In [1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as se
```

In [2]:
```
sp=pd.read_csv("/home/student/Iris.csv")
```

In [3]:
```
sp.head(6)
```

Out[3]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa
5	6	5.4	3.9	1.7	0.4	Iris-setosa

In [4]:
```
sp.mean()
```

Out[4]:
```
Id               75.500000
SepalLengthCm     5.843333
SepalWidthCm      3.054000
PetalLengthCm     3.758667
PetalWidthCm      1.198667
dtype: float64
```

In [5]:
```
sp.loc[:,'SepalLengthCm'].mean()
```

Out[5]:
```
5.843333333333334
```

In [6]:
```
sp.mean(axis=1)[0:4]
```

Out[6]:
```
0    2.24
1    2.30
2    2.48
3    2.68
dtype: float64
```

In [7]:
```
sp.median()
```

Out[7]:
```
Id               75.50
SepalLengthCm     5.80
SepalWidthCm      3.00
PetalLengthCm     4.35
PetalWidthCm      1.30
dtype: float64
```

In [8]:
```
sp.loc[:,'SepalWidthCm'].median()
```

Out[8]:
```
3.0
```

In [9]:
```
sp.loc[:,'Id'].median()
```

Out[9]:
```
75.5
```

In [10]:
```
sp.median(axis=1)[0:6]
```

Out[10]:
```
0    1.4
1    2.0
2    3.0
3    3.1
4    3.6
5    3.9
dtype: float64
```

In [11]:
```
sp.median(axis=0)[0:6]
```

Out[11]:
```
Id               75.50
SepalLengthCm     5.80
SepalWidthCm      3.00
PetalLengthCm     4.35
PetalWidthCm      1.30
dtype: float64
```

In [12]:
```
sp.mode()
```

Out[12]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.0	3.0	1.5	0.2	Iris-setosa
1	2	NaN	NaN	NaN	NaN	Iris-versicolor
2	3	NaN	NaN	NaN	NaN	Iris-virginica
3	4	NaN	NaN	NaN	NaN	NaN
4	5	NaN	NaN	NaN	NaN	NaN
...	...	...	...	...	...	...
145	146	NaN	NaN	NaN	NaN	NaN
146	147	NaN	NaN	NaN	NaN	NaN
147	148	NaN	NaN	NaN	NaN	NaN
148	149	NaN	NaN	NaN	NaN	NaN
149	150	NaN	NaN	NaN	NaN	NaN

150 rows × 6 columns

In [13]:
```
sp.loc[:,'PetalLengthCm'].mode()
```

Out[13]:
```
0    1.5
Name: PetalLengthCm, dtype: float64
```

In [14]:
```
sp.min()
```

Out[14]:
```
Id                        1
SepalLengthCm           4.3
SepalWidthCm            2.0
PetalLengthCm           1.0
PetalWidthCm            0.1
Species         Iris-setosa
dtype: object
```

In [15]:
```
sp.max()
```

Out[15]:
```
Id                      150
SepalLengthCm           7.9
SepalWidthCm            4.4
PetalLengthCm           6.9
PetalWidthCm            2.5
Species         Iris-virginica
dtype: object
```

In [16]:
```
sp.std()
```

Out[16]:
```
Id               43.445368
SepalLengthCm     0.828066
SepalWidthCm      0.433594
PetalLengthCm     1.764420
PetalWidthCm      0.763161
dtype: float64
```

In [17]:
```
sp.loc[:,'SepalWidthCm'].std()
```

Out[17]:
```
0.4335943113621737
```

In [18]:
```
sp.std(axis=0)[0:7]
```

Out[18]:
```
Id               43.445368
SepalLengthCm     0.828066
SepalWidthCm      0.433594
PetalLengthCm     1.764420
PetalWidthCm      0.763161
dtype: float64
```

In [19]:
```
sp.std(axis=1)[7:2]
```

Out[19]:
```
Series([], dtype: float64)
```

In [20]:
```
sp.groupby(['Id'])['SepalLengthCm'].mean()
```

Out[20]:
```
Id
1      5.1
2      4.9
3      4.7
4      4.6
5      5.0
      ...
146    6.7
147    6.3
148    6.5
149    6.2
150    5.9
Name: SepalLengthCm, Length: 150, dtype: float64
```

In [21]:
```
sp_u=sp.rename(columns= {'PetalLengthCm':'PetalWidthCm'},inplace=False)
```

In [22]:
```
sp_u.groupby(['SepalWidthCm']).PetalWidthCm.mean()
```

Out[22]:

SepalWidthCm	PetalWidthCm	PetalWidthCm
2.0	3.500000	1.000000
2.2	4.500000	1.333333
2.3	3.250000	0.975000
2.4	3.600000	1.033333
2.5	4.512500	1.550000
2.6	4.880000	1.420000
2.7	4.622222	1.555556
2.8	5.042857	1.707143
2.9	4.350000	1.320000
3.0	4.234615	1.403846
3.1	3.600000	1.141667
3.2	3.753846	1.261538
3.3	4.200000	1.566667
3.4	2.466667	0.716667
3.5	1.416667	0.300000
3.6	2.833333	0.966667
3.7	1.500000	0.266667
3.8	3.300000	0.900000
3.9	1.500000	0.400000
4.0	1.200000	0.200000
4.1	1.500000	0.100000
4.2	1.400000	0.200000
4.4	1.500000	0.400000

In [ ]: