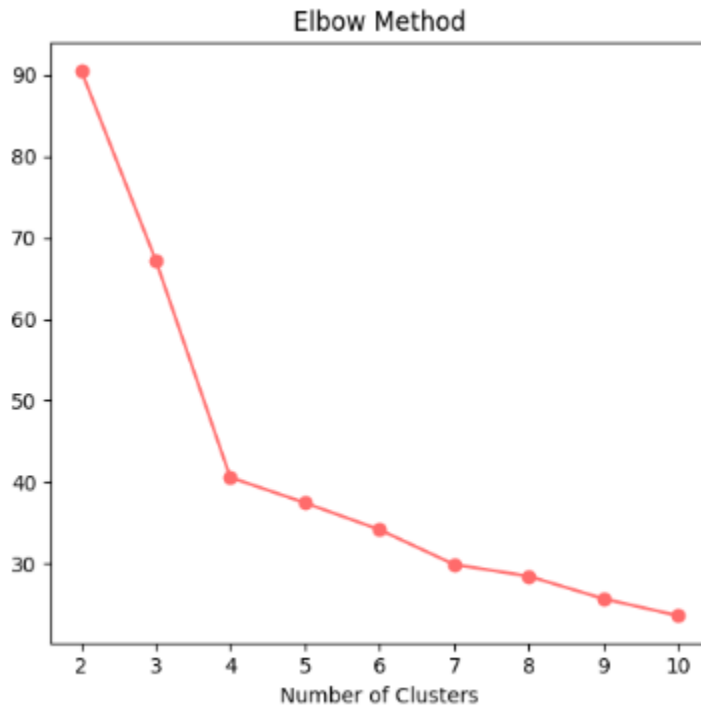
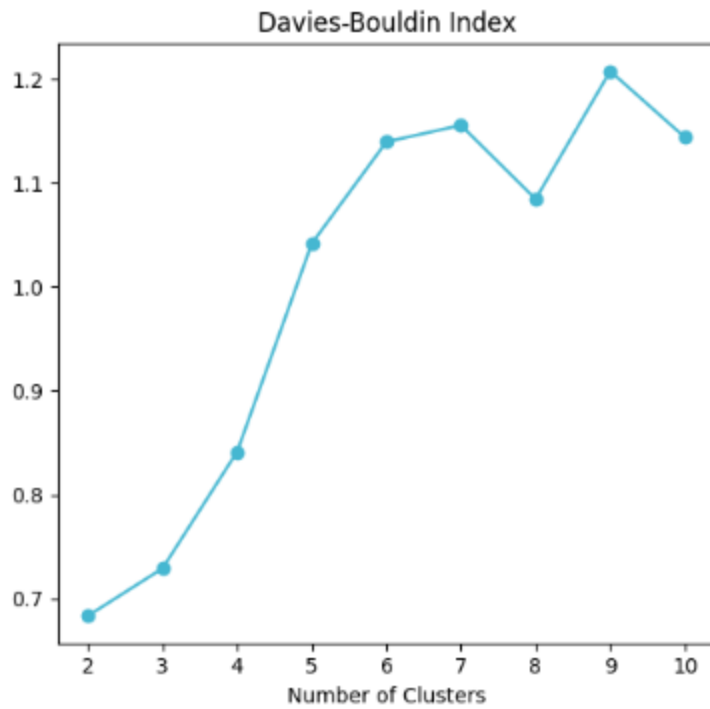


Clustering Report

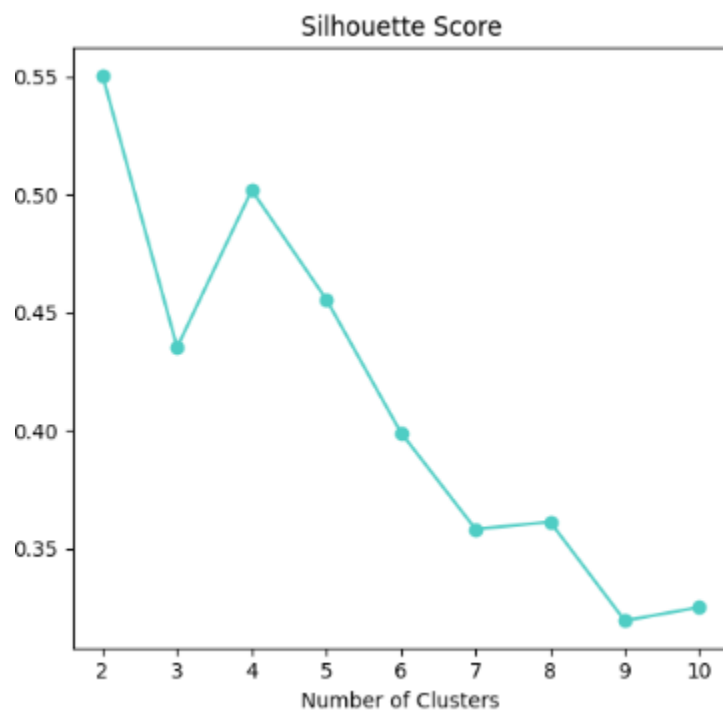
1. Number of Clusters Formed: After evaluating multiple clustering algorithms and metrics, the optimal number of clusters was determined to be **4**, based on the Elbow Method and metric evaluations.



2. Davies-Bouldin Index: The final **Davies-Bouldin Index** was calculated as **0.84**, indicating a well-separated clustering structure with low intra-cluster distances relative to inter-cluster distances.



3. Silhouette Score: The final **Silhouette Score** was calculated as **0.50**, reflecting moderate cluster compactness and separation.



4. Key Observations:

- The **Elbow Method** plot suggested diminishing returns in reducing within-cluster variance beyond 4 clusters.
- The **Silhouette Score** was highest for 2 clusters but dropped with an increasing number of clusters, stabilizing at 4.
- The **DB Index** consistently increased after 4 clusters, reinforcing the choice of 4 clusters as optimal.

Im sorry because of time constraints was not able to document the charts for clustering