| **Criteria** | **Ratings** | **Points** |
| --- | --- | --- |
| **EDA**  Check for comments after every step | EDA was done well, basic exploration like data preparation and summarization was checked. Univariate and Bivariate analysis was done and a lot of graphs were visualized. Good work here. | 15/15 |
| **Kmeans** | K means clustering was done correctly, scree plot was used to find out the optimal number of clusters, and clusters were visualized well-using box plots. | 10/10 |
| **Hierarchical Clustering** | Hierarchical clustering was done correctly and clusters were visualized well by a dendrogram. Also, boxplots were plotted to analyze and visualize the clusters. | 15/15 |
| **Silhouette Score** | Silhouette score was calculated correctly for K means clustering and for hierarchical clustering as well. Good work here. | 5/5 |
| **Clusters Comparison** | Clusters comparison was tried by finding the average of variables for individual clusters both for k means and hierarchal clustering but no comments were shared about it. You could have shared the comments as below: Cluster 0 of Kmeans appears similar to Cluster 2 of Hierarchical Cluster 1 of Kmeans appears similar to Cluster 3 of Hierarchical Cluster 2 of Kmeans appears similar to Cluster 1 of Hierarchical | 3/5 |
| **Analysis the Clusters formed** | All three questions were attempted and the no of segments are correct but , a lot of scopes are there to improve the other two questions as well. You could have done it like below. 2. How are these segments different from each other? (Cluster profiles ) Answer: Label 0 can be considered low valued customers This group comprises about 34% of the customers ( 224/660 ) These customers have a mean "Avg\_Credit\_Limit " around 12200 and have 2 credit card on an average and the maximum number of a credit card as 4. They are the ones who make the most number of customer care calls to the bank as the average number of calls made is 7 Label 1 can be considered medium valued customers This group forms the majority of the customers having about 58% customers in total ( 386/660 ) These customers have "Avg\_Credit\_Limit " ranging from 5000.0 to 100000.0 These are the ones that make the maximum number of visits to the bank as the average number of visits to a bank is 3. They are the ones who are least active online as the maximum visit is just 3 Label 2 can be considered high-value customers These are the least in number i.e. only 50 customers comprising 7.5% of total customers (50/660). These customers have a minimum "Avg\_Credit\_Limit " of 84000 and have at least 5 Credit cards. These are the ones which make the minimum number of visits to the bank as the maximum visit to the bank is 1 amongst all 50 customers. They are mostly using online services as the average visit online is 11. 3. What are your recommendations to the bank on how to better market to and service these customers? (Business Recommendations ) Customers in the medium group ( having Label 1 ) are not engaged much in online activities, one of the exercises can be to engage them online. If they join online, promotions and offers can be communicated to them with much ease. Customers in a low group ( label 0 ) can further be binned to check if any extreme groups are having a high average credit limit. These customers can be given more offers and new credit cards so that we can have them in the medium group (label 1 ) over some time. Similarly, we can perform this for medium customers (label 1) and try to have them in the high group (label 2) over some time. Customers in a low group ( label 0 ) make the most number of customer care calls, these customers can be told about different offers to try and move them to the medium group over some time. | 8/10 |
|  | Points | 56/60 |