here is the visualization of the transformed data that your original dataset has undergone for a near to ideal skewness and kurtosis.
- You can select between the features recency, frequency, monetary, Recency_T, Monetary_T and Frequency_T to visualize the transformed data with respect to selected features.
- Here by clicking on transformed data you will get corresponding table.

- The table shows the transformed data which further would be used for RFM hybrid segmentation.

- Here by clicking on K-means segmentation dataframe you will get corresponding table.

- The data table represents the segmented data using K-means and RFM Hybrid score methods. The '0' value under cluster indicates customers with higher RFM or high valued customers while customers with '1' value indicate comparatively less valued customers.
- Here by clicking on access customer Information you will get information about cluster to which the customer belongs, recency, frequency and monetary value.

- To access the cluster, recency, frequency and monetary values of the particular customer, enter the Customer ID of the particular customer.

- Here by clicking on box plots of clusters you will get corresponding plots for visualizing the clusters.

- Here you can visualize different features like recency, frequency, monetary, Recency_T, Monetary_T and Frequency_T with respect to cluster through scatter plot by choosing the right features on Y axis and clusters on X axis.
- The above plots indicate whether or not the data is symmetrical, tightly grouped or skewed.
- Here by clicking on scattered plots of clusters you will get corresponding plots.
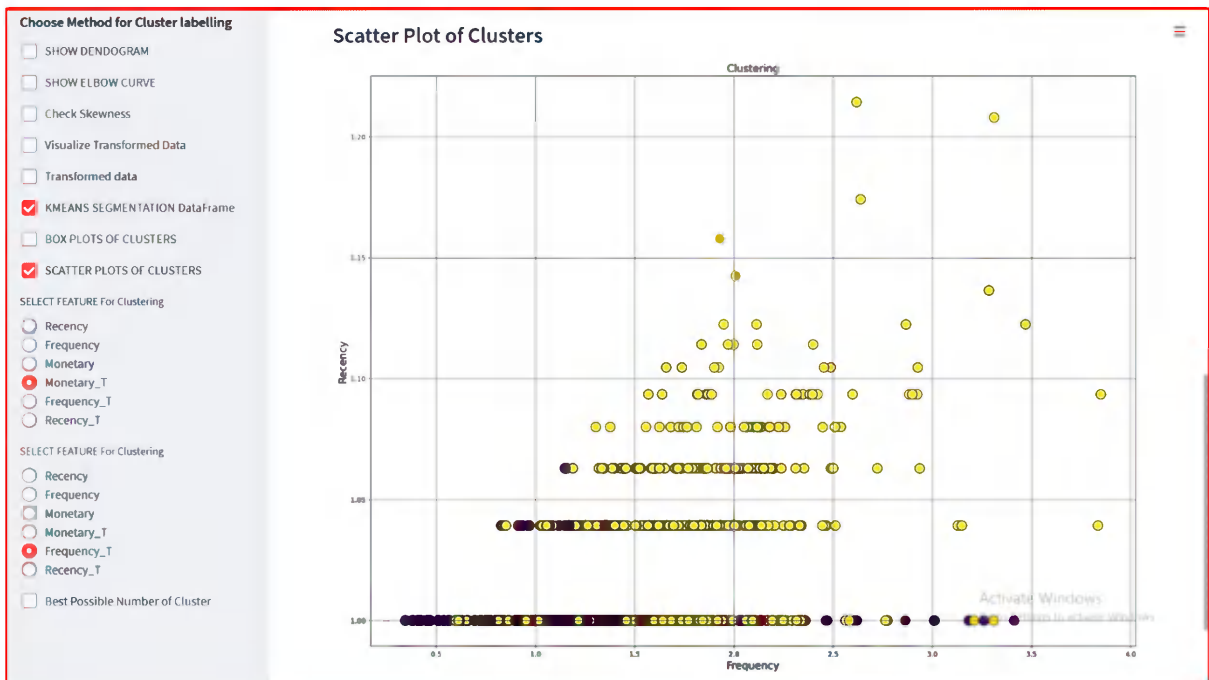
- Here you can visualize clustering based on scatter plot by choosing one of various features along x and y axis.
- The above plot indicates the clusters between Recency and Frequency or can compare monetary values with Recency and Frequency with the help of these scatter plots.

- Here by clicking on best possible number of cluster you will get corresponding results.

- Here you can observe the best possible number of clusters suitable for the clustering technique of your dataset. This is calculated by using one of Key Performance Indicators (KPI) that is silhouette score for each number of clusters.