Bangabandhu Sheikh Mujibur Rahman Digital University, Bangladesh.

Faculty of Cyber Physical Systems
Department of Internet of Things and Robotics Engineering
B.Sc. in Internet of Things and Robotics Engineering

Course Title: Data Science
Course Code: IOT 4313
Assignment On: Clustering

Submitted To:
Nurjahan Nipa
Lecturer,
Dept. Cyber-Physical Systems
.

Submitted By:

MD: Arafat Shoikot
ID:1901022
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Part A: K-means Clustering

Method: 1. Calculating the Ideal K:

The Outline Score and Elbow Strategy approaches were linked to get the ideal number of clusters (K). K was studied between the ages of one and fifteen.

2. Data Preparation:

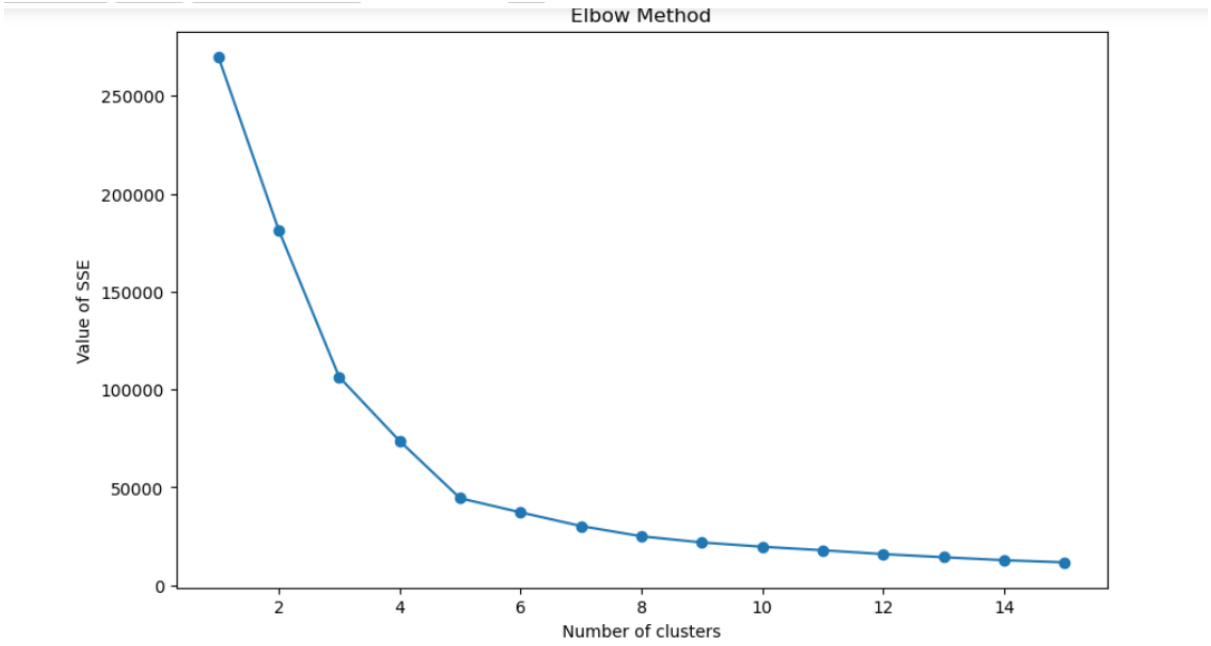
Age, annual wage, and investing score were retrieved as crucial points.

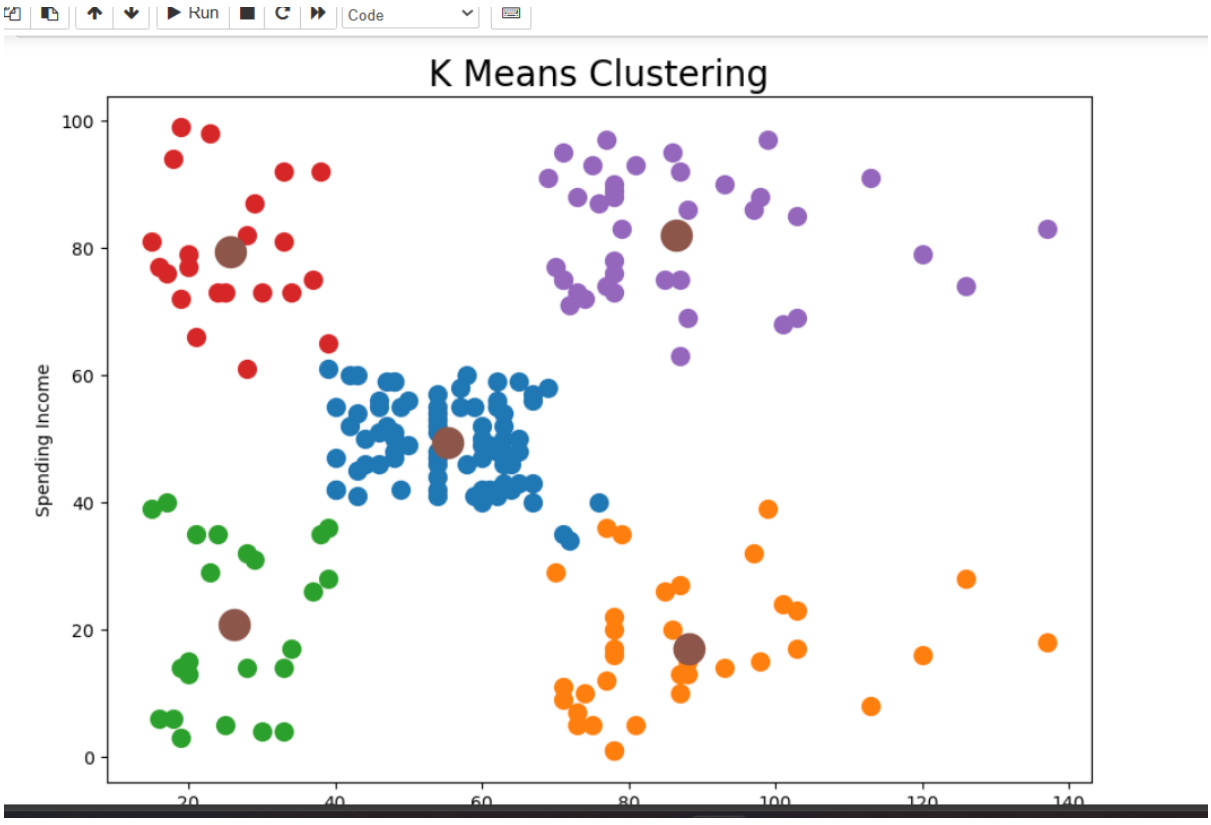
3. Clustering with K-means:

The K-means clustering calculation was used to separate clients into K clusters.

4. Results:

Identified customer pieces and developed detailed client profiles for each cluster based on investing behavior.





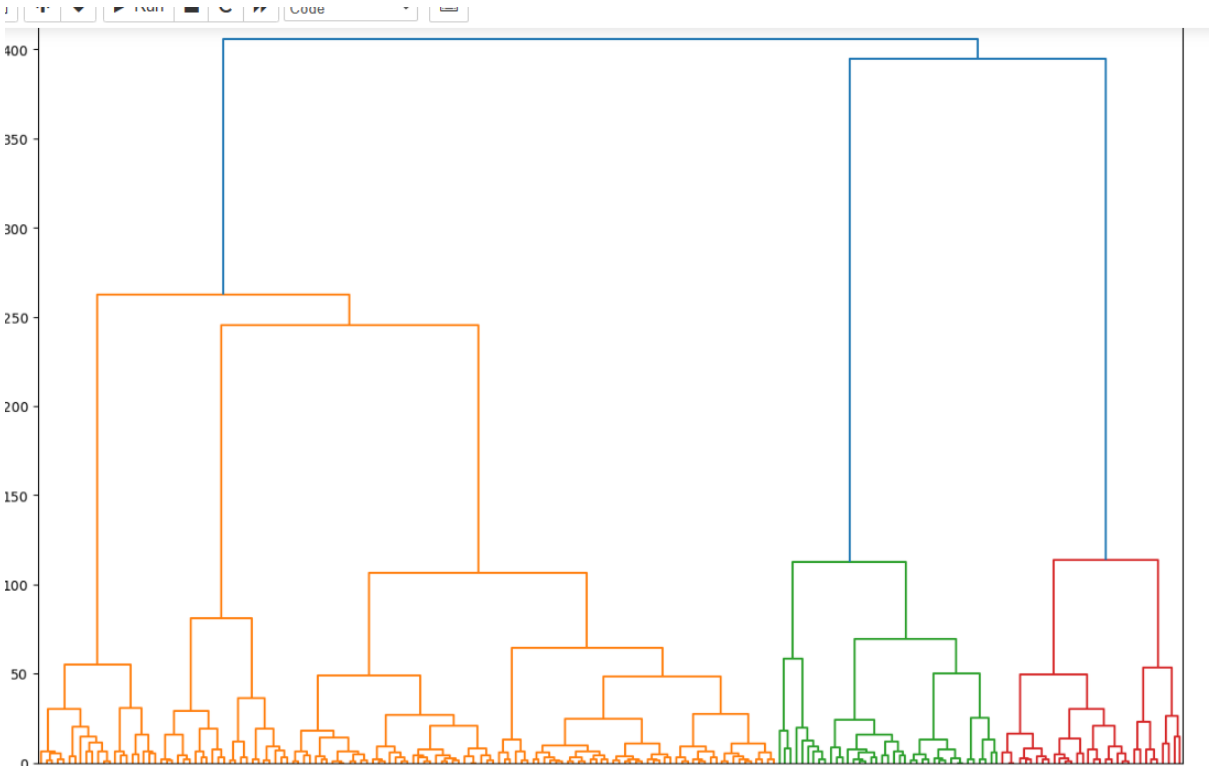
Part B: Hierarchical Clustering

1. Dendrogram Analysis: Developed a dendrogram to illustrate the various levels of links between information foci and find the ideal number of groupings.

2. Data Preprocessing: The same highlights were used for Age, Yearly Salary, and Investing Score.

3. Agglomerative Various Levels Clustering: Actualized agglomerative progressive clustering based on the ideal number of clusters from the dendrogram.

4.Begins: Demonstrated the basic structure of client parts by viewing progressing clusters.

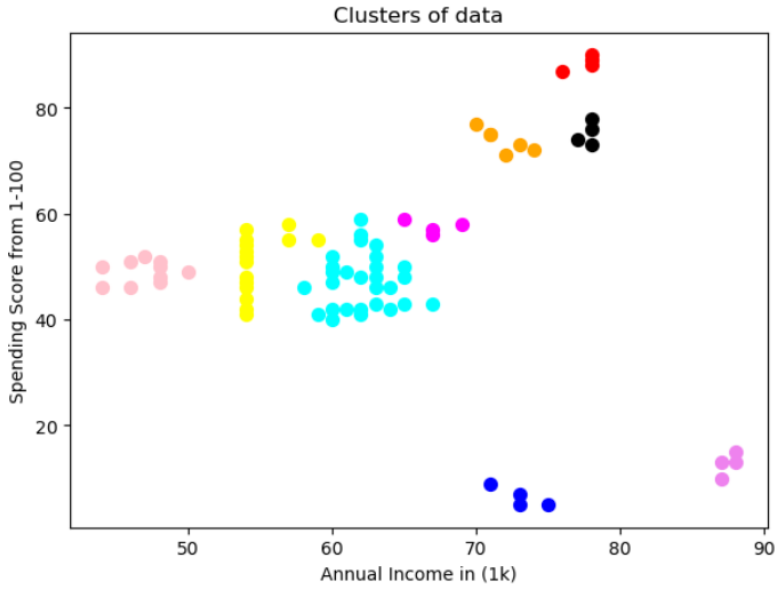


Part C: Density-based Clustering (DBSCAN)

DBSCAN Clustering:

Utilizing density-based clustering, this connected DBSCAN computation focuses on identifying self-assertive formed clusters.

```
plt.ylabel('Spending Score from 1-100')
plt.title('Clusters of data')
plt.show()
```



GitHub Link: https://github.com/Arafat-Shoikot/cluster.git