

EXPERIMENT – 10

K-MEANS CLUSTERING

Aim:

To perform model clustering using K-means Clustering technique

Procedure:

- Upload the given dataset
- Import all the necessities
- Read the dataset as DataFrame
- Using seaborn visualize the trends
- Using sklearn train the model for predicting

Program:

```
[ ] 0s ① from google.colab import files
uploaded=files.upload()
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
%matplotlib inline
file=next(iter(uploaded))
df=pd.read_csv(file)
df.info

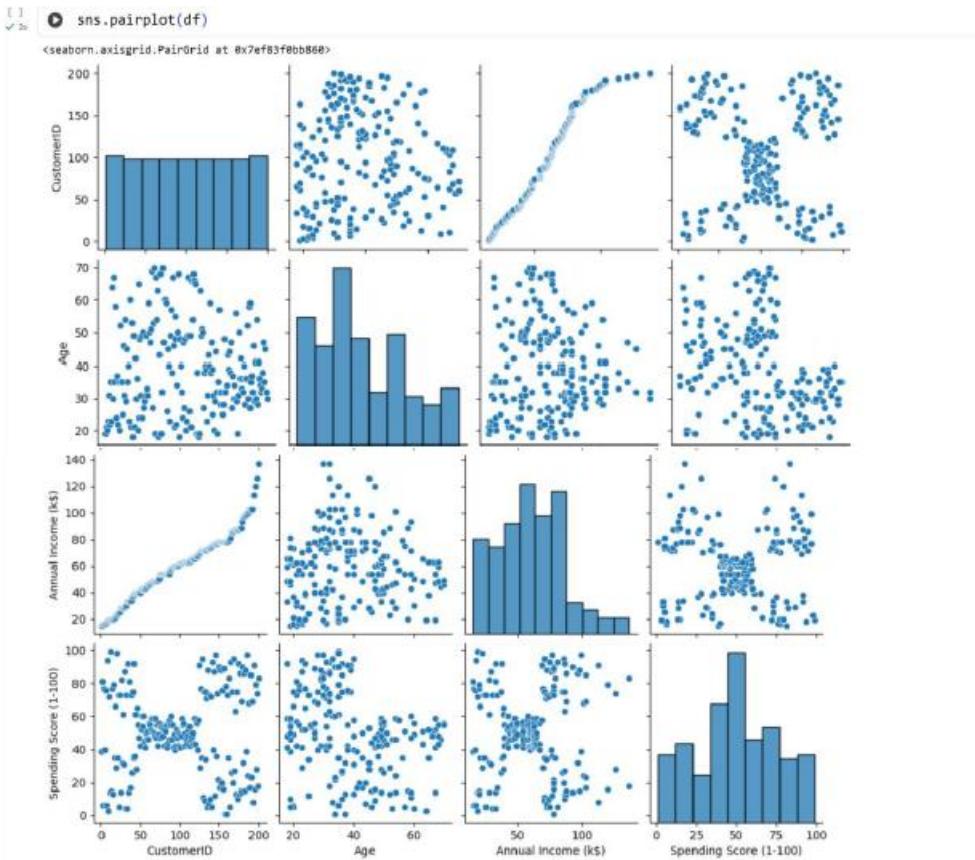
Choose Files No file chosen Upload widget is only available when the cell has been executed in the current browser session. Please rerun this cell to enable.
Saving Mall_Customers - Mall_Customers.csv to Mall_Customers - Mall_Customers.csv
pandas.core.frame.DataFrame.info
def info(verbose: bool | None=None, buf: WriteBuffer[str] | None=None, max_cols: int | None=None,
memory_usage: bool | str | None=None, show_counts: bool | None=None) -> None
Print a concise summary of a DataFrame.

This method prints information about a DataFrame including
the index dtype and columns, non-null values and memory usage.

Parameters
```

```
[ ] 0s ② df.head()

CustomerID  Gender  Age  Annual Income (k$)  Spending Score (1-100)
0            1   Male    19                  15                 39
1            2   Male    21                  15                 81
2            3  Female   20                  16                  6
3            4  Female   23                  16                 77
4            5  Female   31                  17                 40
```



```

[1]  ✓  features=df.iloc[:,[3,4]].values
      from sklearn.cluster import KMeans
      model=KMeans(n_clusters=5)
      model.fit(features)
      KMeans(n_clusters=5)

```

```

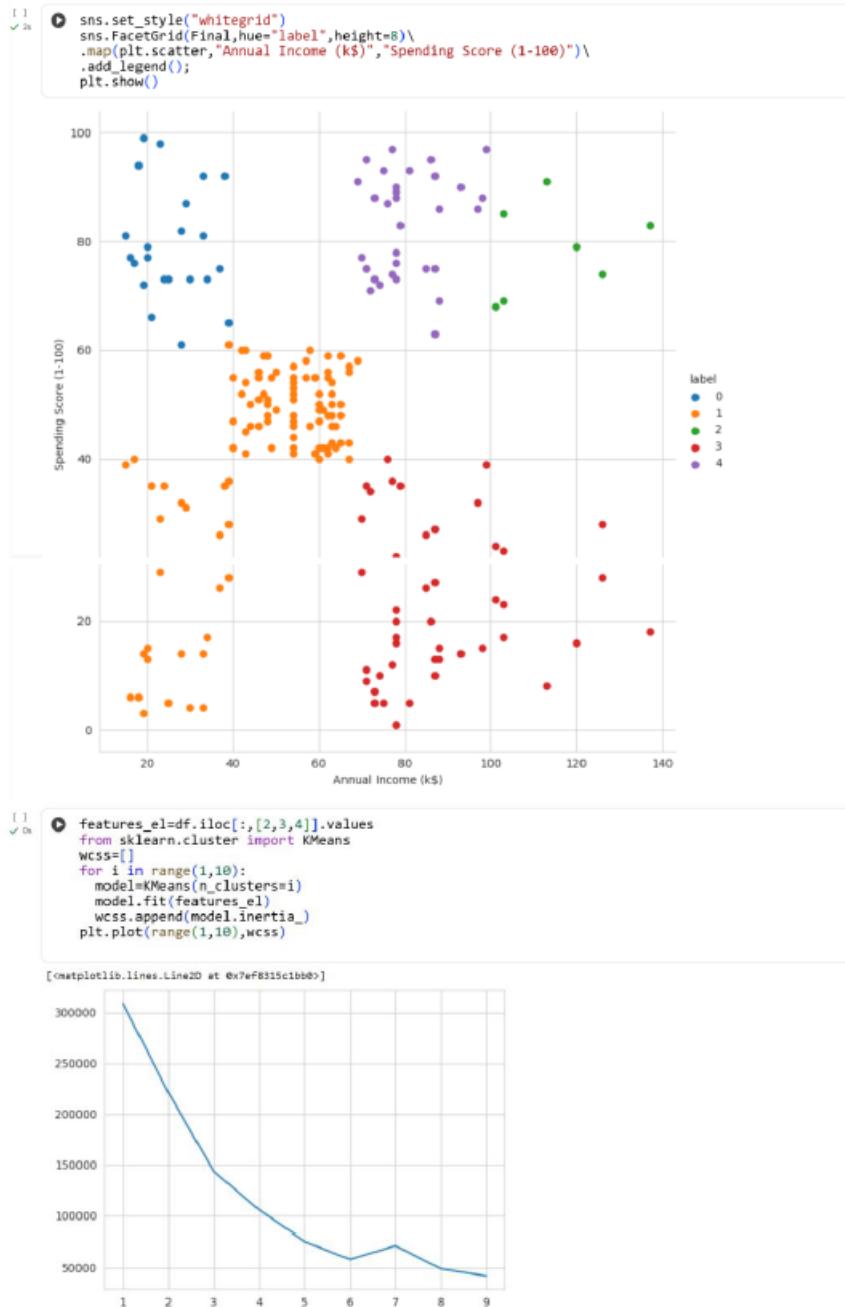
[1]  ✓  Final=df.iloc[:,[3,4]]
      Final['label']=model.predict(features)
      Final.head()

```

/tmp/ipython-input-479183701.py:2: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy

	Annual Income (k\$)	Spending Score (1-100)	label
0	15	39	1
1	15	81	0
2	16	6	1
3	16	77	0
4	17	40	1



Result:

Thus the python program to make prediction model using K-means Clustering is executed and verified successfully