Implementing K Means Clustering

- **Import numpy and pandas libraries**

- **Read malls dataset**

- **Print last 5 rows of the data set**

- **Describe the dataset**

- **Check number of rows and columns of the dataset**

- **Check if any null values in the dataset**

- **Print the data types of the features.**

- **Convert all the datatypes to numeric form**

- **Drop customer_id**

- **perform standardization of features**

scaler = StandardScaler()

scaled_data_mm = scaler.fit_transform(mm)

- **Plot Elbow curve**
  inertia = []
  for i in range(1, 11):
      km = KMeans(n_clusters=i, random_state=42)
      km.fit(scaled_data_mm)
      inertia.append(km.inertia_)

```
plt.plot(range(1, 11), inertia, marker='o')
plt.title('Elbow Method')
plt.xlabel('Number of Clusters')
plt.ylabel('Inertia')
plt.grid()
```

- **Import kmeans from sklearn**

```
from sklearn.cluster import KMeans
```

- **Implement clustering on the dataset**

```
kmeans_malls=KMeans(n_clusters=4)
```

-
```
kmeans_malls.fit(malls)
```

- **Printing cluster centers**

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```
kmeans_malls.cluster_centers_
```

- **Display the clusters**

```
plt.scatter(mm['Age'], mm['Spending Score (1-100)'],
        c=mm['Cluster'], cmap='viridis')

plt.xlabel('Age')

plt.ylabel('Spending Score (1-100)')
```

```python
plt.title('Customer Segments')

plt.grid()
```