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

In [2]:
```
df=pd.read_csv("Iris.csv")
df.head()
```

Out[2]:

	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 [3]:
```
df.describe()
```

Out[3]:

	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 [4]:
```
df.shape
```

Out[4]:
```
(150, 6)
```

In [5]:
```
df.isna().sum()
```

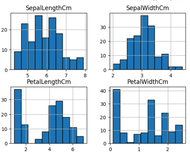
Out[5]:
```
Id               0
SepalLengthCm    0
SepalWidthCm     0
PetalLengthCm    0
PetalWidthCm     0
Species          0
dtype: int64
```

In [6]:
```
df=df.drop(columns="Id",axis=1)
print(df.head())
```

```
   SepalLengthCm  SepalWidthCm  PetalLengthCm  PetalWidthCm      Species
0            5.1           3.5            1.4           0.2  Iris-setosa
1            4.9           3.0            1.4           0.2  Iris-setosa
2            4.7           3.2            1.3           0.2  Iris-setosa
3            4.6           3.1            1.5           0.2  Iris-setosa
4            5.0           3.6            1.4           0.2  Iris-setosa
```

In [7]:
```
df.hist(edgecolor="black")
```

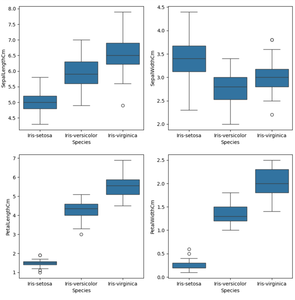
Out[7]:
```
array([[<Axes: title={'center': 'SepalLengthCm'}>,
        <Axes: title={'center': 'SepalWidthCm'}>],
       [<Axes: title={'center': 'PetalLengthCm'}>,
        <Axes: title={'center': 'PetalWidthCm'}>]], dtype=object)
```



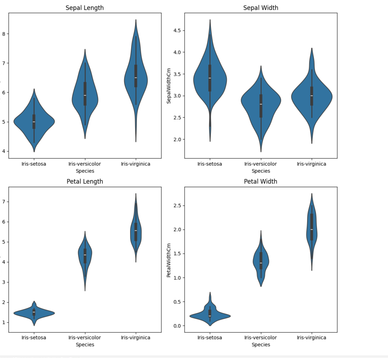
In [8]:
```
df["Species"].value_counts()
```

Out[8]:
```
Species
Iris-setosa        50
Iris-versicolor    50
Iris-virginica     50
Name: count, dtype: int64
```

In [9]:
```
plt.figure(figsize=(10,10))
plt.subplot(221)
sns.boxplot(data=df,x="Species",y="SepalLengthCm")

plt.subplot(222)
sns.boxplot(data=df,x="Species",y="SepalWidthCm")

plt.subplot(223)
sns.boxplot(data=df,x="Species",y="PetalLengthCm")

plt.subplot(224)
sns.boxplot(data=df,x="Species",y="PetalWidthCm")

plt.show()
```



In [10]:
```
plt.figure(figsize=(10,10))

plt.subplot(221)
sns.violinplot(data=df, x="Species", y="SepalLengthCm")
plt.title("Sepal Length")

plt.subplot(222)
sns.violinplot(data=df, x="Species", y="SepalWidthCm")
plt.title("Sepal Width")

plt.subplot(223)
sns.violinplot(data=df, x="Species", y="PetalLengthCm")
plt.title("Petal Length")

plt.subplot(224)
sns.violinplot(data=df, x="Species", y="PetalWidthCm")
plt.title("Petal Width")

plt.tight_layout()
plt.show()
```



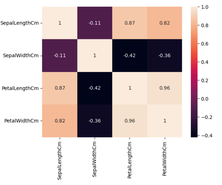
In [11]:
```
corr=df.corr(numeric_only=True)
corr
```

Out[29]:

	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm
SepalLengthCm	1.000000	-0.109369	0.871754	0.817954
SepalWidthCm	-0.109369	1.000000	-0.420516	-0.356544
PetalLengthCm	0.871754	-0.420516	1.000000	0.962757
PetalWidthCm	0.817954	-0.356544	0.962757	1.000000

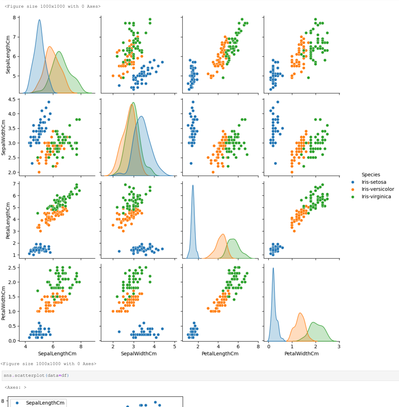
In [12]:
```
sns.heatmap(data=corr, annot=True)
```

Out[31]:
```
<Axes: >
```



In [13]:
```
sns.pairplot(data=df,hue="Species")
plt.figure(figsize=(15,10))
```

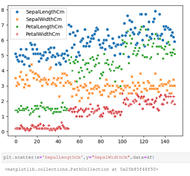
Out[29]:
```
<Figure size 1000x1000 with 0 Axes>
```




```
<Figure size 1000x1000 with 0 Axes>
```

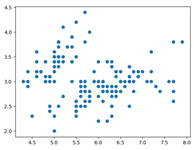
In [14]:
```
sns.scatterplot(data=df)
```

Out[41]:
```
<Axes: >
```



In [15]:
```
plt.scatter(x="SepalLengthCm",y="SepalWidthCm",data=df)
```

Out[43]:
```
<matplotlib.collections.PathCollection at 0x27b85f48850>
```


4.5
4.0
3.5
3.0
2.5
2.0
4.5
5.0
5.5
6.0
6.5
7.0
7.5
8.0