

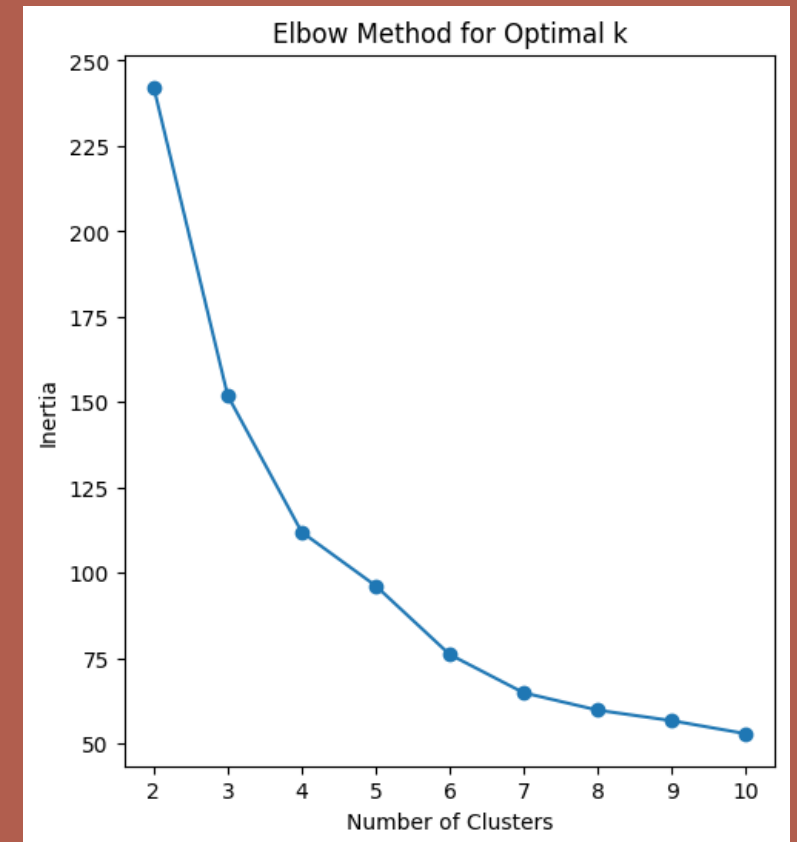
Data Science Assignment

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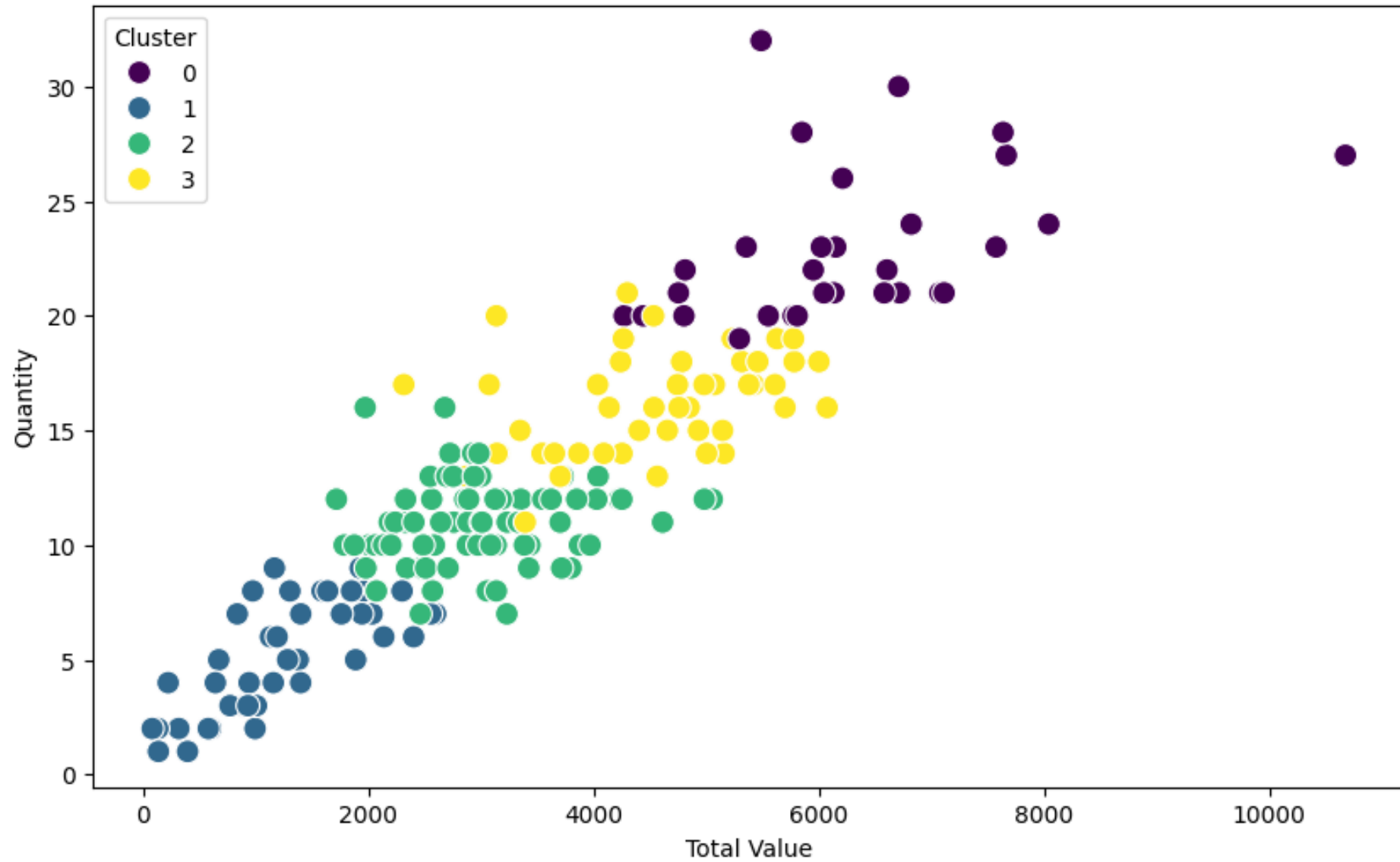


Elbow Method for Optimal k

The image displays the Elbow Method plot, which is used to determine the optimal number of clusters (k) for clustering algorithms like K-Means. The "elbow point" is the value of k where the inertia starts to decrease at a slower rate, forming an angle similar to an elbow. In this plot, the elbow point appears to be at **k=4**, as the rate of inertia reduction significantly slows down after this point.



Customer Segmentation Clusters



```
[18]: # Output results
      print(f'Number of clusters formed: {optimal_clusters}')
      print(f'Davies-Bouldin Index: {db_index}')
      print(f'Silhouette Score: {silhouette_avg}')
```

```
Number of clusters formed: 4
Davies-Bouldin Index: 0.8650620583623065
Silhouette Score: 0.37356460556541055
```

Thank You

