

In [6]:

```
import pandas as pd
import numpy as np
import seaborn as sns
```

In [2]:

```
import matplotlib.pyplot as plt
```

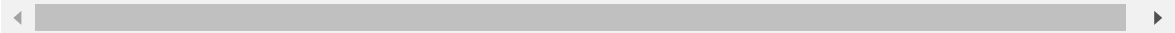
In [4]:

```
data=pd.read_csv(r"C:\21761A05B6\auto-mpg.csv")
data
```

Out[4]:

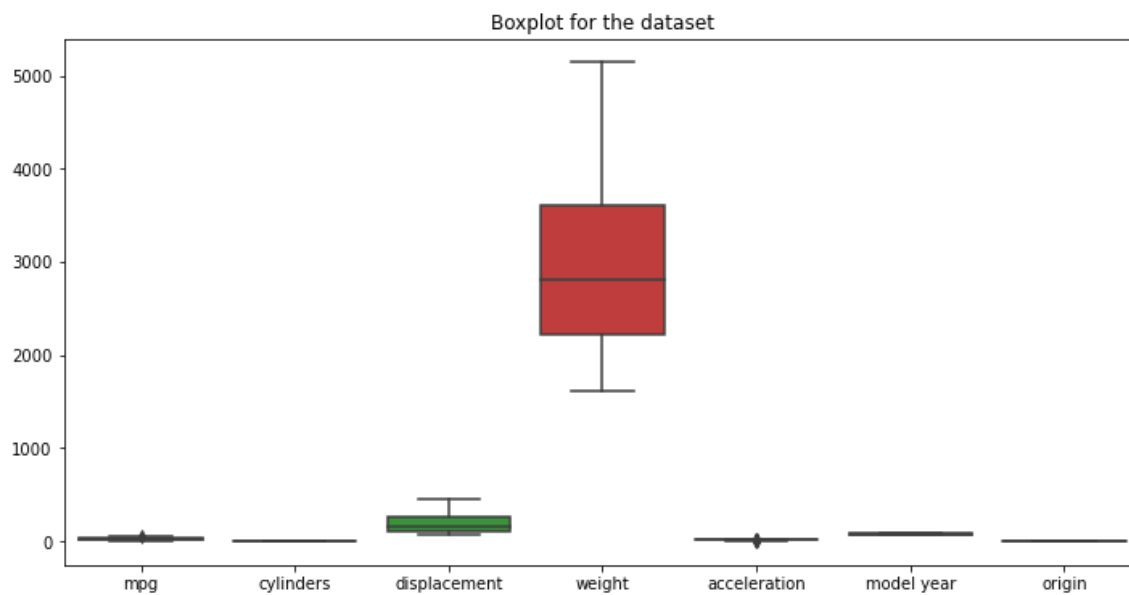
	mpg	cylinders	displacement	horsepower	weight	acceleration	model year	origin	car name
0	18.0	8	307.0	130	3504	12.0	70	1	chevrolet chevelle malibu
1	15.0	8	350.0	165	3693	11.5	70	1	buick skylark 320
2	18.0	8	318.0	150	3436	11.0	70	1	plymouth satellite
3	16.0	8	304.0	150	3433	12.0	70	1	amc rebel sst
4	17.0	8	302.0	140	3449	10.5	70	1	ford torinc
...
393	27.0	4	140.0	86	2790	15.6	82	1	ford mustang gl
394	44.0	4	97.0	52	2130	24.6	82	2	vw pickup
395	32.0	4	135.0	84	2295	11.6	82	1	dodge rampage
396	28.0	4	120.0	79	2625	18.6	82	1	ford ranger
397	31.0	4	119.0	82	2720	19.4	82	1	chevy s- 10

398 rows × 9 columns



In [16]:

```
plt.figure(figsize=(12,6))
sns.boxplot(data=data)
plt.title("Boxplot for the dataset")
plt.xticks()
plt.show()
```

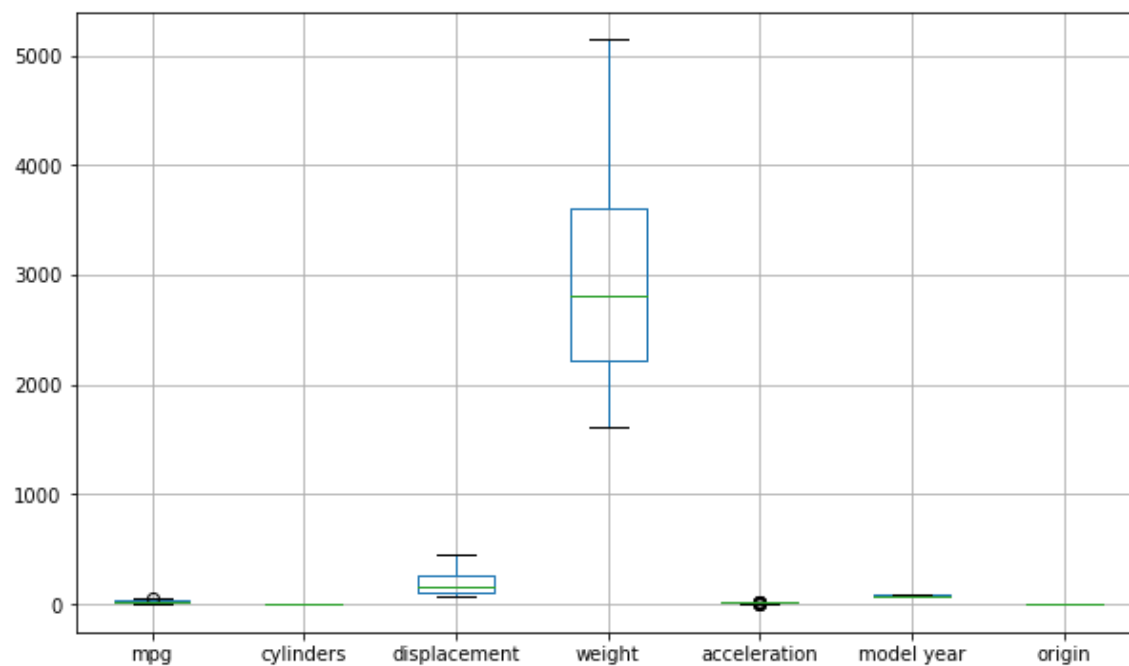


In [17]:

```
data.boxplot(figsize=(10,6))
```

Out[17]:

<AxesSubplot:>

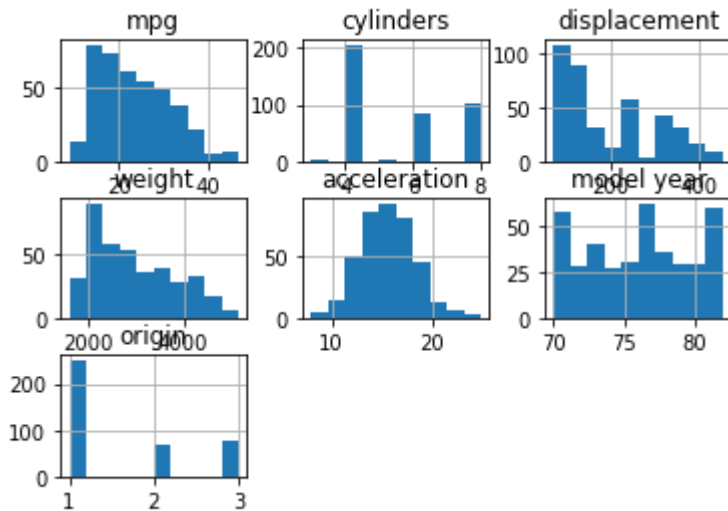


In [18]:

data.hist()

Out[18]:

```
array([[<AxesSubplot:title={'center':'mpg'}>,
       <AxesSubplot:title={'center':'cylinders'}>,
       <AxesSubplot:title={'center':'displacement'}>],
      [<AxesSubplot:title={'center':'weight'}>,
       <AxesSubplot:title={'center':'acceleration'}>,
       <AxesSubplot:title={'center':'model year'}>],
      [<AxesSubplot:title={'center':'origin'}>, <AxesSubplot:>,
       <AxesSubplot:>]], dtype=object)
```

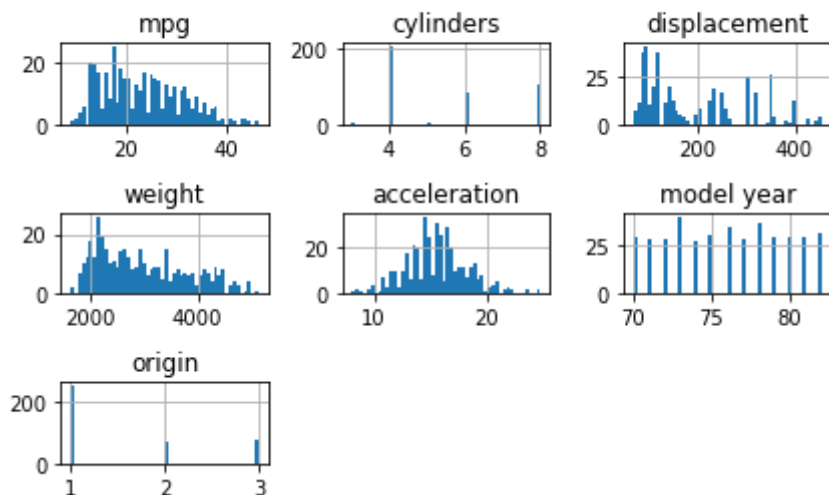


In [20]:

```
plt.figure(figsize=(12,8))
data.hist(bins=50)
plt.suptitle("Histogram for the entire dataset")
plt.tight_layout()
plt.show()
```

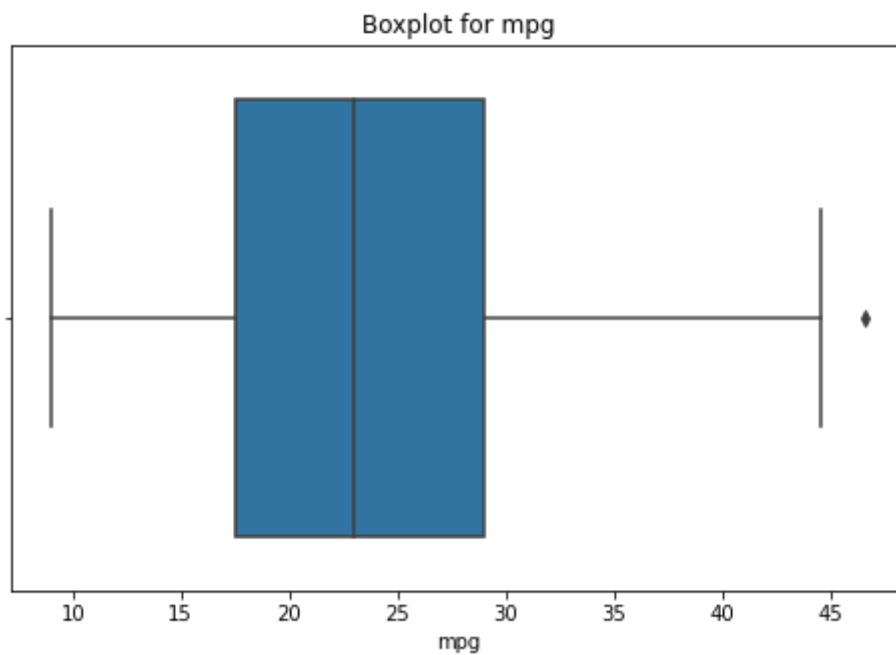
<Figure size 864x576 with 0 Axes>

Histogram for the entire dataset



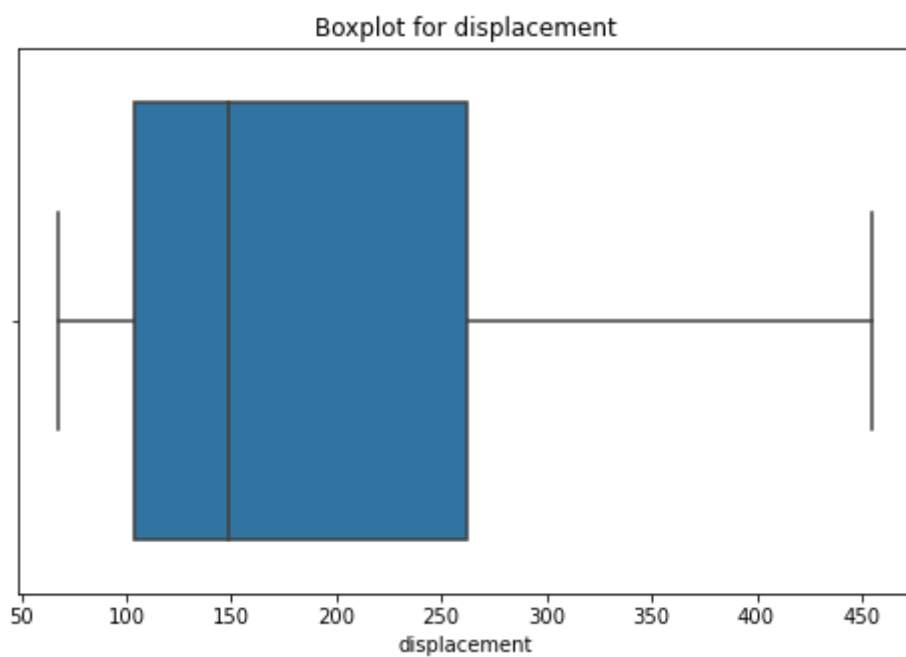
In [24]:

```
plt.figure(figsize=(8,5))
sns.boxplot(x=data['mpg'])
plt.title("Boxplot for mpg")
plt.xlabel('mpg')
plt.show()
```



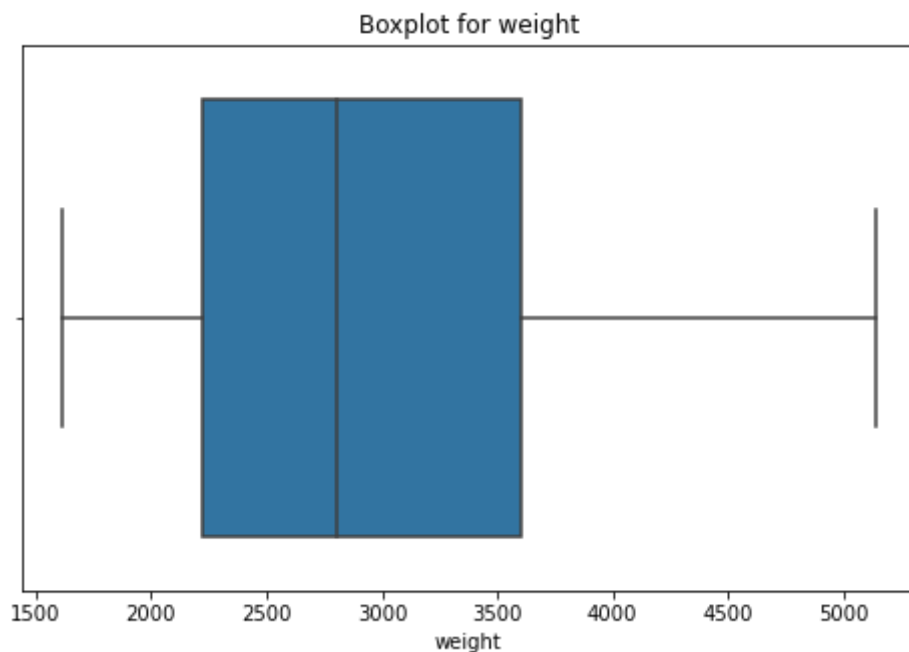
In [22]:

```
plt.figure(figsize=(8,5))
sns.boxplot(x=data['displacement'])
plt.title("Boxplot for displacement")
plt.xlabel('displacement')
plt.show()
```



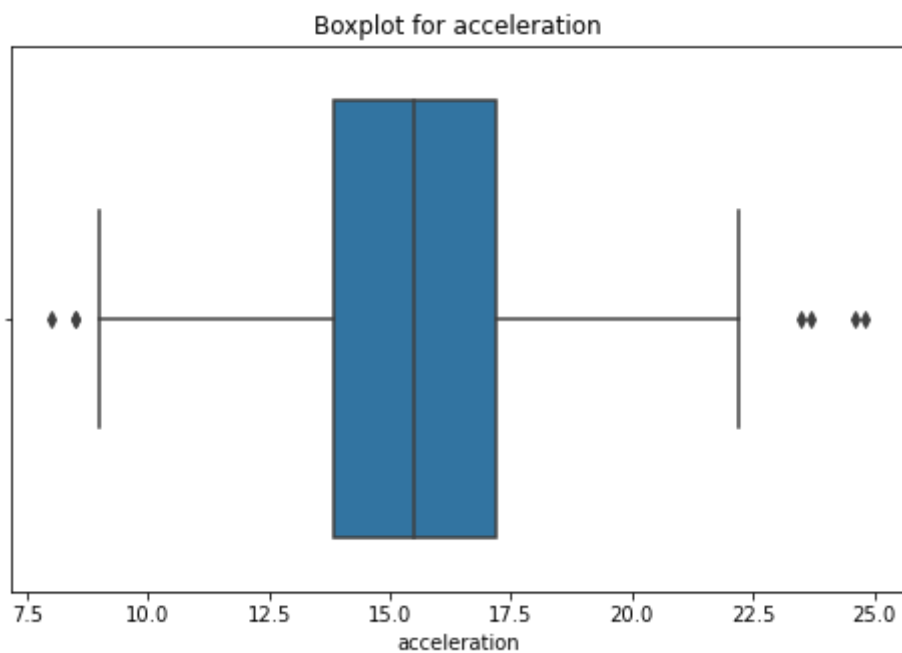
In [25]:

```
plt.figure(figsize=(8,5))
sns.boxplot(x=data['weight'])
plt.title("Boxplot for weight")
plt.xlabel('weight')
plt.show()
```



In [26]:

```
plt.figure(figsize=(8,5))
sns.boxplot(x=data['acceleration'])
plt.title("Boxplot for acceleration")
plt.xlabel('acceleration')
plt.show()
```

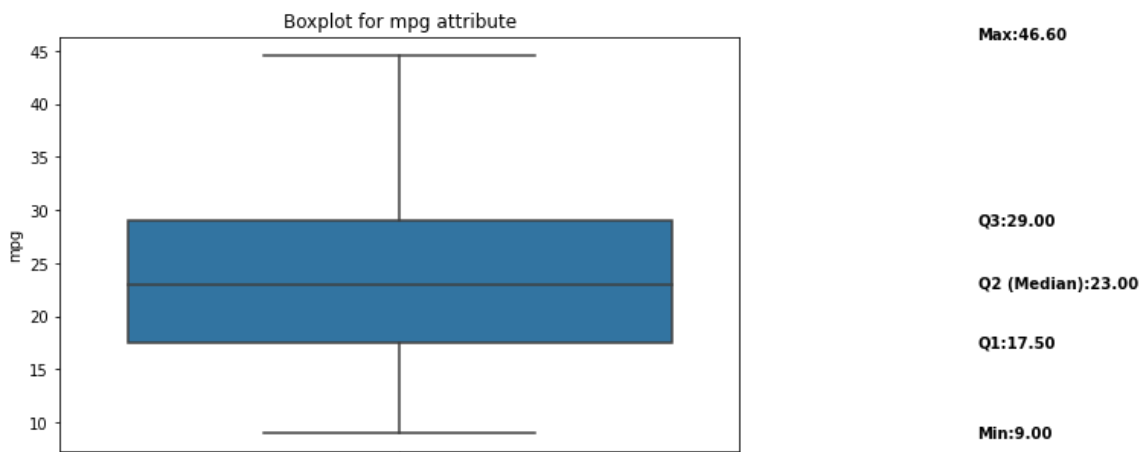


In [27]:

```
q1=data['mpg'].quantile(0.25)
q2=data['mpg'].quantile(0.5)
q3=data['mpg'].quantile(0.75)
min_value=data['mpg'].min()
max_value=data['mpg'].max()

plt.figure(figsize=(8,5))
sns.boxplot(y=data['mpg'],orient='v',showfliers=False)
plt.title('Boxplot for mpg attribute')
plt.ylabel('mpg')

plt.text(0.85,q1,f'Q1:{q1:.2f}',ha='left',va='center',fontweight='bold')
plt.text(0.85,q2,f'Q2 (Median):{q2:.2f}',ha='left',va='center',fontweight='bold')
plt.text(0.85,q3,f'Q3:{q3:.2f}',ha='left',va='center',fontweight='bold')
plt.text(0.85,min_value,f'Min:{min_value:.2f}',ha='left',va='center',fontweight='bold')
plt.text(0.85,max_value,f'Max:{max_value:.2f}',ha='left',va='center',fontweight='bold')
plt.show()
```

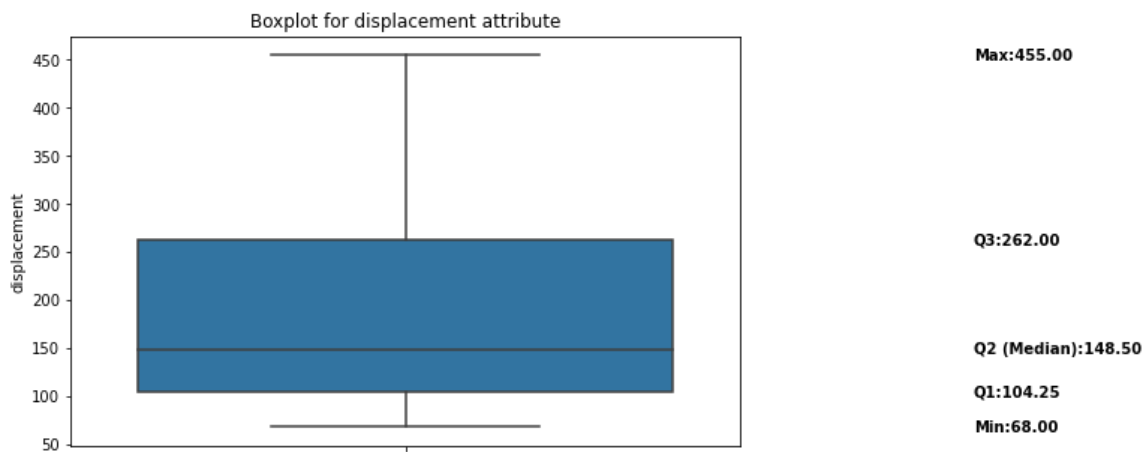


In [28]:

```
q1=data['displacement'].quantile(0.25)
q2=data['displacement'].quantile(0.5)
q3=data['displacement'].quantile(0.75)
min_value=data['displacement'].min()
max_value=data['displacement'].max()

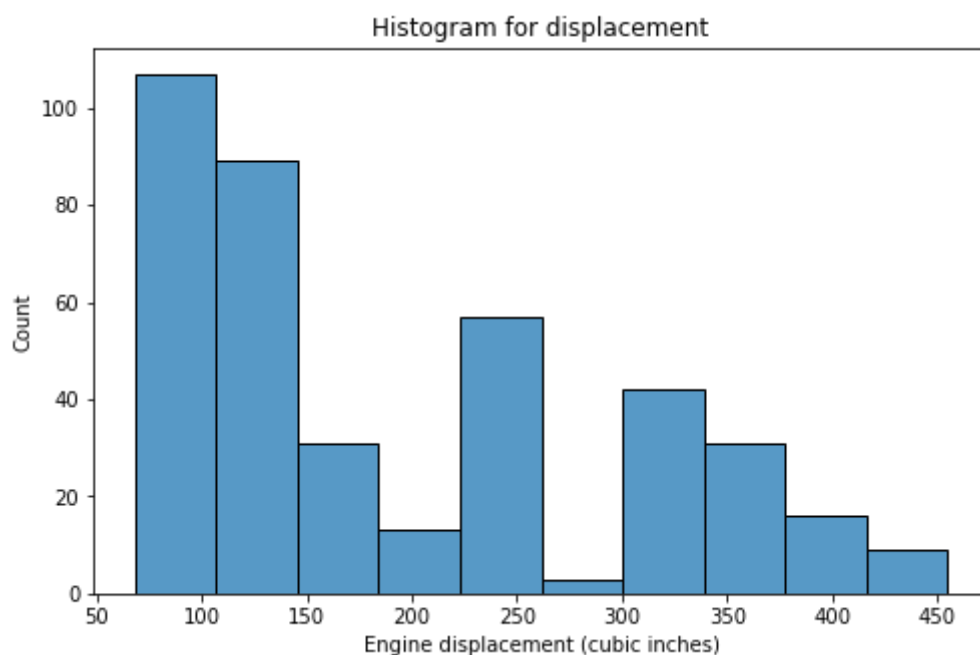
plt.figure(figsize=(8,5))
sns.boxplot(y=data['displacement'],orient='v',showliers=False)
plt.title('Boxplot for displacement attribute')
plt.ylabel('displacement')

plt.text(0.85,q1,f'Q1:{q1:.2f}',ha='left',va='center',fontweight='bold')
plt.text(0.85,q2,f'Q2 (Median):{q2:.2f}',ha='left',va='center',fontweight='bold')
plt.text(0.85,q3,f'Q3:{q3:.2f}',ha='left',va='center',fontweight='bold')
plt.text(0.85,min_value,f'Min:{min_value:.2f}',ha='left',va='center',fontweight='bold')
plt.text(0.85,max_value,f'Max:{max_value:.2f}',ha='left',va='center',fontweight='bold')
plt.show()
```



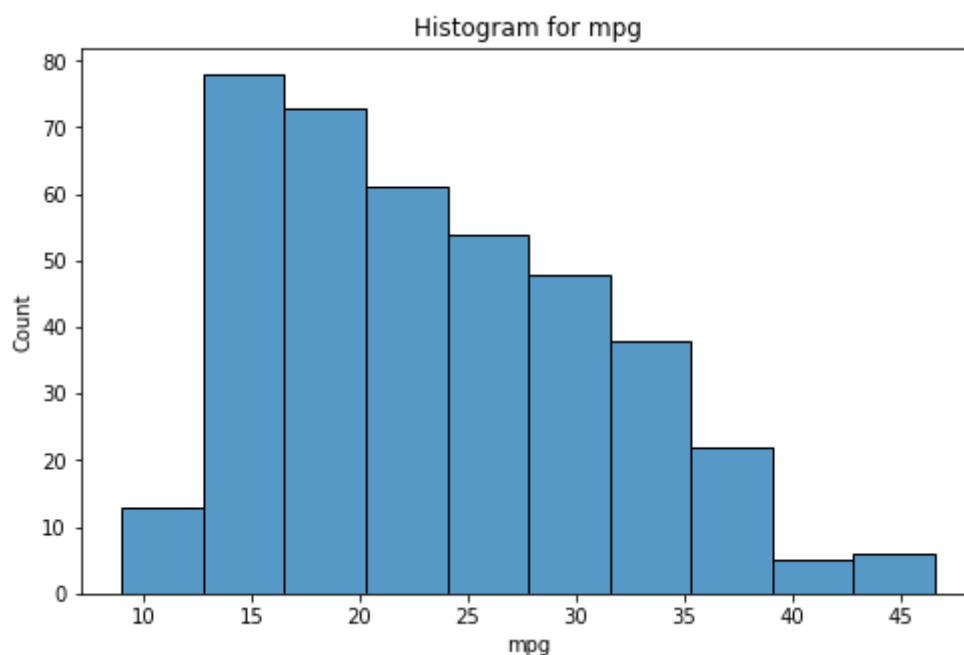
In [29]:

```
plt.figure(figsize=(8,5))
sns.histplot(data['displacement'],kde=False,bins=10)
plt.title("Histogram for displacement")
plt.xlabel('Engine displacement (cubic inches)')
plt.show()
```



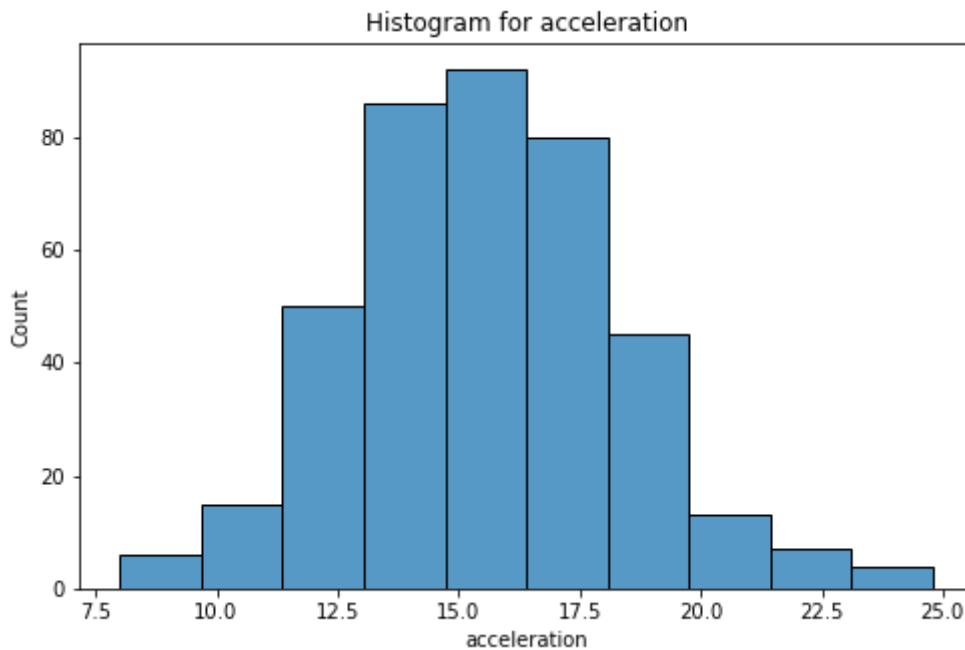
In [30]:

```
plt.figure(figsize=(8,5))
sns.histplot(data['mpg'],kde=False,bins=10)
plt.title("Histogram for mpg")
plt.xlabel('mpg')
plt.show()
```



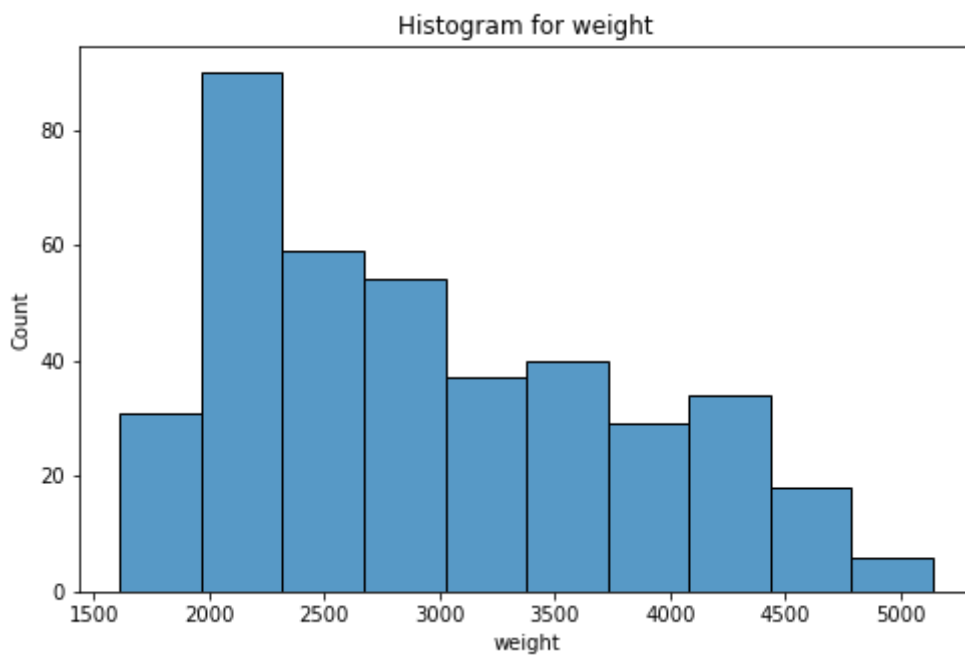
In [31]:

```
plt.figure(figsize=(8,5))
sns.histplot(data['acceleration'],kde=False,bins=10)
plt.title("Histogram for acceleration")
plt.xlabel('acceleration')
plt.show()
```



In [32]:

```
plt.figure(figsize=(8,5))
sns.histplot(data['weight'],kde=False,bins=10)
plt.title("Histogram for weight")
plt.xlabel('weight')
plt.show()
```

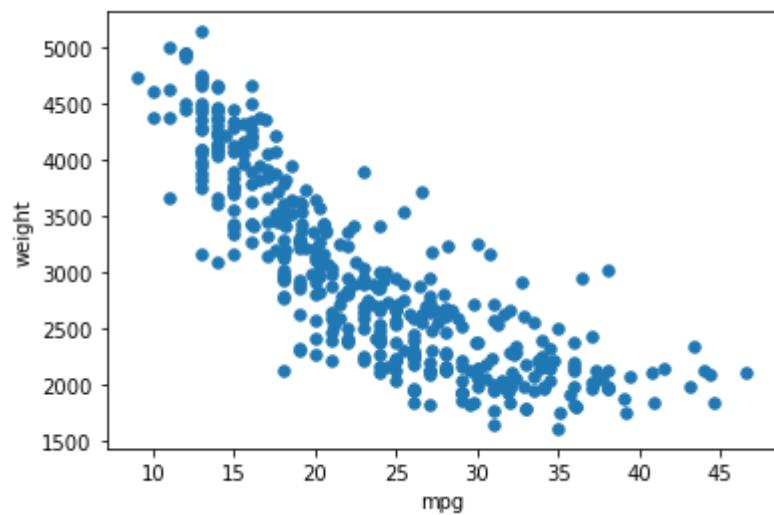


In [33]:

```
data.plot.scatter(x="mpg",y="weight",s=30)
```

Out[33]:

<AxesSubplot:xlabel='mpg', ylabel='weight'>



In []: