In [1]:
```
import pandas as pd
```

In [2]:
```
import numpy as np
```

In [3]:
```
import statistics as st
```

In [4]:
```
import warnings
```

In [5]:
```
warnings.filterwarnings('ignore')
```

In [6]:
```
warnings.simplefilter('ignore')
```

In [7]:
```
df = pd.read_csv(r"C:\Users\Roshan Ramdas Kate\Downloads\iris.csv")
```

In [8]:
```
print(df.shape)
```

```
(150, 5)
```

In [9]:
```
print(df.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 5 columns):
 #   Column        Non-Null Count  Dtype  
---  ------        --------------  -----  
 0   sepal.length  150 non-null    float64
 1   sepal.width   150 non-null    float64
 2   petal.length  150 non-null    float64
 3   petal.width   150 non-null    float64
 4   variety       150 non-null    object 
dtypes: float64(4), object(1)
memory usage: 6.0+ KB
None
```

In [10]:
```
df.mean()
```

Out[10]:
```
sepal.length    5.843333
sepal.width     3.057333
petal.length    3.758000
petal.width     1.199333
dtype: float64
```

In [11]:
```
print(df.loc[:,'sepal.length'].mean())
```

```
5.843333333333335
```

In [12]:
```
print(df.loc[:,'sepal.width'].mean())
```

```
3.057333333333334
```

In [13]:
```
df.mean(axis = 1)[0:5]
```

Out[13]:
```
0    2.550
1    2.375
2    2.350
3    2.350
4    2.550
dtype: float64
```

In [14]:
```
df.median()
```

Out[14]:
```
sepal.length    5.80
sepal.width     3.00
petal.length    4.35
petal.width     1.30
dtype: float64
```

In [15]:
```
print(df.loc[:,'sepal.length'].median())
```

```
5.8
```

In [16]:
```
print(df.loc[:,'sepal.width'].median())
```

```
3.0
```

In [17]:
```
df.median(axis = 1)[0:5]
```

Out[17]:
```
0    2.45
1    2.20
2    2.25
3    2.30
4    2.50
dtype: float64
```

In [18]:
```
df.mode()
```

Out[18]:

| | sepal.length | sepal.width | petal.length | petal.width | variety |
|---|---|---|---|---|---|
| **0** | 5.0 | 3.0 | 1.4 | 0.2 | Setosa |
| **1** | NaN | NaN | 1.5 | NaN | Versicolor |
| **2** | NaN | NaN | NaN | NaN | Virginica |

In [19]:
```
df.std()
```

Out[19]:
```
sepal.length    0.828066
sepal.width     0.435866
petal.length    1.765298
petal.width     0.762238
dtype: float64
```

In [20]:
```
print(df.loc[:,'sepal.length'].std())
```

```
0.8280661279778629
```

In [21]:
```
print(df.loc[:,'sepal.width'].std())
```

```
0.435866284936698
```

In [22]:
```
df.std(axis = 1)[0:5]
```

Out[22]:
```
0    2.179449
1    2.036950
2    1.997498
3    1.912241
4    2.156386
dtype: float64
```

In [23]:
```
 df.var()
```

Out[23]:
```
sepal.length    0.685694
sepal.width     0.189979
petal.length    3.116278
petal.width     0.581006
dtype: float64
```

In [24]:
```
from scipy.stats import iqr
```

In [25]:
```
iqr(df['sepal.length'])
```

Out[25]:
```
1.3000000000000007
```

In [26]:
```
print(df.skew())
```

```
sepal.length    0.314911
sepal.width     0.318966
petal.length   -0.274884
petal.width    -0.102967
dtype: float64
```

In [27]:
```
df.describe()
```

Out[27]:

| | sepal.length | sepal.width | petal.length | petal.width |
|---|---|---|---|---|
| **count** | 150.000000 | 150.000000 | 150.000000 | 150.000000 |
| **mean** | 5.843333 | 3.057333 | 3.758000 | 1.199333 |
| **std** | 0.828066 | 0.435866 | 1.765298 | 0.762238 |
| **min** | 4.300000 | 2.000000 | 1.000000 | 0.100000 |
| **25%** | 5.100000 | 2.800000 | 1.600000 | 0.300000 |
| **50%** | 5.800000 | 3.000000 | 4.350000 | 1.300000 |
| **75%** | 6.400000 | 3.300000 | 5.100000 | 1.800000 |
| **max** | 7.900000 | 4.400000 | 6.900000 | 2.500000 |

In [28]:
```
df.describe(include='all')
```

Out[28]:

| | sepal.length | sepal.width | petal.length | petal.width | variety |
|---|---|---|---|---|---|
| **count** | 150.000000 | 150.000000 | 150.000000 | 150.000000 | 150 |
| **unique** | NaN | NaN | NaN | NaN | 3 |
| **top** | NaN | NaN | NaN | NaN | Setosa |
| **freq** | NaN | NaN | NaN | NaN | 50 |
| **mean** | 5.843333 | 3.057333 | 3.758000 | 1.199333 | NaN |
| **std** | 0.828066 | 0.435866 | 1.765298 | 0.762238 | NaN |
| **min** | 4.300000 | 2.000000 | 1.000000 | 0.100000 | NaN |
| **25%** | 5.100000 | 2.800000 | 1.600000 | 0.300000 | NaN |
| **50%** | 5.800000 | 3.000000 | 4.350000 | 1.300000 | NaN |
| **75%** | 6.400000 | 3.300000 | 5.100000 | 1.800000 | NaN |
| **max** | 7.900000 | 4.400000 | 6.900000 | 2.500000 | NaN |

In [ ]:
```

```