

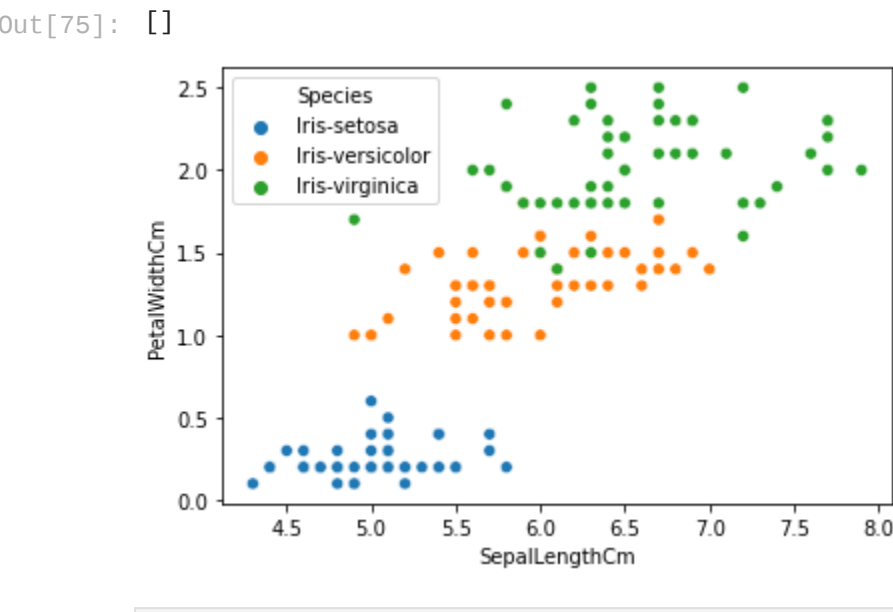
TASK 3

```
In [88]: # importing packages
import pandas as pd
import matplotlib.pyplot as plt
from sklearn import preprocessing
import seaborn as sns

# loading data
iris = pd.read_csv("iris.csv")
print(iris.head())
```

	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

```
In [75]: sns.scatterplot(data=iris, x='SepalLengthCm',
                        y='PetalWidthCm', hue='Species')
plt.plot()
```



```
In [76]: df.head(10)
```

Out[76]:

	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
6	7	4.6	3.4	1.4	0.3	Iris-setosa
7	8	5.0	3.4	1.5	0.2	Iris-setosa
8	9	4.4	2.9	1.4	0.2	Iris-setosa
9	10	4.9	3.1	1.5	0.1	Iris-setosa

```
In [77]: df.tail(10)
```

Out[77]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
140	141	6.7	3.1	5.6	2.4	Iris-virginica
141	142	6.9	3.1	5.1	2.3	Iris-virginica
142	143	5.8	2.7	5.1	1.9	Iris-virginica
143	144	6.8	3.2	5.9	2.3	Iris-virginica
144	145	6.7	3.3	5.7	2.5	Iris-virginica
145	146	6.7	3.0	5.2	2.3	Iris-virginica
146	147	6.3	2.5	5.0	1.9	Iris-virginica
147	148	6.5	3.0	5.2	2.0	Iris-virginica
148	149	6.2	3.4	5.4	2.3	Iris-virginica
149	150	5.9	3.0	5.1	1.8	Iris-virginica

```
In [78]: df.isnull()
```

Out[78]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	False	False	False	False	False	False
1	False	False	False	False	False	False
2	False	False	False	False	False	False
3	False	False	False	False	False	False
4	False	False	False	False	False	False
...
145	False	False	False	False	False	False
146	False	False	False	False	False	False
147	False	False	False	False	False	False
148	False	False	False	False	False	False
149	False	False	False	False	False	False

150 rows × 6 columns

```
In [79]: df.shape
```

Out[79]: (150, 6)

```
In [80]: df.describe()
```

Out[80]:

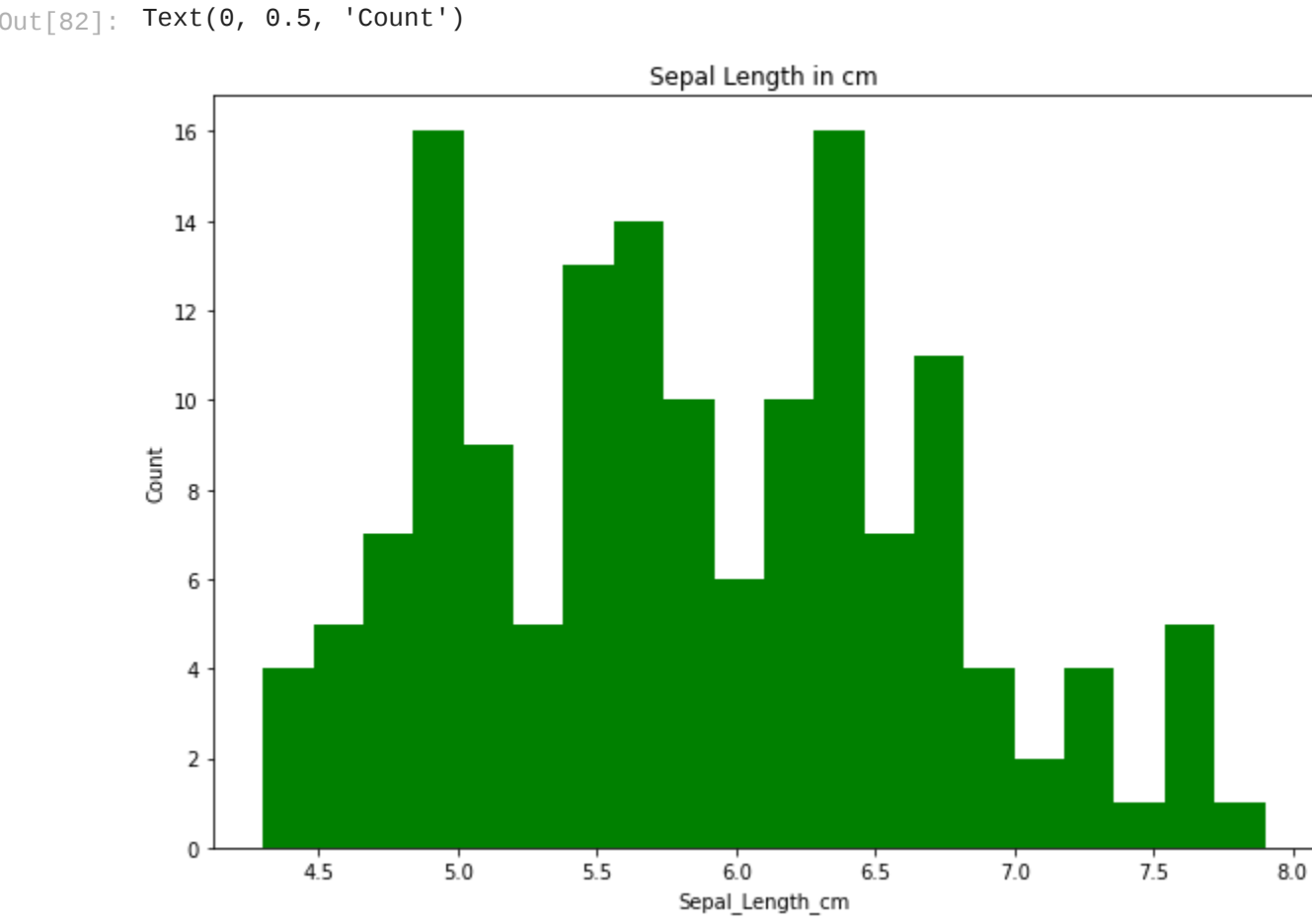
	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm
count	150.000000	150.000000	150.000000	150.000000	150.000000
mean	75.500000	5.843333	3.054000	3.758667	1.198667
std	43.445368	0.828066	0.433594	1.764420	0.763161
min	1.000000	4.300000	2.000000	1.000000	0.100000
25%	38.250000	5.100000	2.800000	1.600000	0.300000
50%	75.500000	5.800000	3.000000	4.350000	1.300000
75%	112.750000	6.400000	3.300000	5.100000	1.800000
max	150.000000	7.900000	4.400000	6.900000	2.500000

```
In [81]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 6 columns):
#   Column                Non-Null Count  Dtype
---  ---
0    Id                    150 non-null    int64
1    SepalLengthCm         150 non-null    float64
2    SepalWidthCm          150 non-null    float64
3    PetalLengthCm         150 non-null    float64
4    PetalWidthCm          150 non-null    float64
5    Species               150 non-null    object
dtypes: float64(4), int64(1), object(1)
memory usage: 7.2+ KB
```

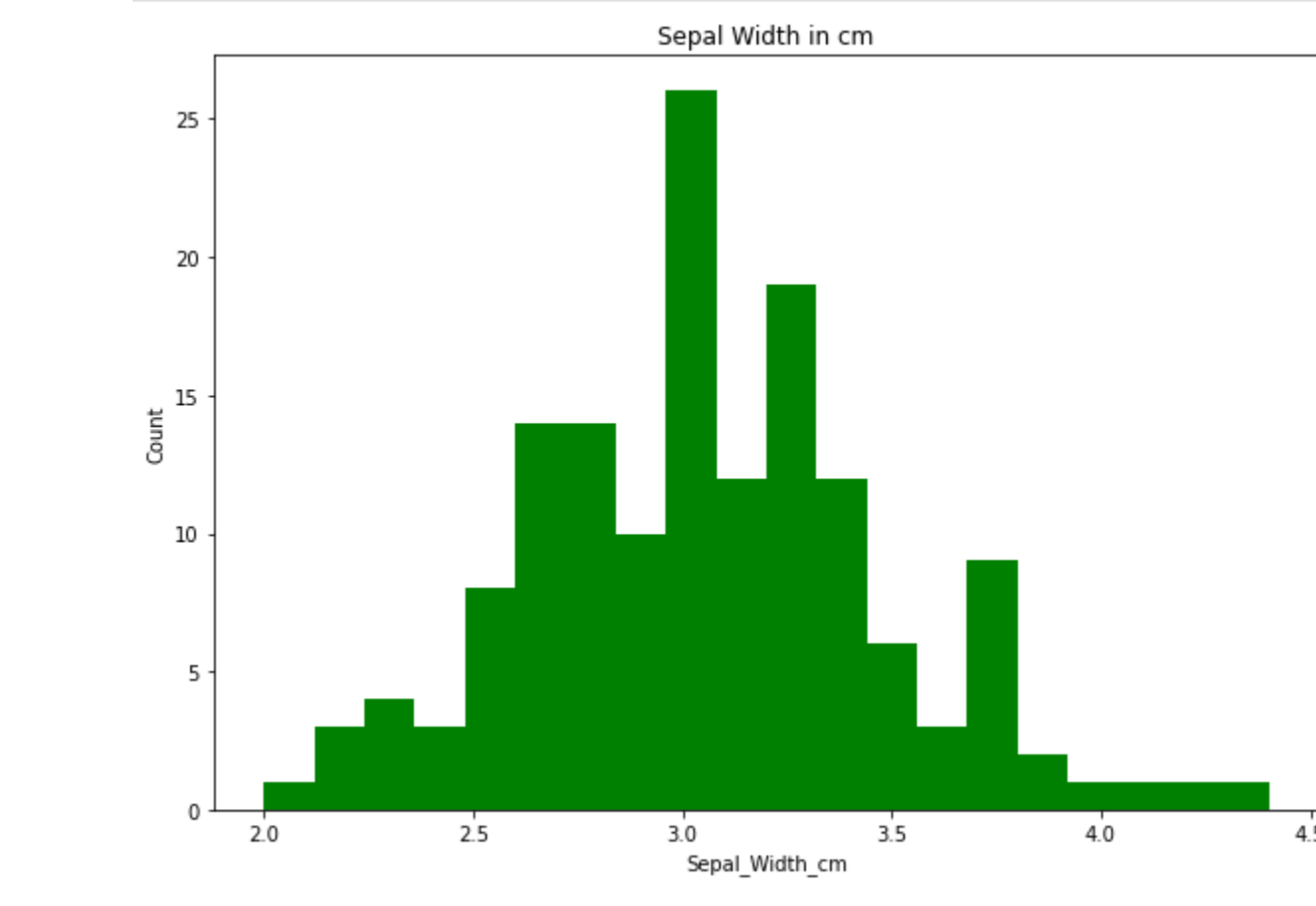
```
In [82]: plt.figure(figsize = (10, 7))
x = df["SepalLengthCm"]

plt.hist(x, bins = 20, color = "green")
plt.title("Sepal Length in cm")
plt.xlabel("Sepal_Length_cm")
plt.ylabel("Count")
```



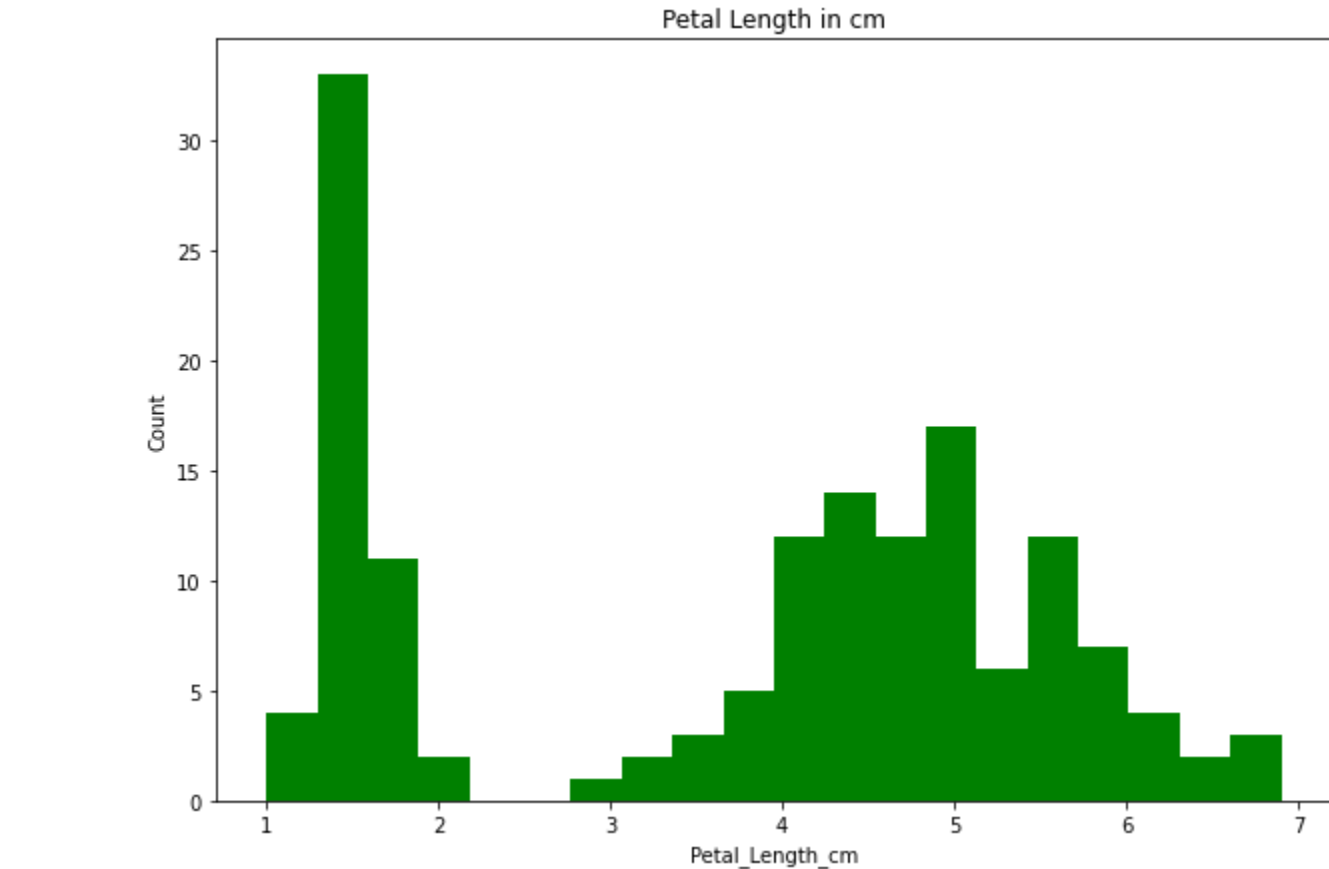
```
In [83]: plt.figure(figsize = (10, 7))
x = df.SepalWidthCm

plt.hist(x, bins = 20, color = "green")
plt.title("Sepal Width in cm")
plt.xlabel("Sepal_Width_cm")
plt.ylabel("Count")
plt.show()
```



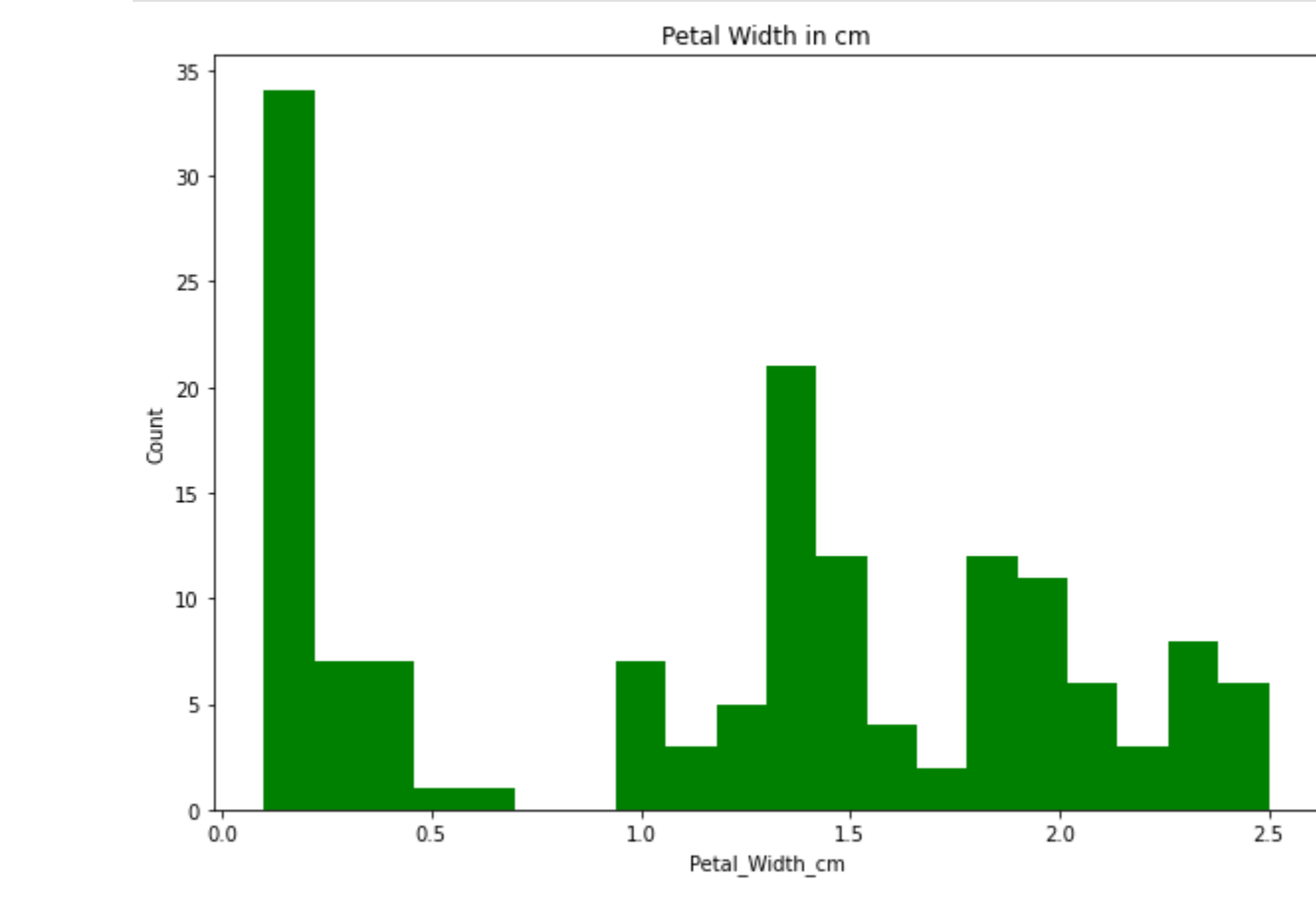
```
In [84]: plt.figure(figsize = (10, 7))
x = df.PetalLengthCm

plt.hist(x, bins = 20, color = "green")
plt.title("Petal Length in cm")
plt.xlabel("Petal_Length_cm")
plt.ylabel("Count")
plt.show()
```



```
In [85]: plt.figure(figsize = (10, 7))
x = df.PetalWidthCm

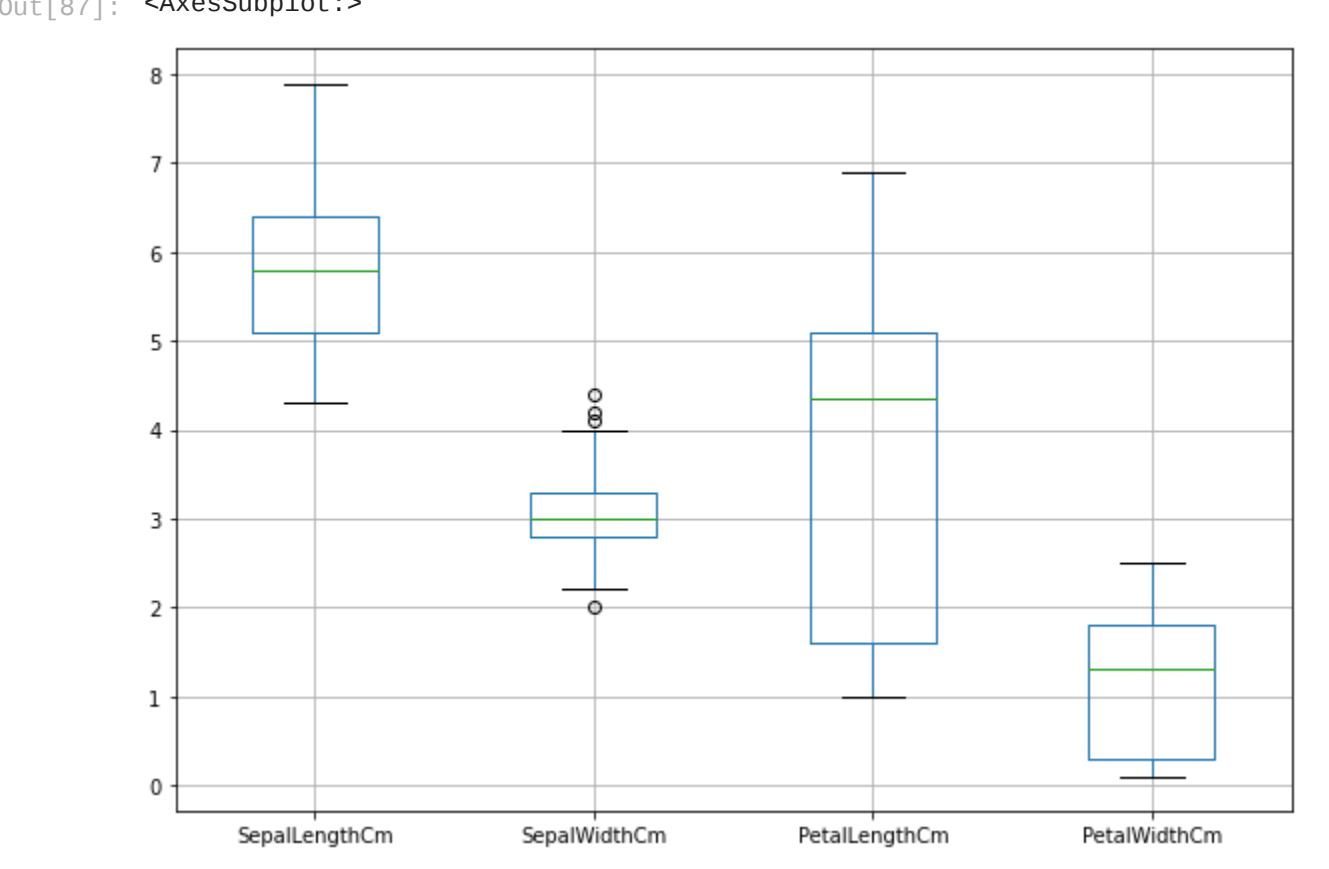
plt.hist(x, bins = 20, color = "green")
plt.title("Petal Width in cm")
plt.xlabel("Petal_Width_cm")
plt.ylabel("Count")
plt.show()
```



```
In [86]: new_data = df[["SepalLengthCm", "SepalWidthCm", "PetalLengthCm", "PetalWidthCm"]]
print(new_data.head())
```

	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm
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

```
In [87]: plt.figure(figsize = (10, 7))
new_data.boxplot()
```



```
In [ ]:
```

```
In [ ]:
```