# EXPERIMENT NO: 10

**K Means Clustering**

**Aim:**

To Write a Python program to understand and perform the K-Means clustering algorithm on the given dataset.

**Algorithm:**

1. Load essential libraries like NumPy, Pandas, Matplotlib, Seaborn, and K Means from sklearn.
2. Read the Mall\_Customers.csv file into a Data Frame using pd.readcsv().
3. Use .info() and .head() to understand the structure and preview the dataset.
4. Apply sns.pairplot() to explore pairwise relationships between features.
5. Select relevant features and fit KMeans with a specified number of clusters
6. Add cluster labels to the DataFrame and visualize clusters using scatter plots.
7. Use the elbow method by plotting within-cluster sum of squares for cluster counts from 1 to 10.

**Program**:

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AI-generated content may be incorrect.**Result:**

Thus, the Python program is executed successfully for detecting customer clusters from the given dataset using K-Means clustering.