```
#STATS LAB-1 EU  April 22 (Richard Instructor)
```

```
#pip install seaborn
```

```
import seaborn as sns
import numpy as np
```

```
sns.get_dataset_names()
```

```
['anagrams',
 'anscombe',
 'attention',
 'brain_networks',
 'car_crashes',
 'diamonds',
 'dots',
 'exercise',
 'flights',
 'fmri',
 'gammas',
 'geyser',
 'iris',
 'mpg',
 'penguins',
 'planets',
 'taxis',
 'tips',
 'titanic']
```

```
df = sns.load_dataset("mpg")
```

```
df.head()
```

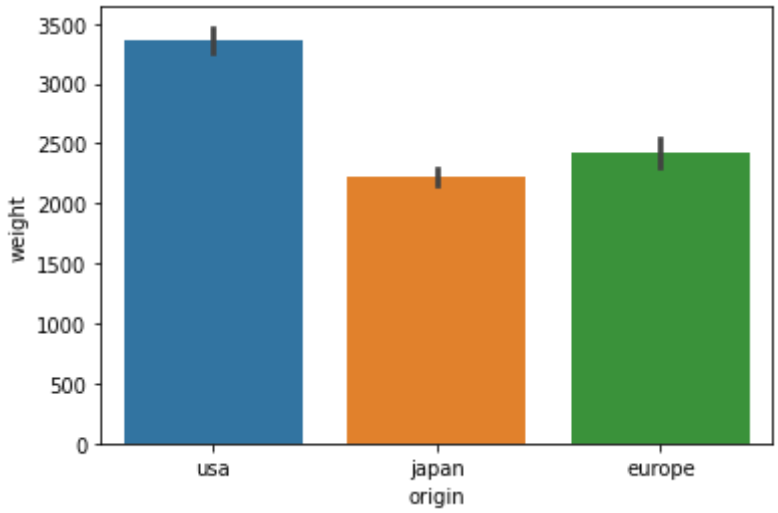
	mpg	cylinders	displacement	horsepower	weight	acceleration	model_year	origi
0	18.0	8	307.0	130.0	3504	12.0	70	us
1	15.0	8	350.0	165.0	3693	11.5	70	us

```
df.describe()
```

	mpg	cylinders	displacement	horsepower	weight	acceleration	mc
count	398.000000	398.000000	398.000000	392.000000	398.000000	398.000000	3
mean	23.514573	5.454774	193.425879	104.469388	2970.424623	15.568090	
std	7.815984	1.701004	104.269838	38.491160	846.841774	2.757689	
min	9.000000	3.000000	68.000000	46.000000	1613.000000	8.000000	
25%	17.500000	4.000000	104.250000	75.000000	2223.750000	13.825000	

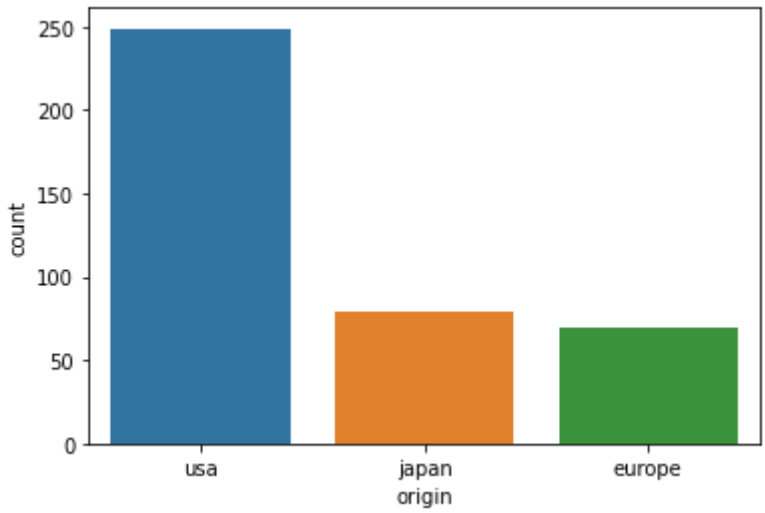
```
sns.barplot(x="origin", y="weight", data=df)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f69c7c84450>
```



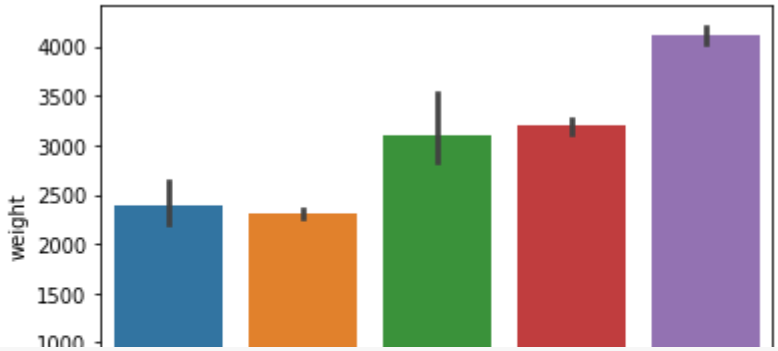

```
sns.countplot(x="origin", data=df)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f69c7bfc150>
```



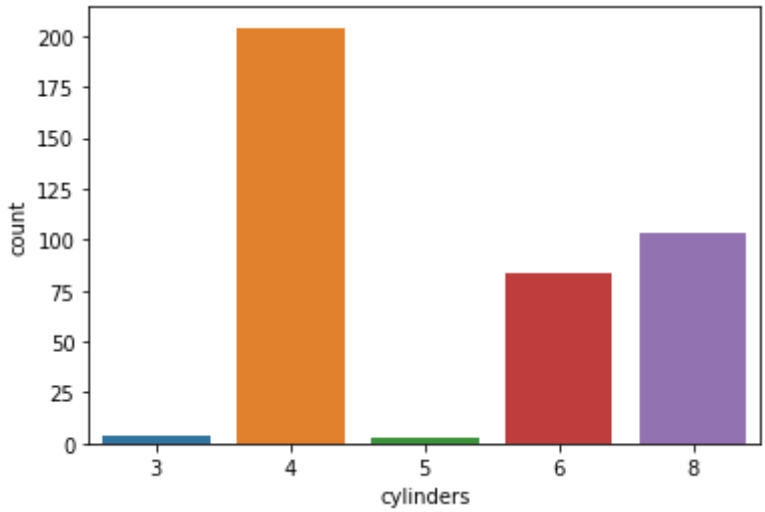

```
sns.barplot(x="cylinders", y="weight", data=df)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f69c76d3150>
```



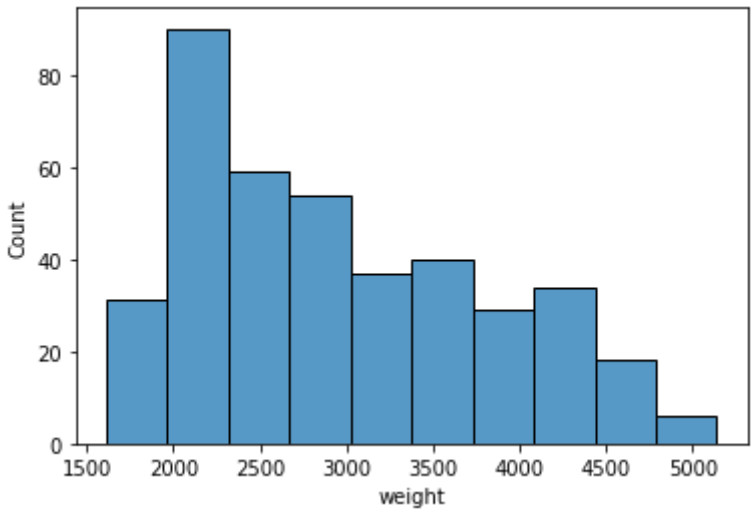

```
sns.countplot(x="cylinders", data=df)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f69c75f7dd0>
```



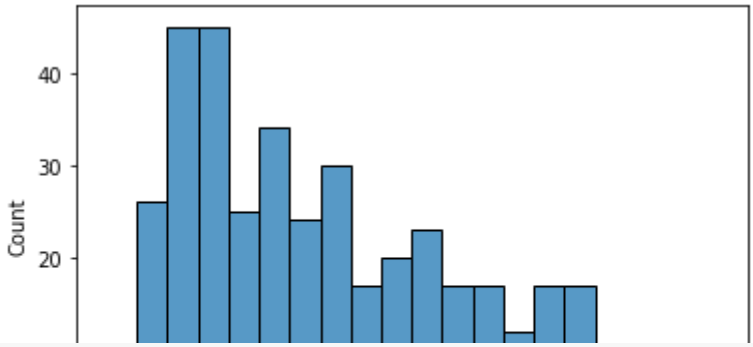

```
sns.histplot(x="weight", data=df)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f69c75eff50>
```

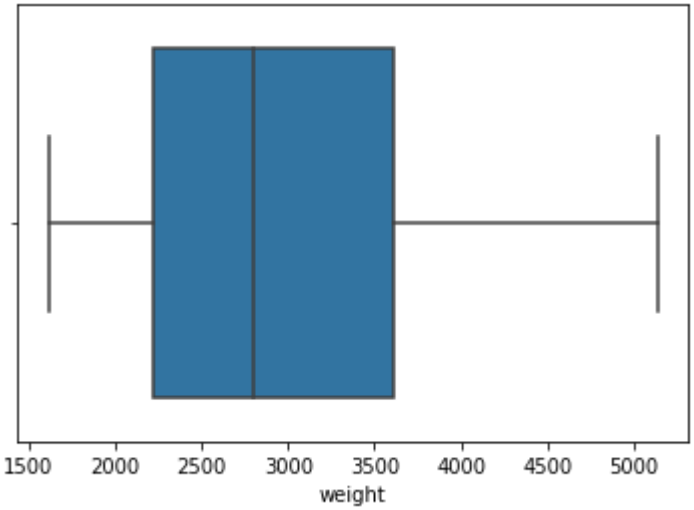



```
sns.histplot(x="weight", bins=20, data=df)
```

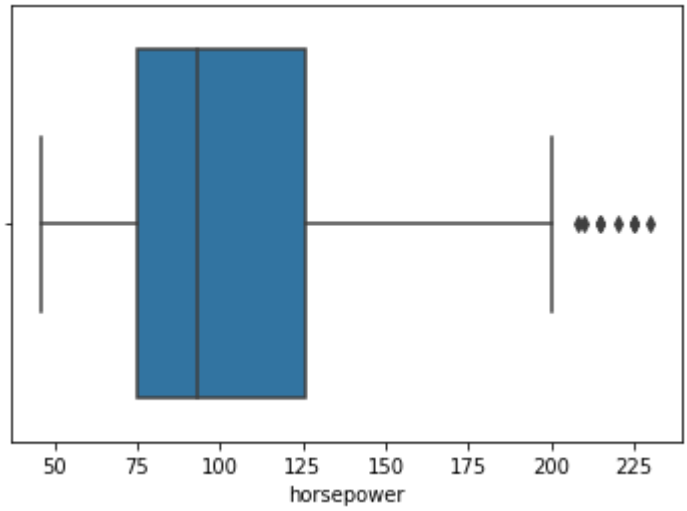
```
<matplotlib.axes._subplots.AxesSubplot at 0x7f69c702c490>
```



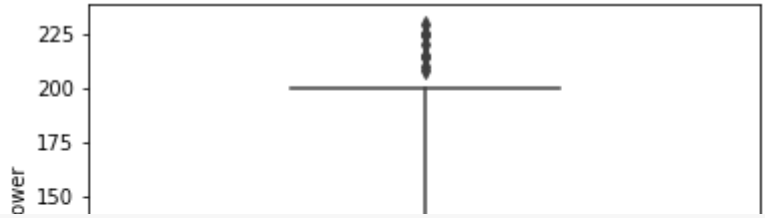

```
sns.boxplot(x="weight", data=df);
```



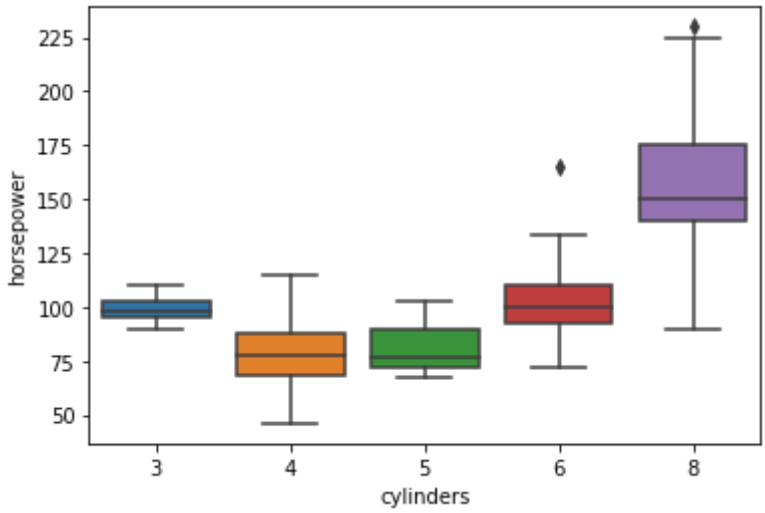

```
sns.boxplot(x="horsepower", data=df);
```




```
sns.boxplot(y="horsepower", data=df);
```

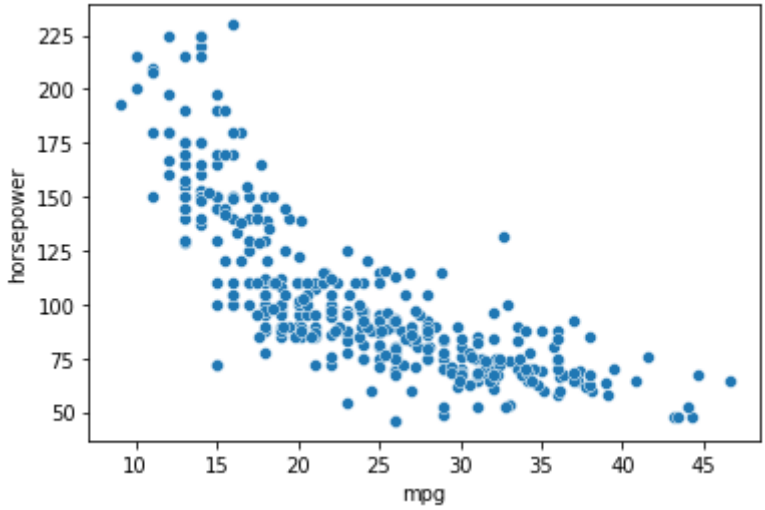



```
sns.boxplot(y="horsepower", x="cylinders", data=df);
```




```
sns.scatterplot(x="mpg", y="horsepower", data=df)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f69c6c99110>
```

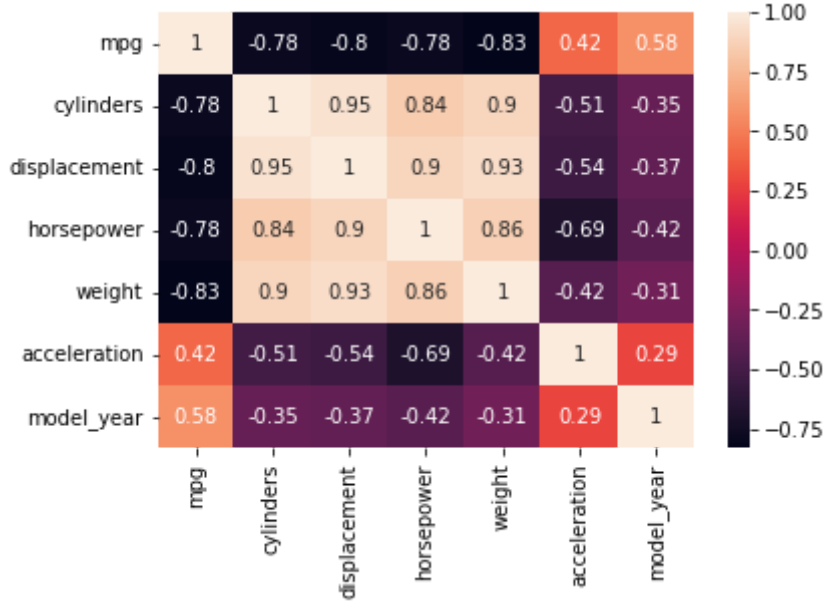



```
df.corr()
```

	mpg	cylinders	displacement	horsepower	weight	acceleration
mpg	1.000000	-0.775396	-0.804203	-0.778427	-0.831741	0.420289

```
sns.heatmap(df.corr(), annot=True)
```

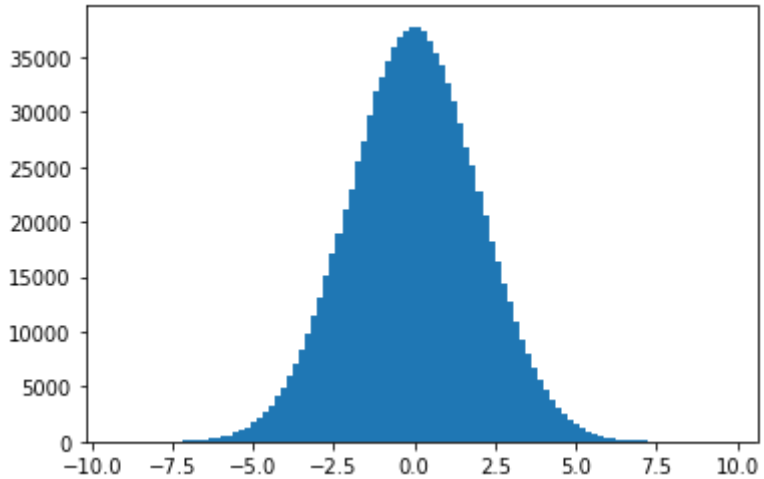
```
<matplotlib.axes._subplots.AxesSubplot at 0x7f69c6c06090>
```




```
from scipy.stats import kurtosis, skew
from scipy import stats
```

```
x = np.random.normal(0, 2, 1000000)  #mu,sigma, pop
```

```
import matplotlib.pyplot as plt
plt.hist(x, bins=100);
```




```
kurtosis(x)
```

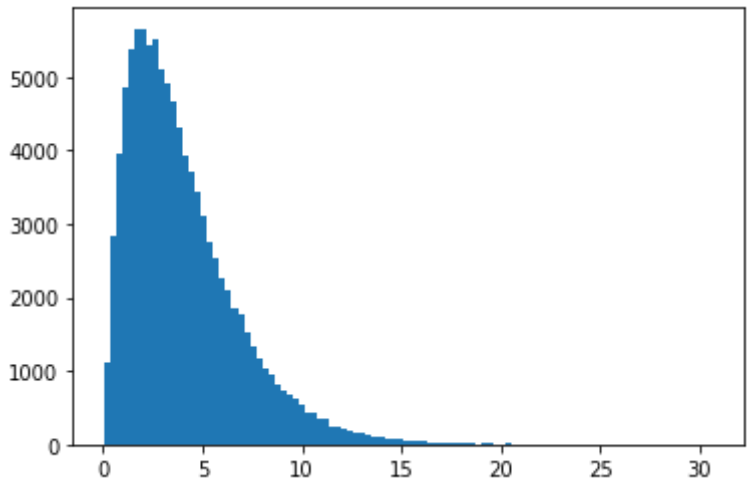
```
-0.0033875077416802846
```

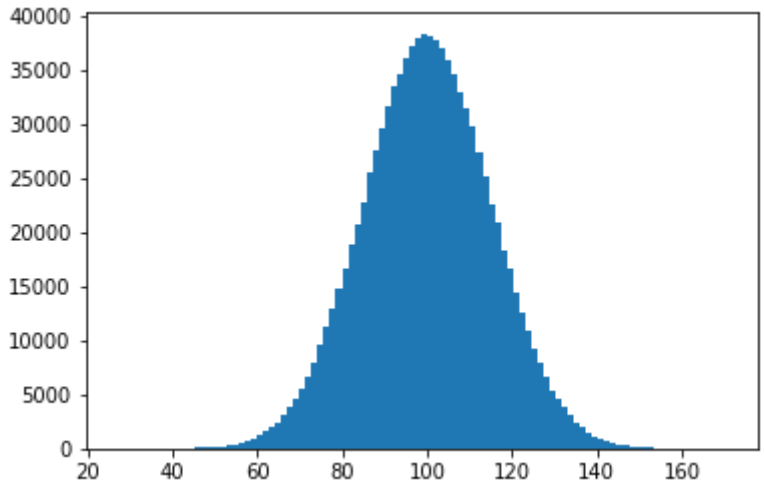
```
skew(x)
```

```
-0.003286119152432647
```

```
shape, scale = 2, 2
s=np.random.gamma(shape,scale, 100000)
```

```
plt.hist(s, bins=100);
```




```
x = np.random.normal(100, 15, 1000000)  #mu,sigma, pop
import matplotlib.pyplot as plt
plt.hist(x, bins=100);
```