Lab Exercise: Analyze and visualize a car dataset to understand the distribution and relationships among different variables using histograms, scatterplots, and bar charts.

Dataset Description: You are provided with a **car dataset csv file**, which contains 250 observations and the following variables:

1. **Car ID** – Unique identifier for each car (Numeric).
2. **Brand** – The manufacturer of the car (Categorical).
3. **Model** – The model type of the car (Categorical).
4. **Year** – The manufacturing year of the car (Numeric).
5. **Price** – The price of the car in USD (Numeric).
6. **Mileage** – Fuel efficiency in miles per gallon (Numeric).
7. **Fuel Type** – The type of fuel used (Categorical: "Diesel", "Electric", "Hybrid", etc.).
8. **Horsepower** – The horsepower of the car (Numeric).

Tasks:

1. **Histogram Analysis:**
    a. Plot a histogram of the **Price** variable to analyze the price distribution of cars.
    b. Use appropriate bin sizes and axis labels.
    c. Identify the most common price range.
2. **Scatterplot Exploration:**
    a. Create a scatterplot of **Horsepower** vs. **Mileage** to examine if there is a relationship between power and fuel efficiency.
    b. Differentiate the fuel types using colors in the scatterplot.
    c. Add axis labels and a trendline for better interpretation.
3. **Bar Chart Visualization:**
    a. Generate a bar chart showing the number of cars available for each **Brand**.
    b. Identify which brand has the highest number of cars.
    c. Ensure the chart includes appropriate titles and axis labels.
4. **Grouped Bar Chart:**
    a. Create a grouped bar chart comparing the number of cars for each **Fuel Type** within different **Manufacturing Years**.
    b. Discuss any trends over the years regarding fuel preferences.

Analysis Questions:

1. What is the most common price range observed in the dataset?
2. Does there appear to be a correlation between horsepower and mileage? Explain.
3. Which car brand is the most popular based on the number of available cars?
4. How has the preference for different fuel types changed across manufacturing years?