



K-MEANS ALGORITHM

Sevilay Malkoç
Fehmi Şener
Melih Ürkmez
Taha Pek

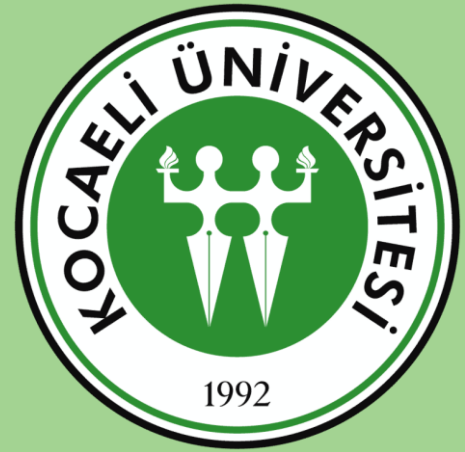


Table of Content

01

K-Means Algorithm

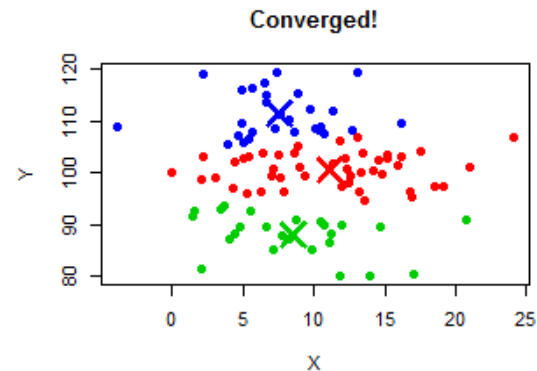
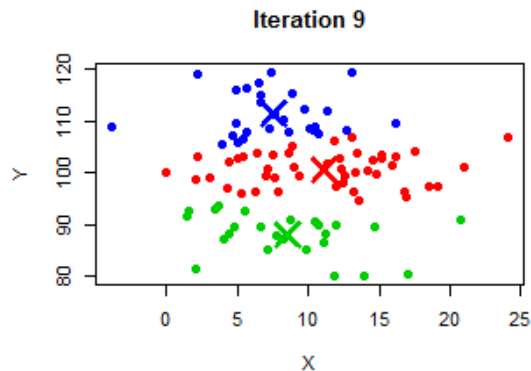
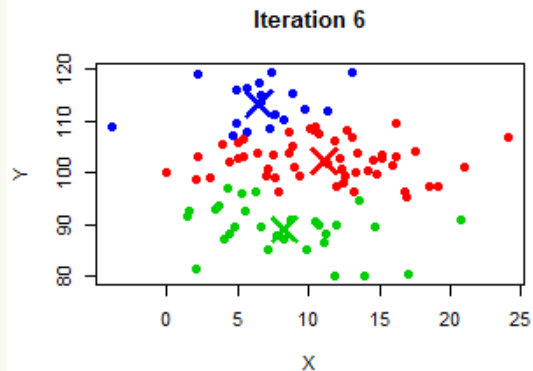
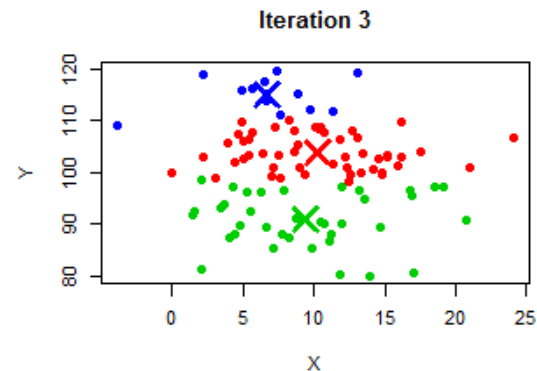
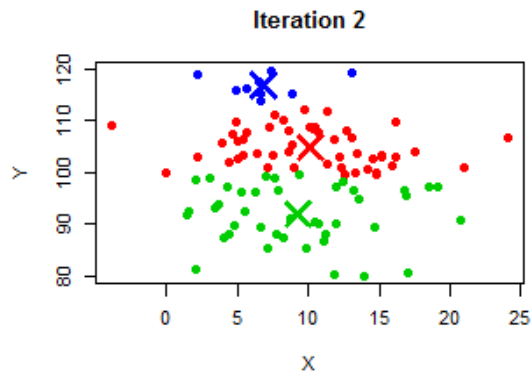
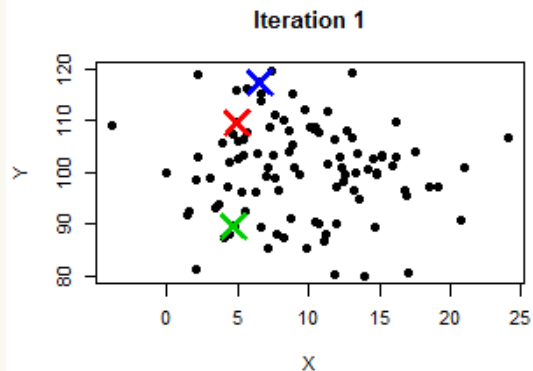
02

Pseudo Code

03

How Did We Use It?

K-Means Algorithm



K-MEANS



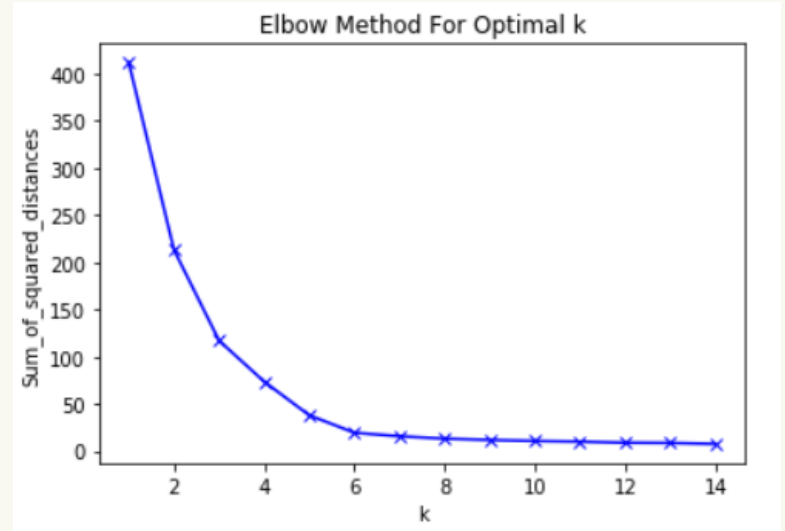
1.1

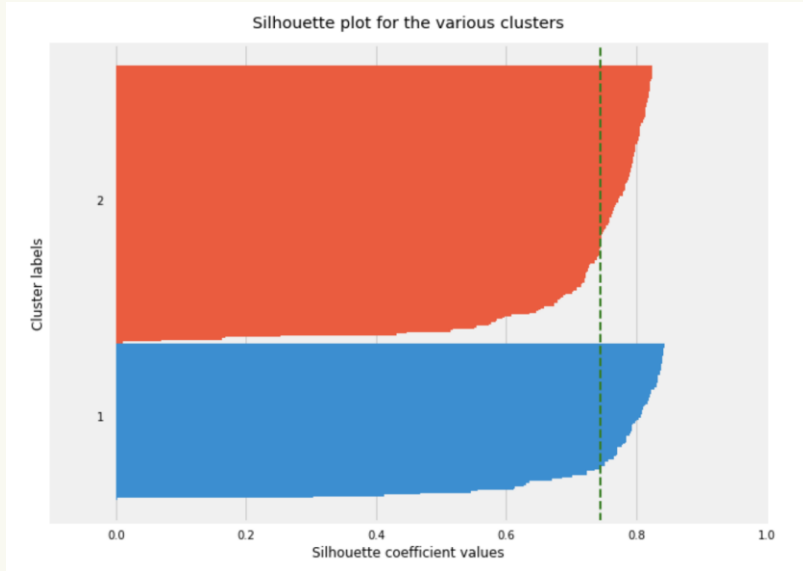
Decide Cluster Counts

Helps to find the optimum
number of clusters.

Elbow Curve

The elbow method runs k-means clustering on the dataset for a range of k values (for example, 1 to 10).





Silhouette analysis

The silhouette coefficient is a measure of how similar a data point is within-cluster (fitness) compared to other clusterings (disjunction).

PSEUDO CODE

Step 1: Choose the number of clusters(K) and obtain the data points
Step 2: Place the centroids c_1, c_2, \dots, c_k randomly
Step 3: Repeat steps 4 and 5 until convergence or until the end of a fixed number of iterations
Step 4: for each data point x_i :

- find the nearest centroid($c_1, c_2 \dots c_k$)
- assign the point to that cluster

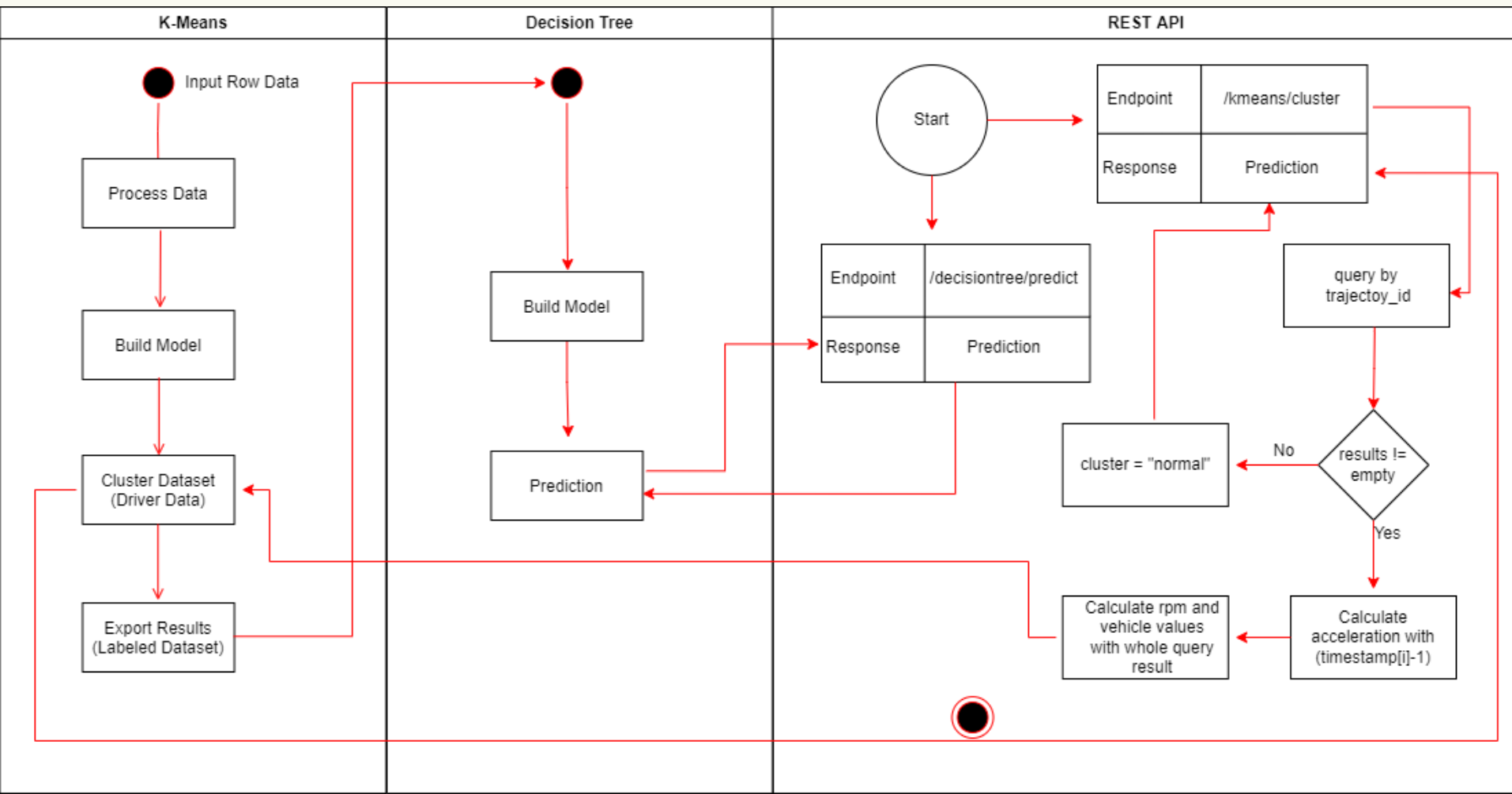
Step 5: for each cluster $j = 1..k$

- new centroid = mean of all points assigned to that cluster

Step 6: Use labeled data for Decision Tree (from K-Means)
Step 7: Keep the best feature of the input attributes at the root portion of the tree.
Step 8: Then make splitting of the training dataset into subsections.
Step 9: Now repeat steps 7,8 on each subset till the leaf portion in every branch of the tree is found.
Step 10: Predict cluster of driver data

It is an informal and contrived way of writing programs in which you represent the sequence of actions and instructions (aka algorithms) in a form that humans can easily understand.*

SYSTEM ARCHITECTURE



Thanks!



CREDITS: This presentation template was created by **Slidesgo**, including icons by **Flaticon**, and infographics & images by **Freepik**
