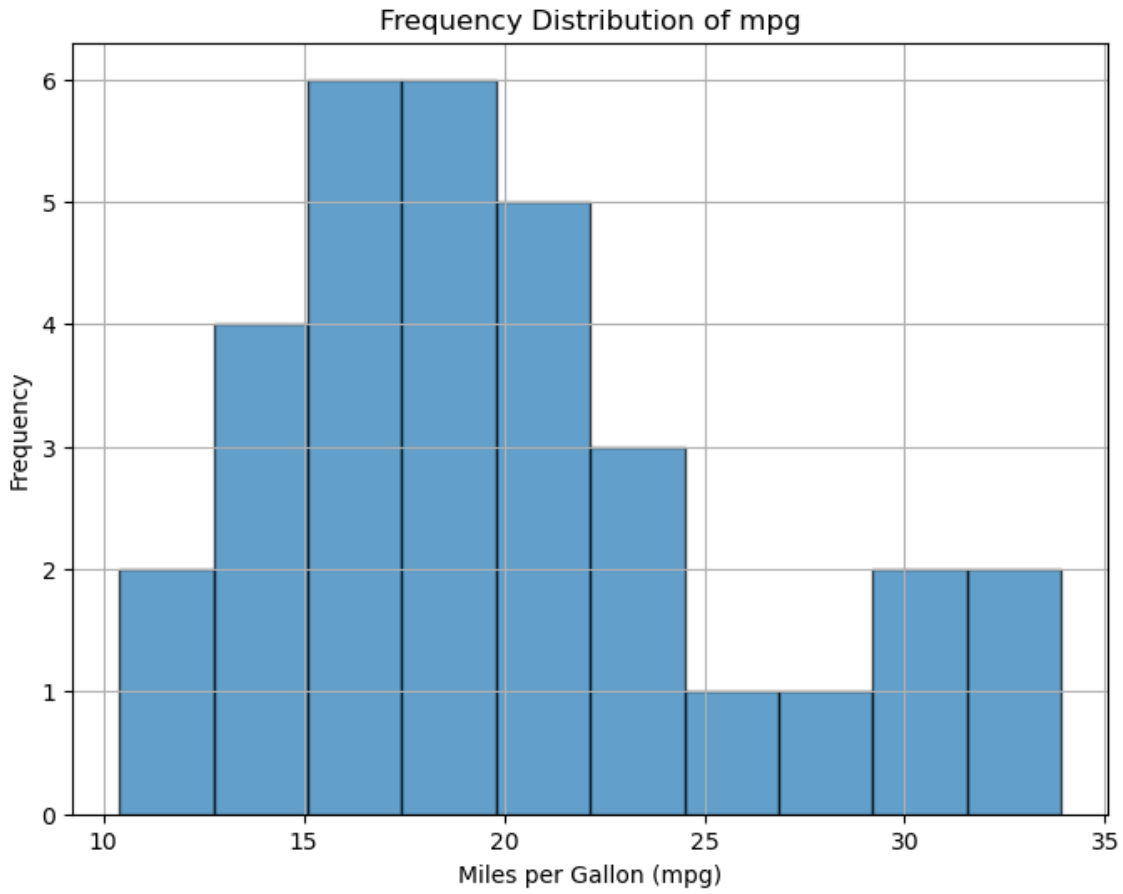
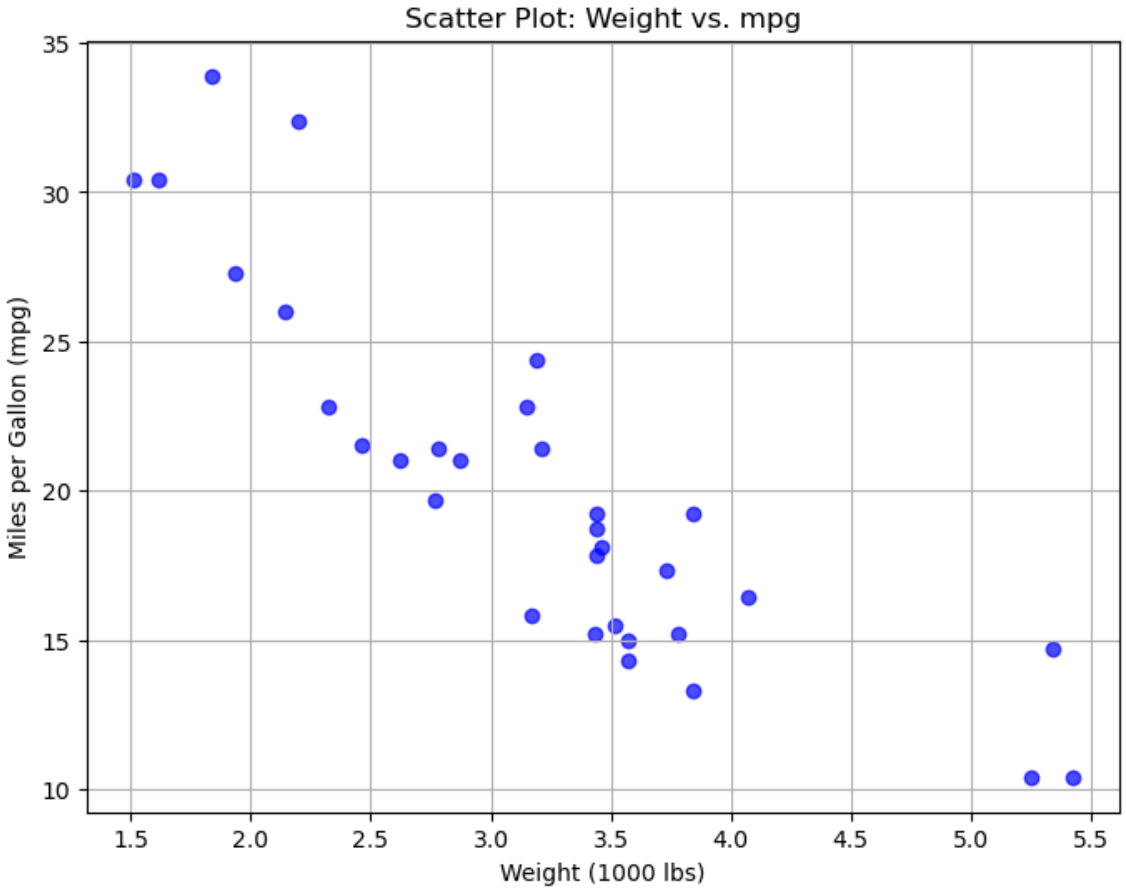
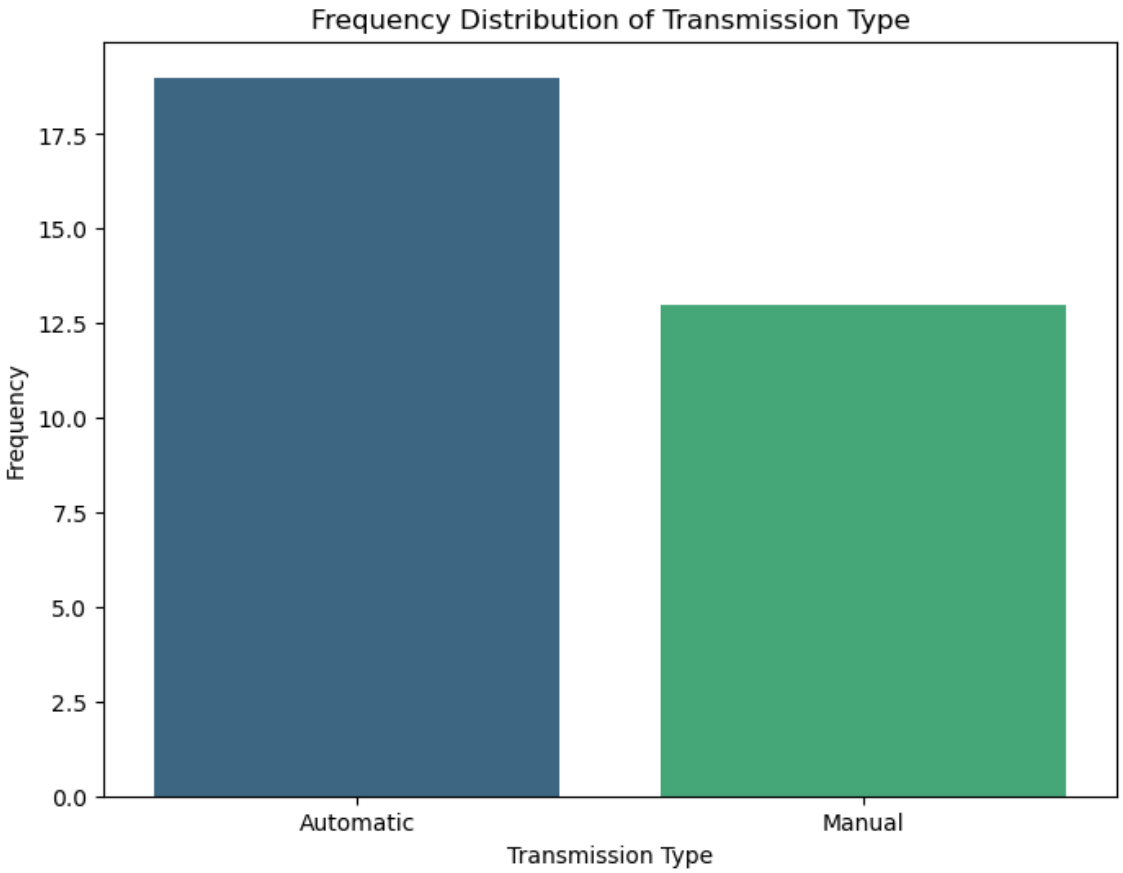
In [6]:

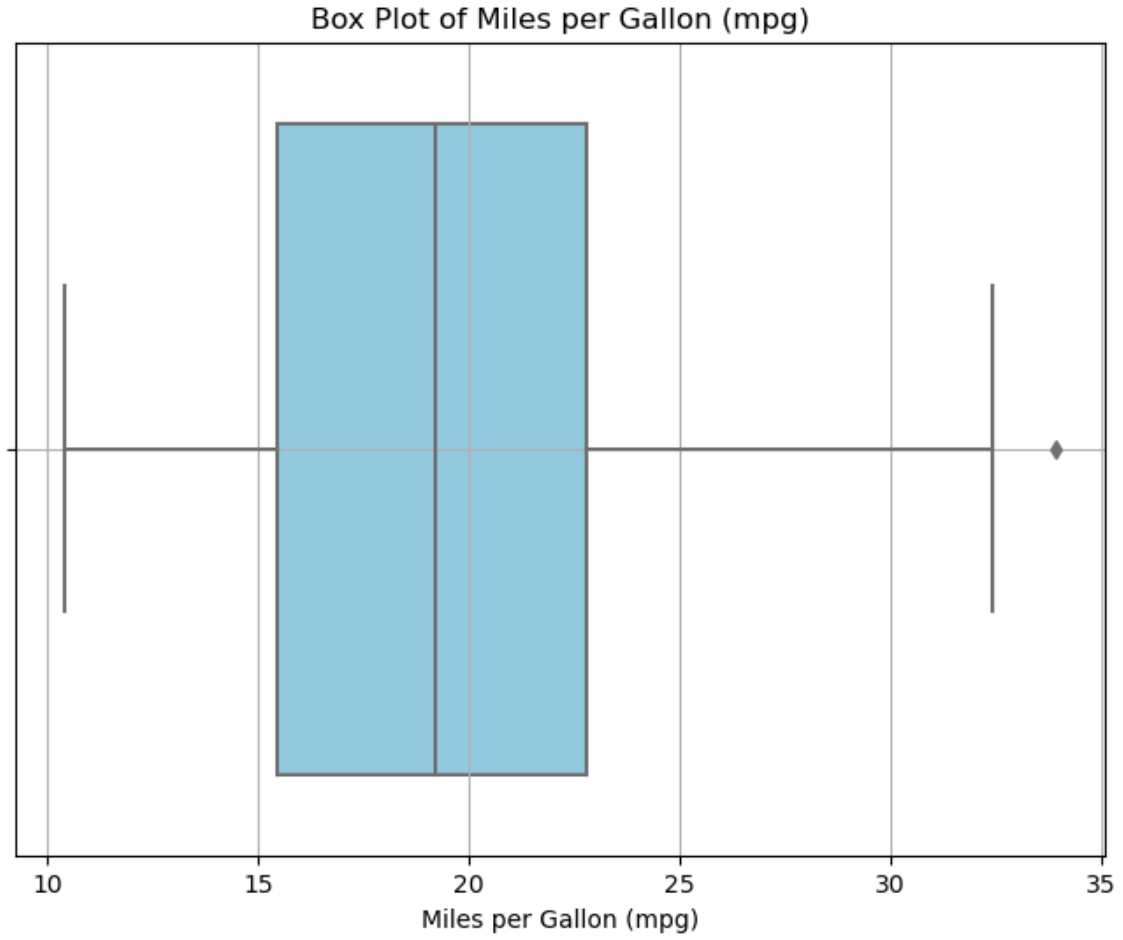
```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np

df = pd.read_csv('D:/AIML/mtcars.csv')


plt.figure(figsize=(8, 6))
plt.hist(df['mpg'], bins=10, edgecolor='k', alpha=0.7)
plt.xlabel('Miles per Gallon (mpg)')
plt.ylabel('Frequency')
plt.title('Frequency Distribution of mpg')
plt.grid(True)
plt.show()


hist_values,bin_edges= np.histogram(df['mpg'], bins=10)
max_freq_interval = (bin_edges[np.argmax(hist_values)], bin_edges[np.argmax(hist_values)
print(f"Interval with highest frequency: {max_freq_interval}")


plt.figure(figsize=(8, 6))
plt.scatter(df['wt'], df['mpg'], alpha=0.7, color='blue')
plt.xlabel('Weight (1000 lbs)')
plt.ylabel('Miles per Gallon (mpg)')
plt.title('Scatter Plot: Weight vs. mpg')
plt.grid(True)
plt.show()


transmission_counts = df['am'].value_counts()
transmission_labels = ['Automatic', 'Manual']

plt.figure(figsize=(8, 6))
sns.barplot(x=transmission_labels, y=transmission_counts, palette="viridis")
plt.xlabel('Transmission Type')
plt.ylabel('Frequency')
plt.title('Frequency Distribution of Transmission Type')
plt.show()

plt.figure(figsize=(8, 6))
sns.boxplot(x='mpg', data=df, color='skyblue')
plt.xlabel('Miles per Gallon (mpg)')
plt.title('Box Plot of Miles per Gallon (mpg)')
plt.grid(True)
plt.show()
```




```
Interval with highest frequency: (15.100000000000001, 17.450000000000003)
```




Frequency Distribution of Transmission Type
Frequency
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Automatic
Manual
Transmission Type


Box Plot of Miles per Gallon (mpg)
10
15
20
25
30
35
Miles per Gallon (mpg)

In [7]:

```
import pandas as pd
df = pd.read_csv('D:/AIML/skill.csv')
df['Count'] = df.groupby('Book_Name')['Book_Type_id'].transform('count')
print(df)
```

```
  Book_Name Book_Type_id  Count
0     Book1      Maths 1      1
1     Book2    Physics 2      1
2     Book3   Computer 3      1
3     Book4    Science 4      1
4     Book5      Maths 1      1
5     Book6    Physics 2      1
6     Book7   Computer 3      1
7     Book8    Science 4      1
```

In [ ]: