

## 1.Import Library

```
In [1]: import pandas as pd
import matplotlib.pyplot as plt
plt.style.use("seaborn-darkgrid")
```

## 2.Import Dataset

```
In [2]: data=pd.read_csv('mtcars.csv')
data.head()
```

Out[2]:

	model	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
0	Mazda RX4	21.0	6	160.0	110	3.90	2.620	16.46	0	1	4	4
1	Mazda RX4 Wag	21.0	6	160.0	110	3.90	2.875	17.02	0	1	4	4
2	Datsun 710	22.8	4	108.0	93	3.85	2.320	18.61	1	1	4	1
3	Hornet 4 Drive	21.4	6	258.0	110	3.08	3.215	19.44	1	0	3	1
4	Hornet Sportabout	18.7	8	360.0	175	3.15	3.440	17.02	0	0	3	2

## 3.Data Understanding

```
In [3]: data=data.drop(['model'],axis=1)
```

```
In [4]: a=data.gear.value_counts()
a
```

Out[4]:

3	15
4	12
5	5

Name: gear, dtype: int64

```
In [5]: pd.crosstab(data.cyl,data.gear)
```

Out[5]:

gear	3	4	5
cyl			
4	1	8	2
6	2	4	1
8	12	0	2

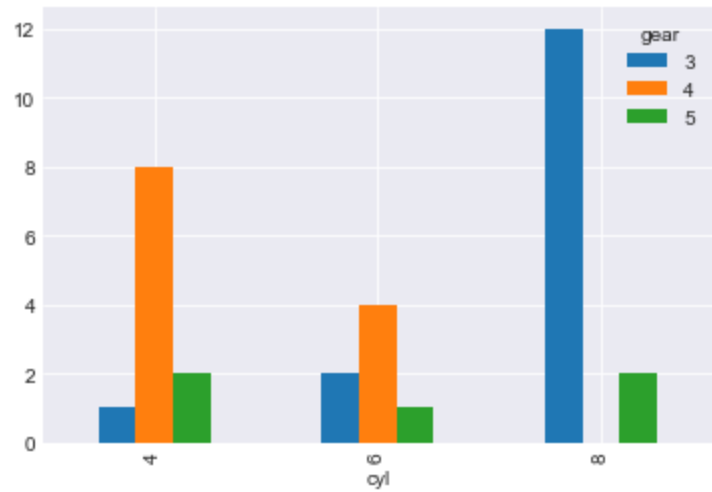
```
In [6]: data[(data['cyl']==6) &(data['gear']==4)]
```

Out[6]:

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
0	21.0	6	160.0	110	3.90	2.620	16.46	0	1	4	4
1	21.0	6	160.0	110	3.90	2.875	17.02	0	1	4	4
9	19.2	6	167.6	123	3.92	3.440	18.30	1	0	4	4
10	17.8	6	167.6	123	3.92	3.440	18.90	1	0	4	4

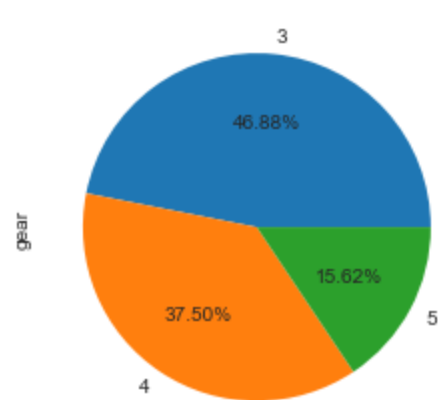
```
In [7]: pd.crosstab(data.cyl,data.gear).plot(kind="bar")
```

Out[7]: <matplotlib.axes.\_subplots.AxesSubplot at 0x2111a4159d0>



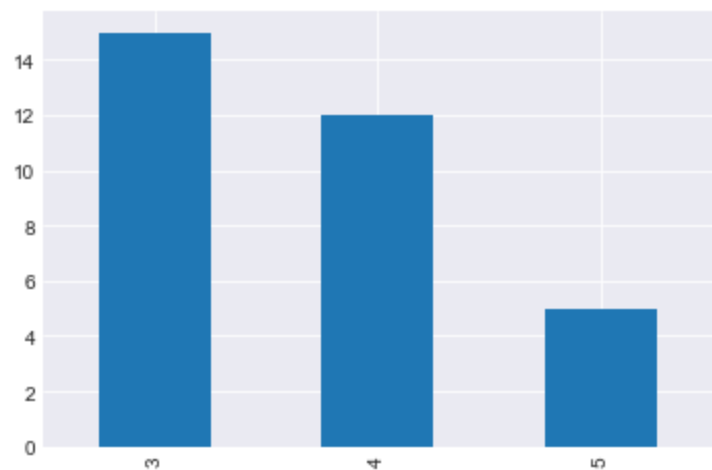
```
In [8]: data.gear.value_counts().plot(kind="pie",autopct="%1.2f%%")
```

Out[8]: <matplotlib.axes.\_subplots.AxesSubplot at 0x2111c514a60>



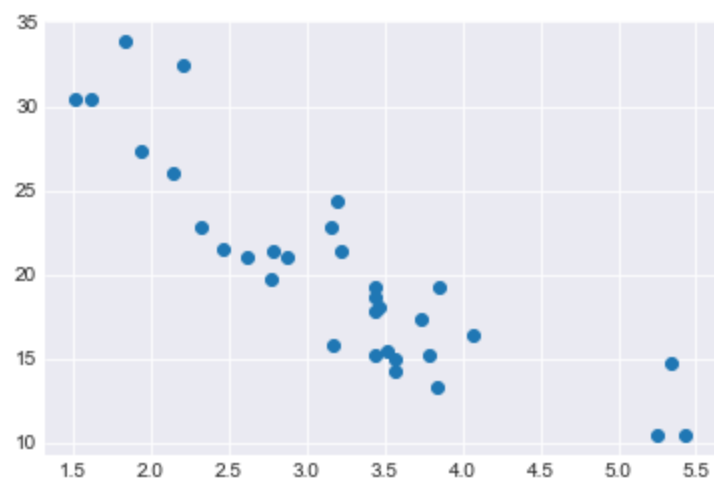
```
In [9]: data.gear.value_counts().plot(kind="bar")
```

Out[9]: <matplotlib.axes.\_subplots.AxesSubplot at 0x2111c55ca90>

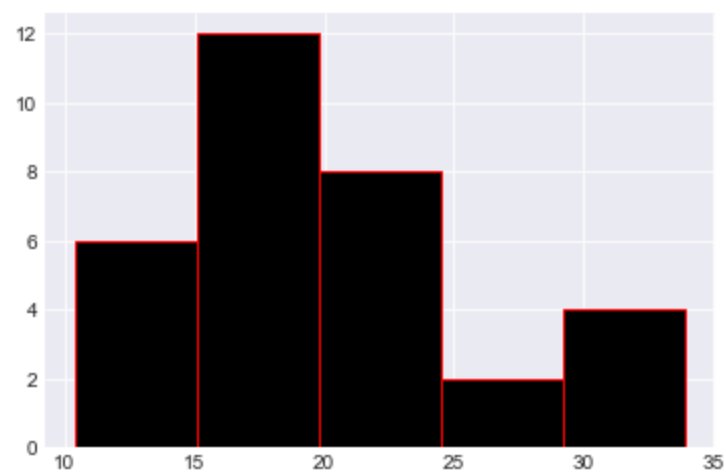


```
In [10]: plt.scatter(data.wt,data.mpg)
```

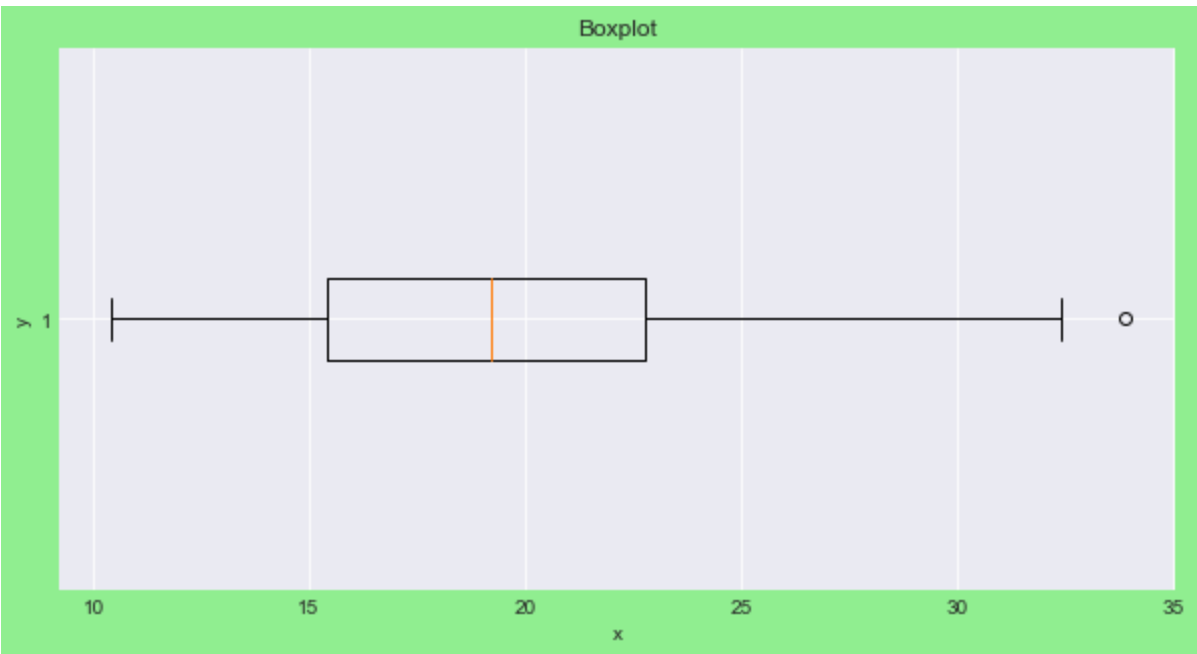
Out[10]: <matplotlib.collections.PathCollection at 0x2111c5ead60>



```
In [11]: plt.hist(data.mpg,facecolor="black",edgecolor="red",bins=5)
plt.show()
```



```
In [12]: plt.figure(figsize=(10,5),facecolor="lightgreen")
plt.boxplot(data.mpg,vert=False)
plt.ylabel("y")
plt.xlabel("x")
plt.title("Boxplot")
plt.show()
```



```
In [13]: plt.figure(figsize=(7,5),facecolor="lightgreen")
plt.violinplot(data.mpg,vert=False)
plt.show()
```

