

Task 5: Comparison and Analysis

1. Compare Clustering Results:

- Analyze cluster sizes, shapes, and separation in original vs. PCA data.

2. Discuss Similarities or Differences:

- Highlight how PCA affected cluster compactness and separation.

3. Reflect on Dimensionality Reduction Impact:

- Discuss trade-offs: loss of information vs. improved clustering.

4. Analyze Trade-offs:

- Weigh the benefits of reduced dimensionality against potential loss of interpretability.

Task 6: Conclusion and Insights

1. Summarize Key Findings:

- Highlight the effectiveness of PCA in improving clustering outcomes.

2. Discuss Practical Implications:

- Discuss scenarios where PCA and clustering techniques are beneficial.

3. Provide Recommendations:

- Recommend using PCA when datasets are high-dimensional and feature redundancy is suspected.