Exploratory Data Visualization using Matplotlib and Seaborn

Dataset:

Use the built-in **tips** dataset from Seaborn or load another dataset like **Iris** or a **custom CSV file** with numerical and categorical variables.

Instructions:

Part A: Visualizations using Matplotlib

1. **Scatter Plot**

   o   Plot total_bill vs tip with appropriate axis labels and title.

   o   Add color to points based on sex.

2. **Subplots**

   o   Create **two subplots** side by side:

   ▪   First plot: Line plot of sine wave.

   ▪   Second plot: Line plot of cosine wave.

   ▪   Use numpy to generate x-values from 0 to 2π.

3. **Bar Plot**

   o   Plot average total_bill for each day using a bar plot.

4. **Histogram**

   o   Create a histogram of tip values with bins=10 and appropriate labels.

5. **Boxplot**

   o   Create a boxplot of total_bill grouped by day.

6. **Pie Chart**

   o   Show pie chart of smoker vs non-smoker counts.

Part B: Visualizations using Seaborn

1. **Distplot**

   o   Create a distribution plot of total_bill.

2. **Jointplot**

  o Plot a joint distribution of total_bill and tip.

3. **Pairplot**

  o Create a pairplot of the numerical columns in the dataset colored by sex.

4. **Boxplot**

  o Create a boxplot showing total_bill for each day and further grouped by sex.

5. **Violinplot**

  o Create a violin plot comparing tip across different times (Lunch, Dinner).

6. **Countplot**

  o Create a countplot showing the number of observations for each day.

7. **Bar Plot**

  o Use sns.barplot() to show average tip for each day.