In [3]:

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

In [1]:

```
from google.colab import drive
drive.mount('/content/drive')
```

```
Go to this URL in a browser: https://accounts.google.com/o/oauth2/auth?client_id=947318989803-6bn6qk8qdgf4n4g3pfee6491hc0brc4i.apps.googleusercontent.com&redirect_uri=urn%3aietf%3awg%3aoauth%3a2.0%3aoob&response_type=code&scope=email%20https%3a%2f%2fwww.googleapis.com%2fauth%2fdocs.test%20https%3a%2f%2fwww.googleapis.com%2fauth%2fdrive%20https%3a%2f%2fwww.googleapis.com%2fauth%2fdrive.photos.readonly%20https%3a%2f%2fwww.googleapis.com%2fauth%2fpeopleapi.readonly

Enter your authorization code:
··········
Mounted at /content/drive
```

In [7]:

```
data=pd.read_csv('/content/drive/My Drive/Colab Notebooks/ML-Lab/L1/mtcars.csv')
d=pd.crosstab(index=data['cyl'],columns="count",dropna=True)
print(d)
```

```
col_0  count
cyl
4         11
6          7
8         14
```

In [8]:

```
print(data.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 32 entries, 0 to 31
Data columns (total 12 columns):
 #   Column  Non-Null Count  Dtype
---  ------  --------------  -----
 0   model   32 non-null     object
 1   mpg     32 non-null     float64
 2   cyl     32 non-null     int64
 3   disp    32 non-null     float64
 4   hp      32 non-null     int64
 5   drat    32 non-null     float64
 6   wt      32 non-null     float64
 7   qsec    32 non-null     float64
 8   vs      32 non-null     int64
 9   am      32 non-null     int64
 10  gear    32 non-null     int64
 11  carb    32 non-null     int64
dtypes: float64(5), int64(6), object(1)
memory usage: 3.1+ KB
None
```

In [9]:

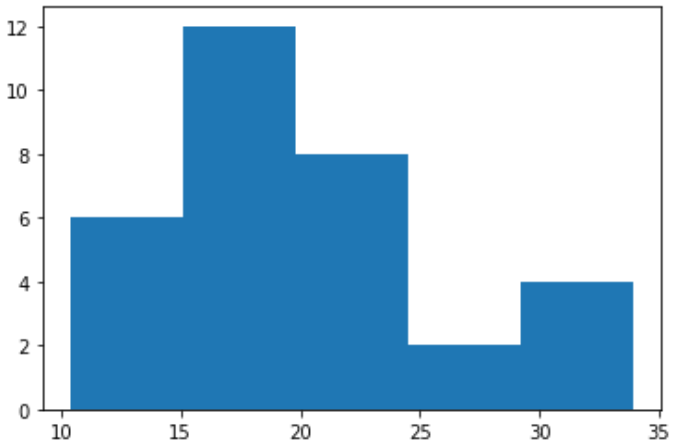
```
#Count Total Null values in each column
print("Total Null Data:",data.isnull().sum())
```

```
Total Null Data: model    0
mpg      0
cyl      0
disp     0
hp       0
```

```
drat      0
wt        0
qsec      0
vs        0
am        0
gear      0
carb      0
dtype: int64
```

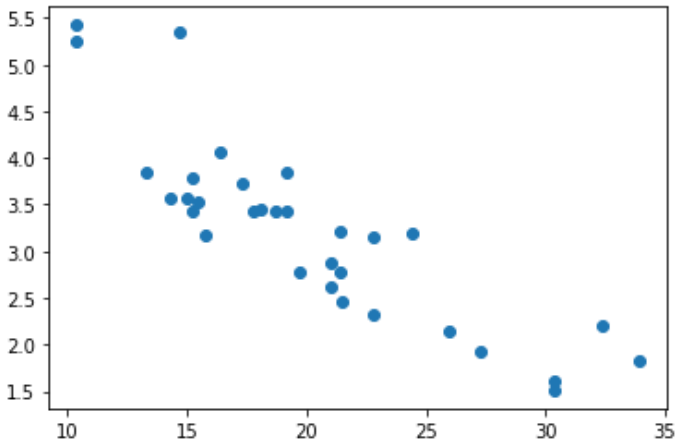
In [10]:

```
# Finding the Histogram
# From the given dataset 'mtcars.csv', plot a histogram to check the frequency distributi
on of the variable 'mpg' (Miles per gallon).
plt.hist(data['mpg'],bins=5)
plt.show()
```



In [11]:

```
#scatter plot of 'mpg' (Miles per gallon) vs 'wt' (Weight of car)
plt.scatter(data['mpg'],data['wt'])
plt.show()
```



In [12]:

```
#In the dataframe, under the variable gear count total records in each value
df=pd.DataFrame(data,columns=['gear'])
print("Count How many values:\n",df['gear'].value_counts())
```

```
Count How many values:
 3    15
4     12
5      5
Name: gear, dtype: int64
```

Exercise: 1) Draw Scatter Plot between age and salary for "Data_for_Transformation.csv" file 2) Draw Histogram of Salary 3) Plot bar chart of Country