## **Clustering Results Report:**

- 1. **Number of Clusters Formed:** Based on the evaluation of different metrics, the best number of clusters (k) was:
  - Best k based on Silhouette Score, Davies-Bouldin Index, and Dunn Index: k=2
  - Best k based on **Inertia**: k=10
  - Best k based on **Calinski-Harabasz Index**: k=3
- 2. **DB Index Value:** The best DB Index was for k=2, which indicates that two clusters gave the best separation between groups.
- 3. Other Relevant Clustering Metrics:
  - **Inertia:** Best for k=10, but this may lead to overfitting.
  - Calinski-Harabasz Index: Best for k=3, indicating good balance between within-cluster and between-cluster variance.
  - **Dunn Index:** Best for k=2, showing the best separation between clusters.

## **Conclusion:**

The best k for most metrics is 2. k=2 is the most recommended based on the overall results.