Clustering Results Report

1. Number of Clusters Formed:

Optimal Number of Clusters: Based on the Davies-Bouldin Index (DB Index), the best number of clusters is 9, as it has the lowest DB Index value of 0.7326.

2. Davies-Bouldin Index (DB Index):

The DB Index is a measure of clustering performance that evaluates how compact and well-separated the clusters are.
A lower DB Index indicates better clustering, as it suggests the clusters are more compact and better separated.
Optimal DB Index: 0.7326 at 9 clusters.

3. Observations:

Cluster Characteristics: At 9 clusters, the DB Index is minimized, suggesting this number offers the best balance between compactness and separation of the clusters.
Trend in DB Index: As the number of clusters increases, the DB Index gradually decreases, indicating that smaller cluster sizes improve compactness and separation.
Visualization: The final clustering results (visualized after PCA) clearly show how the data is grouped into distinct clusters.