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

df = pd.read_csv(r"C:\Users\ADMIN\Downloads\archive (3)\Iris.csv")  # Replace with your file path

df.value_counts()
```

```
Id   SepalLengthCm  SepalWidthCm  PetalLengthCm  PetalWidthCm  Species

1    5.1            3.5           1.4            0.2           Iris-setosa        1
95   5.6            2.7           4.2            1.3           Iris-versicolor    1
97   5.7            2.9           4.2            1.3           Iris-versicolor    1
98   6.2            2.9           4.3            1.3           Iris-versicolor    1
99   5.1            2.5           3.0            1.1           Iris-versicolor    1

..
51   7.0            3.2           4.7            1.4           Iris-versicolor    1
52   6.4            3.2           4.5            1.5           Iris-versicolor    1
53   6.9            3.1           4.9            1.5           Iris-versicolor    1
54   5.5            2.3           4.0            1.3           Iris-versicolor    1
150  5.9            3.0           5.1            1.8           Iris-virginica     1
Name: count, Length: 150, dtype: int64
```

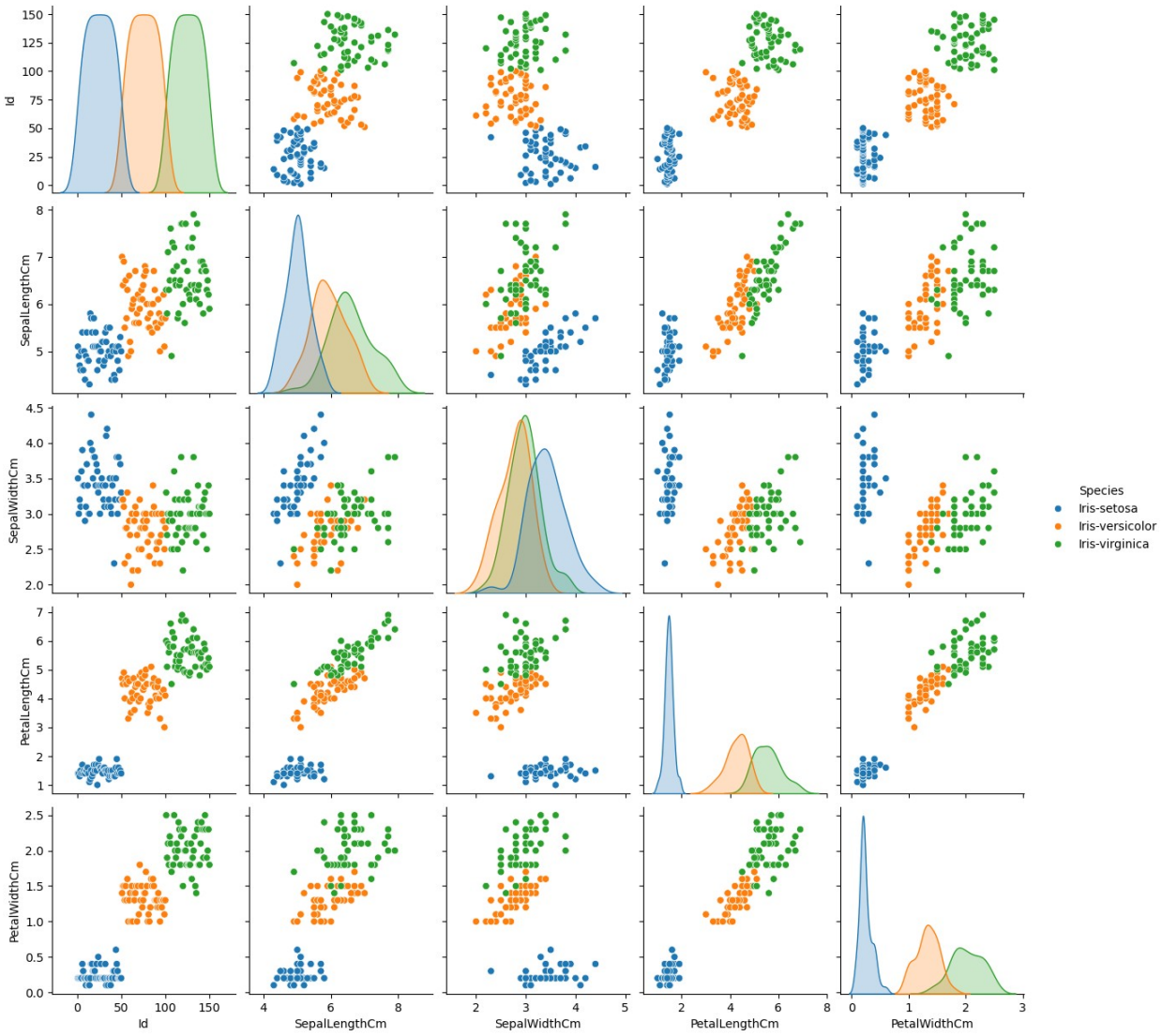
```
df.info()
```

```
<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
```

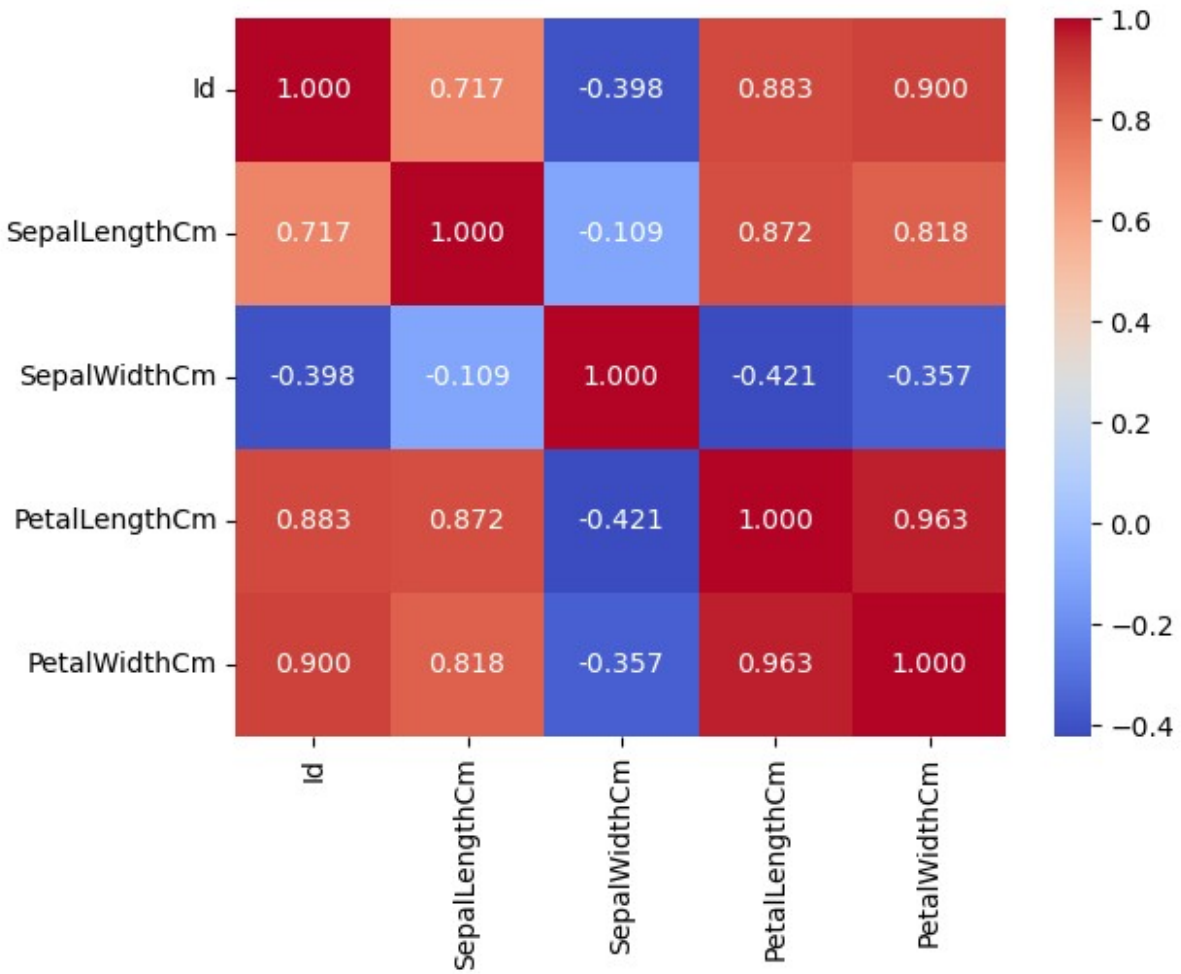
```
df.describe()
```

```
                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
```

```
sns.pairplot(df, hue='Species')
plt.show()
```




```
# Select only numeric columns
numeric_df = df.select_dtypes(include='number')
corr = numeric_df.corr()
sns.heatmap(corr, annot=True, cmap='coolwarm', fmt=".3f")
plt.show()
```

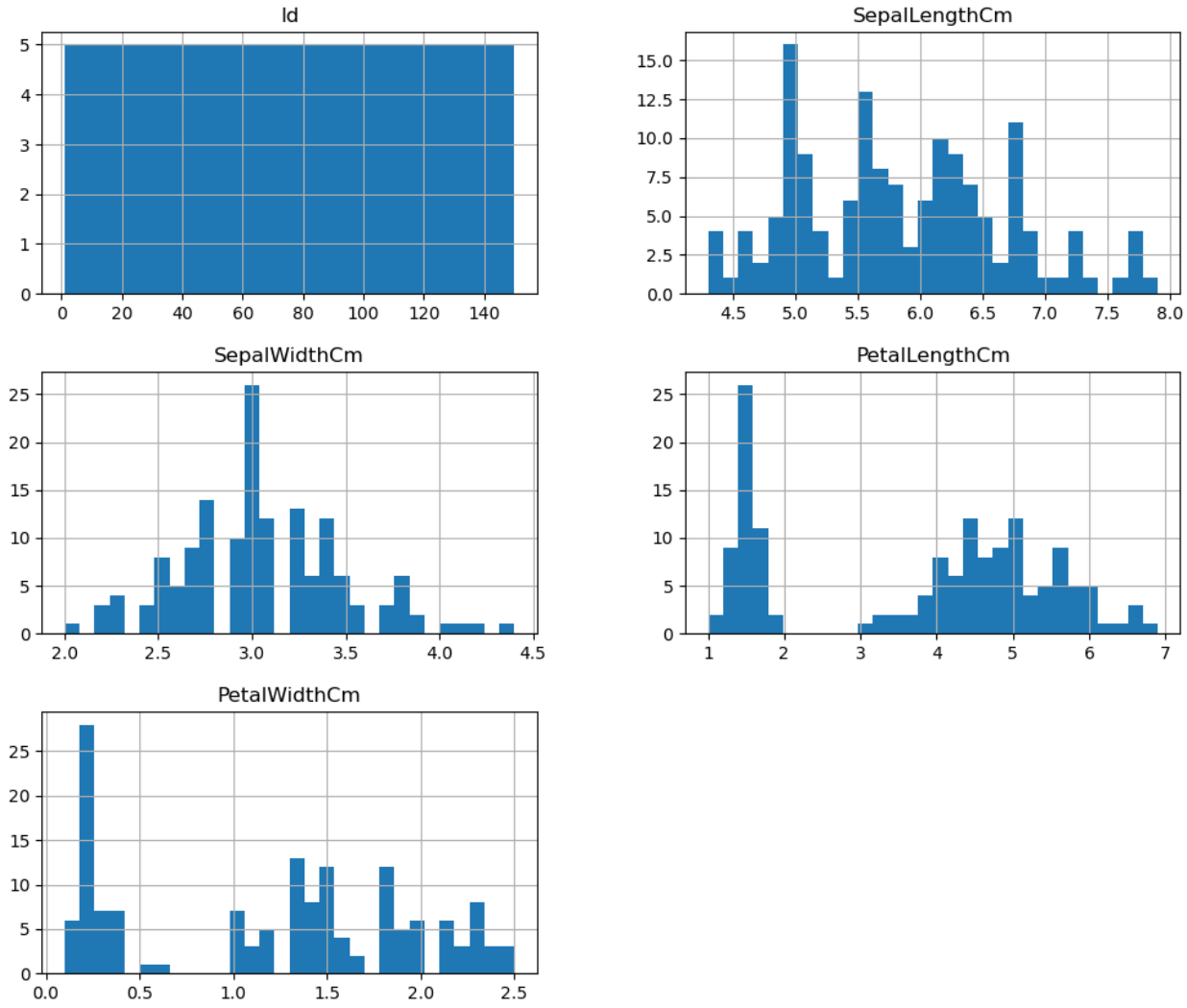



```
numeric_df.skew()

Id               0.000000
SepalLengthCm    0.314911
SepalWidthCm     0.334053
PetalLengthCm   -0.274464
PetalWidthCm    -0.104997
dtype: float64

df.describe()

                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
```

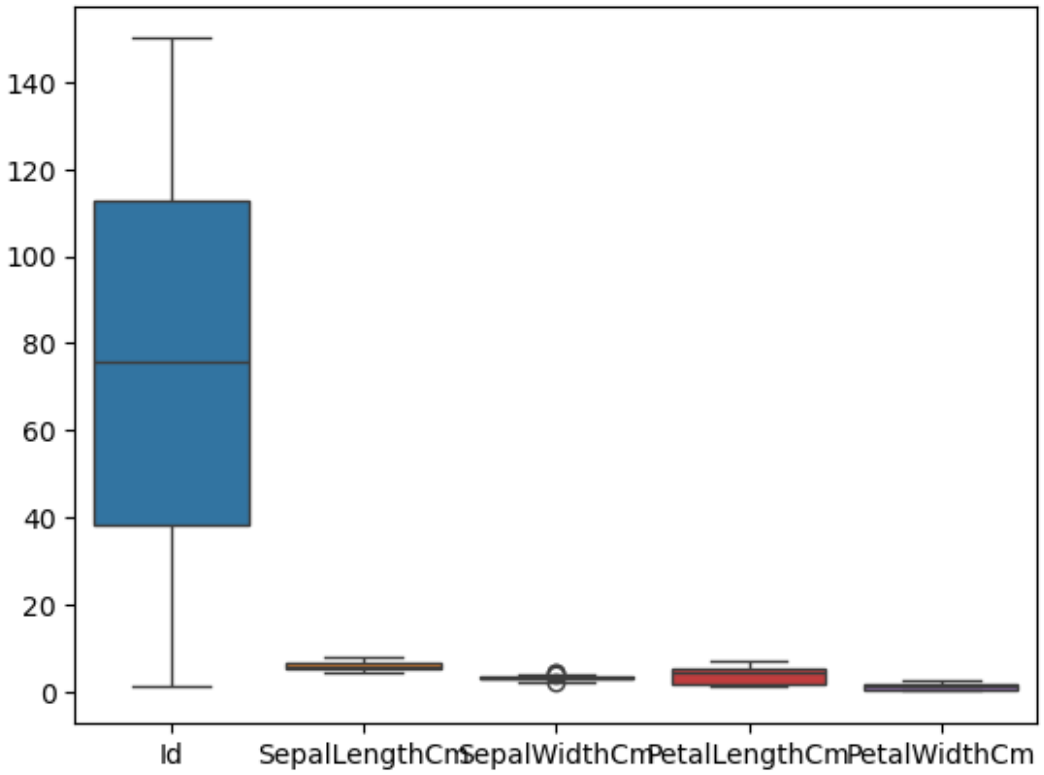
```
0.100000
25%     38.250000        5.100000       2.800000        1.600000
0.300000
50%     75.500000        5.800000       3.000000        4.350000
1.300000
75%    112.750000        6.400000       3.300000        5.100000
1.800000
max    150.000000        7.900000       4.400000        6.900000
2.500000
```

```
df.hist(figsize=(12, 10), bins=30)
```

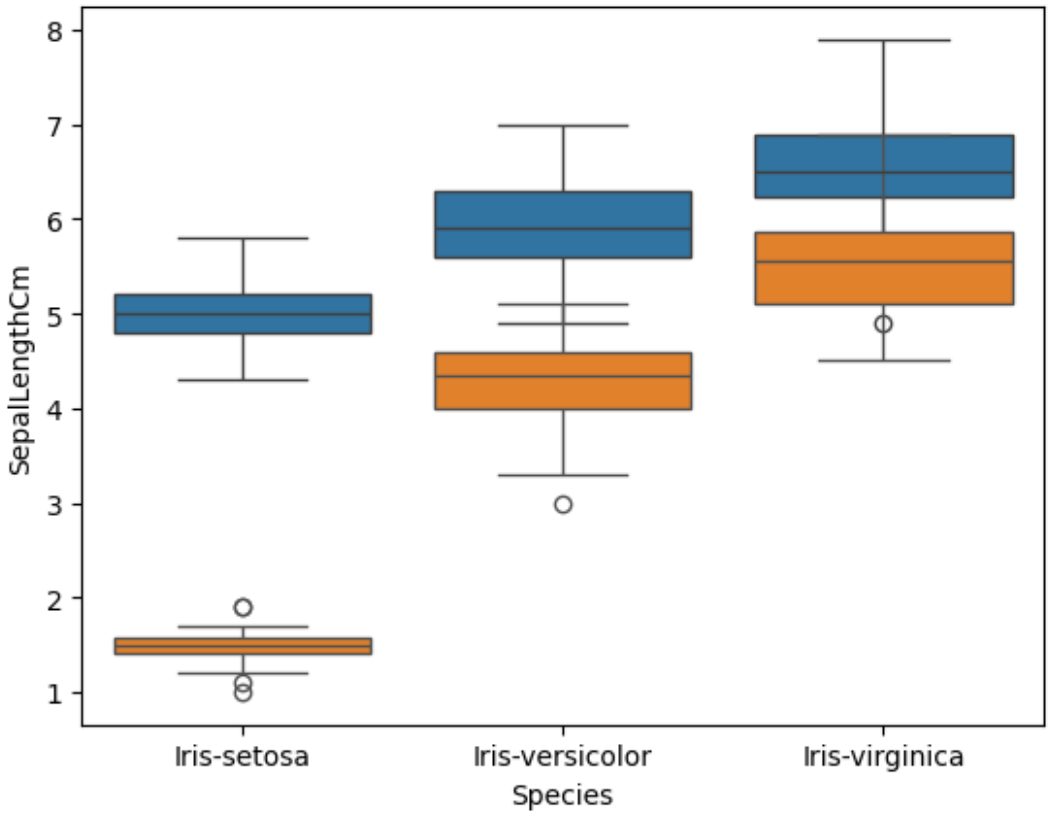
```
array([[<Axes: title={'center': 'Id'}>,
        <Axes: title={'center': 'SepalLengthCm'}>],
       [<Axes: title={'center': 'SepalWidthCm'}>,
        <Axes: title={'center': 'PetalLengthCm'}>],
       [<Axes: title={'center': 'PetalWidthCm'}>, <Axes: >]],
dtype=object)
```



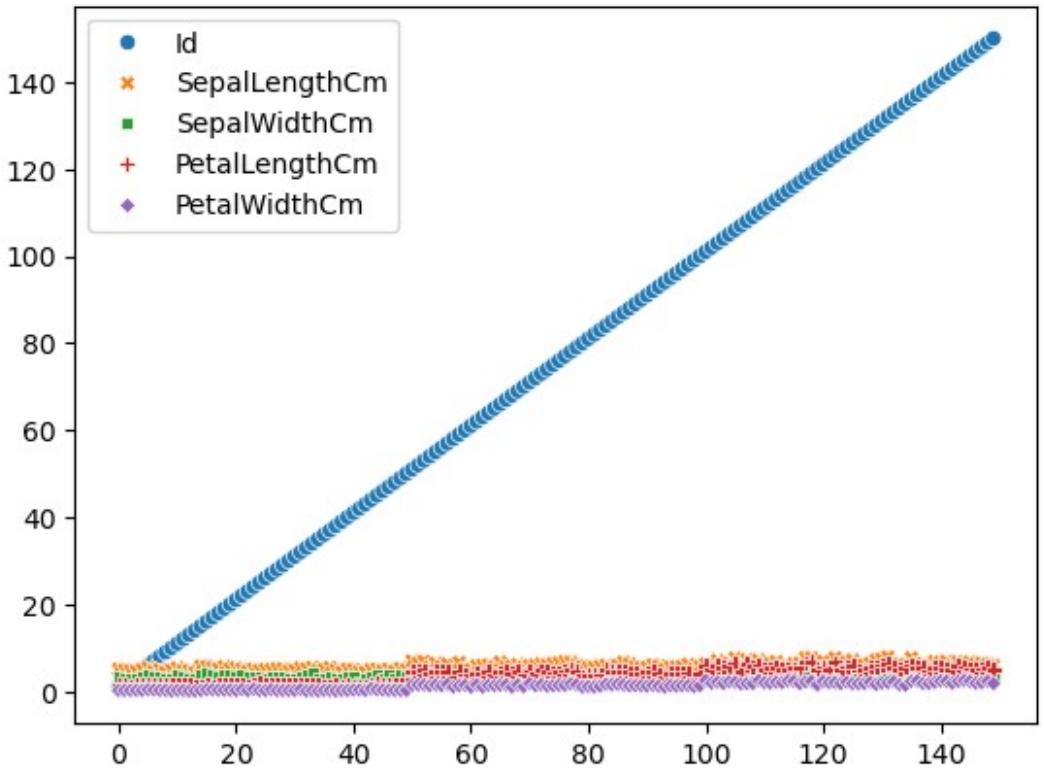
```
sns.boxplot(df)
plt.show()
```



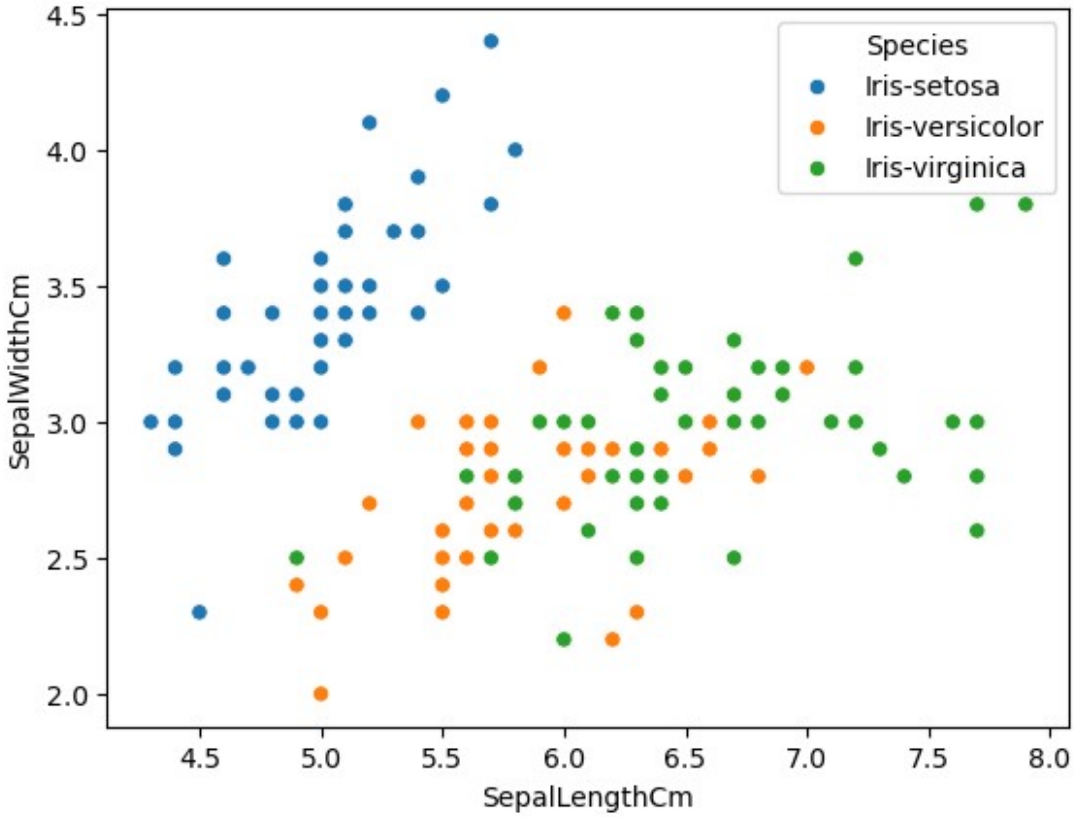

```
sns.boxplot(x='Species', y='SepalLengthCm', data=df)
sns.boxplot(x='Species', y='PetalLengthCm', data=df)
plt.show()
```




```
sns.scatterplot(df)
plt.show()
```




```
sns.scatterplot(x='SepalLengthCm', y='SepalWidthCm', hue='Species',
data=df)
plt.show()
```


Species
Iris-setosa
Iris-versicolor
Iris-virginica
SepalWidthCm
SepalLengthCm
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