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Write a Python program to display some basic statistical details like percentile, mean, standard deviation etc. of the species of ‘Iris-setosa’, ‘Iris-versicolor’ and ‘Iris versicolor’ of iris.csv dataset.

```
import pandas as pd
```

```
from sklearn import datasets
```

```
iris=datasets. load_iris()
```

```
iris
```

```
{'data': array([[5.1, 3.5, 1.4, 0.2],
            [4.9, 3. , 1.4, 0.2],
            [4.7, 3.2, 1.3, 0.2],
            [4.6, 3.1, 1.5, 0.2],
            [5. , 3.6, 1.4, 0.2],
            [5.4, 3.9, 1.7, 0.4],
            [4.6, 3.4, 1.4, 0.3],
            [5. , 3.4, 1.5, 0.2],
            [4.4, 2.9, 1.4, 0.2],
            [4.9, 3.1, 1.5, 0.1],
            [5.4, 3.7, 1.5, 0.2],
            [4.8, 3.4, 1.6, 0.2],
            [4.8, 3. , 1.4, 0.1],
            [4.3, 3. , 1.1, 0.1],
            [5.8, 4. , 1.2, 0.2],
            [5.7, 4.4, 1.5, 0.4],
            [5.4, 3.9, 1.3, 0.4],
            [5.1, 3.5, 1.4, 0.3],
            [5.7, 3.8, 1.7, 0.3],
            [5.1, 3.8, 1.5, 0.3],
            [5.4, 3.4, 1.7, 0.2],
            [5.1, 3.7, 1.5, 0.4],
            [4.6, 3.6, 1. , 0.2],
            [5.1, 3.3, 1.7, 0.5],
            [4.8, 3.4, 1.9, 0.2],
            [5. , 3. , 1.6, 0.2],
            [5. , 3.4, 1.6, 0.4],
            [5.2, 3.5, 1.5, 0.2],
            [5.2, 3.4, 1.4, 0.2],
            [4.7, 3.2, 1.6, 0.2],
            [4.8, 3.1, 1.6, 0.2],
            [5.4, 3.4, 1.5, 0.4],
            [5.2, 4.1, 1.5, 0.1],
            [5.5, 4.2, 1.4, 0.2],
            [4.9, 3.1, 1.5, 0.2],
            [5. , 3.2, 1.2, 0.2],
            [5.5, 3.5, 1.3, 0.2],
            [4.9, 3.6, 1.4, 0.1],
            [4.4, 3. , 1.3, 0.2],
            [5.1, 3.4, 1.5, 0.2],
            [5. , 3.5, 1.3, 0.3],
            [4.5, 2.3, 1.3, 0.3],
            [4.4, 3.2, 1.3, 0.2],
            [5. , 3.5, 1.6, 0.6],
            [5.1, 3.8, 1.9, 0.4],
            [4.8, 3. , 1.4, 0.3],
            [5.1, 3.8, 1.6, 0.2],
            [4.6, 3.2, 1.4, 0.2],
            [5.3, 3.7, 1.5, 0.2],
            [5. , 3.3, 1.4, 0.2],
            [7. , 3.2, 4.7, 1.4],
            [6.4, 3.2, 4.5, 1.5],
            [6.9, 3.1, 4.9, 1.5],
            [5.5, 2.3, 4. , 1.3],
            [6.5, 2.8, 4.6, 1.5],
            [5.7, 2.8, 4.5, 1.3],
            [6.3, 3.3, 4.7, 1.6],
            [4.9, 2.4, 3.3, 1. ],
```

```
df=pd.DataFrame(iris["data"])
```

```
df.head()
```

	0	1	2	3
0	5.1	3.5	1.4	0.2
1	4.9	3.0	1.4	0.2
2	4.7	3.2	1.3	0.2
3	4.6	3.1	1.5	0.2
4	5.0	3.6	1.4	0.2

```
df[4]=iris["target"]
```

```
df.head()
```

	0	1	2	3	4
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5.0	3.6	1.4	0.2	0

```
df.rename(columns={0:"SepalLengthcm" ,1:"Sepalwidthcm" ,2:"PetalLengthcm",3:"Petalwidthcm",4:"Species"},inplace=True)
```

```
df.head()
```

	SepalLengthcm	Sepalwidthcm	PetalLengthcm	Petalwidthcm	Species
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5.0	3.6	1.4	0.2	0

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 5 columns):
 #   Column         Non-Null Count  Dtype  
---  ------         --------------  -----  
 0   SepalLengthcm  150 non-null    float64
 1   Sepalwidthcm   150 non-null    float64
 2   PetalLengthcm  150 non-null    float64
 3   Petalwidthcm   150 non-null    float64
 4   Species        150 non-null    int64  
dtypes: float64(4), int64(1)
memory usage: 6.0 KB
```

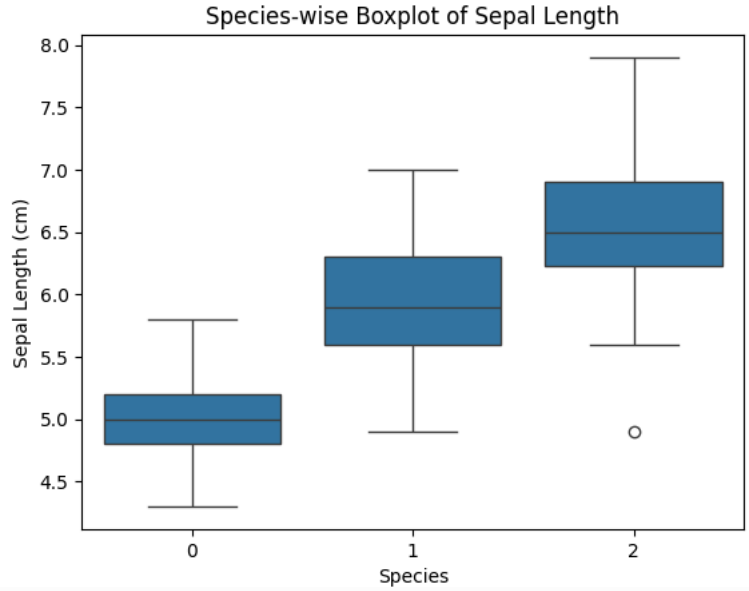
```
df.describe()
```

	SepalLengthcm	Sepalwidthcm	PetalLengthcm	Petalwidthcm	Species
count	150.000000	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.057333	3.758000	1.199333	1.000000
std	0.828066	0.435866	1.765298	0.762238	0.819232
min	4.300000	2.000000	1.000000	0.100000	0.000000
25%	5.100000	2.800000	1.600000	0.300000	0.000000
50%	5.800000	3.000000	4.350000	1.300000	1.000000
75%	6.400000	3.300000	5.100000	1.800000	2.000000
max	7.900000	4.400000	6.900000	2.500000	2.000000

Visualize the Data

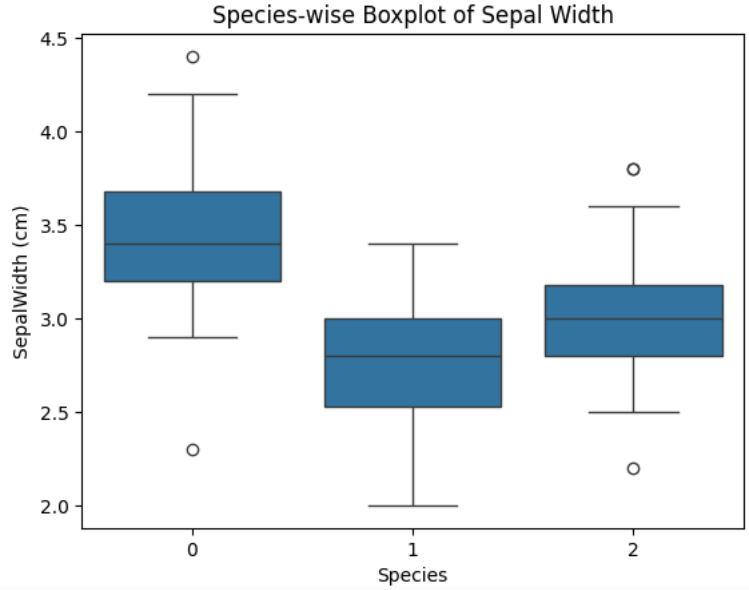
```
import seaborn as sns
import matplotlib.pyplot as plt


sns.boxplot(x="Species", y="SepalLengthcm", data=df)
plt.xlabel("Species")
plt.ylabel("Sepal Length (cm)")
plt.title("Species-wise Boxplot of Sepal Length")
```

```
Text(0.5, 1.0, 'Species-wise Boxplot of Sepal Length')
```



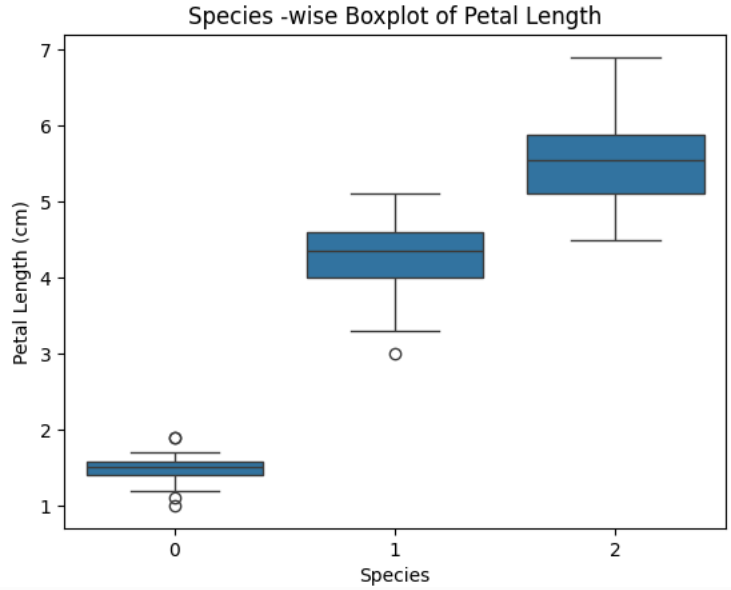

```
sns.boxplot(x="Species", y="Sepalwidthcm", data=df)
plt.xlabel("Species")
plt.ylabel("SepalWidth (cm)")
plt.title("Species-wise Boxplot of Sepal Width")
```

```
Text(0.5, 1.0, 'Species-wise Boxplot of Sepal Width')
```



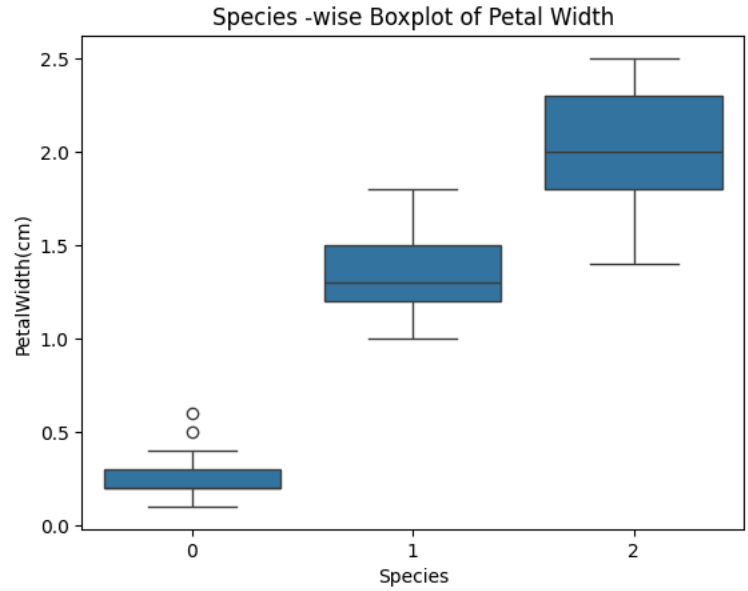

```
sns.boxplot(x="Species", y='PetalLengthcm', data=df)
plt.xlabel("Species")
plt.ylabel("Petal Length (cm)")
plt.title("Species -wise Boxplot of Petal Length")
```

```
Text(0.5, 1.0, 'Species -wise Boxplot of Petal Length')
```




```
sns.boxplot(x="Species", y='Petalwidthcm', data=df)
plt.xlabel("Species")
plt.ylabel("PetalWidth(cm)")
plt.title("Species -wise Boxplot of Petal Width")
```

```
Text(0.5, 1.0, 'Species -wise Boxplot of Petal Width')
```




```
df.shape
```

```
(150, 5)
```

```
df.mean()
```

	0
SepalLengthcm	5.843333
Sepalwidthcm	3.057333
PetalLengthcm	3.758000
Petalwidthcm	1.199333
Species	1.000000

dtype: float64

```
df.groupby("Species").mean()
```

Species	SepalLengthcm	Sepalwidthcm	PetalLengthcm	Petalwidthcm
0	5.006	3.428	1.462	0.246
1	5.936	2.770	4.260	1.326
2	6.588	2.974	5.552	2.026

```
df.median()
```

	0
SepalLengthcm	5.80
Sepalwidthcm	3.00
PetalLengthcm	4.35
Petalwidthcm	1.30
Species	1.00

dtype: float64

```
df.groupby("Species").median()
```

Species	SepalLengthcm	Sepalwidthcm	PetalLengthcm	Petalwidthcm
0	5.0	3.4	1.50	0.2
1	5.9	2.8	4.35	1.3
2	6.5	3.0	5.55	2.0

```
df.Species.mode()
```

	Species
0	0
1	1
2	2

dtype: int64

```
df.groupby("Species").count()
```

Species	SepalLengthcm	Sepalwidthcm	PetalLengthcm	Petalwidthcm
0	50	50	50	50
1	50	50	50	50
2	50	50	50	50

```
df.SepalLengthcm.std()
```

```
0.8280661279778629
```

```
df.Sepalwidthcm.std()
```

```
0.435866284936698
```

```
df.PetalLengthcm.std()
```

```
1.7652982332594667
```

```
df.Petalwidthcm.std()
```

```
0.7622376689603465
```

```
df.quantile(0.25)
```

	0.25
SepalLengthcm	5.1
Sepalwidthcm	2.8
PetalLengthcm	1.6
Petalwidthcm	0.3
Species	0.0

dtype: float64

```
df.quantile(0.75)
```

	0.75
SepalLengthcm	6.4
Sepalwidthcm	3.3
PetalLengthcm	5.1
Petalwidthcm	1.8
Species	2.0

dtype: float64

Start coding or generate with AI.