IRIS Flower

```
import numpy as np
import pandas as pd
import seaborn as sb
import matplotlib.pyplot as plt

df=pd.read_csv('Iris.csv')

df
```

```
     sepal_length  sepal_width  petal_length  petal_width
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
..            ...          ...           ...          ...
...
145           6.7          3.0           5.2          2.3  Iris-
virginica
146           6.3          2.5           5.0          1.9  Iris-
virginica
147           6.5          3.0           5.2          2.0  Iris-
virginica
148           6.2          3.4           5.4          2.3  Iris-
virginica
149           5.9          3.0           5.1          1.8  Iris-
virginica

[150 rows x 5 columns]
```

```
df.head(2)
```

```
   sepal_length  sepal_width  petal_length  petal_width      species
0           5.1          3.5           1.4          0.2  Iris-setosa
1           4.9          3.0           1.4          0.2  Iris-setosa
```

```
df.tail(2)
```

```
     sepal_length  sepal_width  petal_length  petal_width
species
148           6.2          3.4           5.4          2.3  Iris-
```

```
virginica
149          5.9          3.0           5.1          1.8  Iris-
virginica
```

```
df.describe()
```

```
       sepal_length  sepal_width  petal_length  petal_width
count    150.000000   150.000000    150.000000   150.000000
mean       5.843333     3.054000      3.758667     1.198667
std        0.828066     0.433594      1.764420     0.763161
min        4.300000     2.000000      1.000000     0.100000
25%        5.100000     2.800000      1.600000     0.300000
50%        5.800000     3.000000      4.350000     1.300000
75%        6.400000     3.300000      5.100000     1.800000
max        7.900000     4.400000      6.900000     2.500000
```

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 5 columns):
 #   Column        Non-Null Count  Dtype
---  ------        --------------  -----
 0   sepal_length  150 non-null    float64
 1   sepal_width   150 non-null    float64
 2   petal_length  150 non-null    float64
 3   petal_width   150 non-null    float64
 4   species       150 non-null    object
dtypes: float64(4), object(1)
memory usage: 6.0+ KB
```

```
df.isnull()
```

```
     sepal_length  sepal_width  petal_length  petal_width  species
0           False        False         False        False    False
1           False        False         False        False    False
2           False        False         False        False    False
3           False        False         False        False    False
4           False        False         False        False    False
..            ...          ...           ...          ...      ...
145         False        False         False        False    False
146         False        False         False        False    False
147         False        False         False        False    False
148         False        False         False        False    False
149         False        False         False        False    False

[150 rows x 5 columns]
```

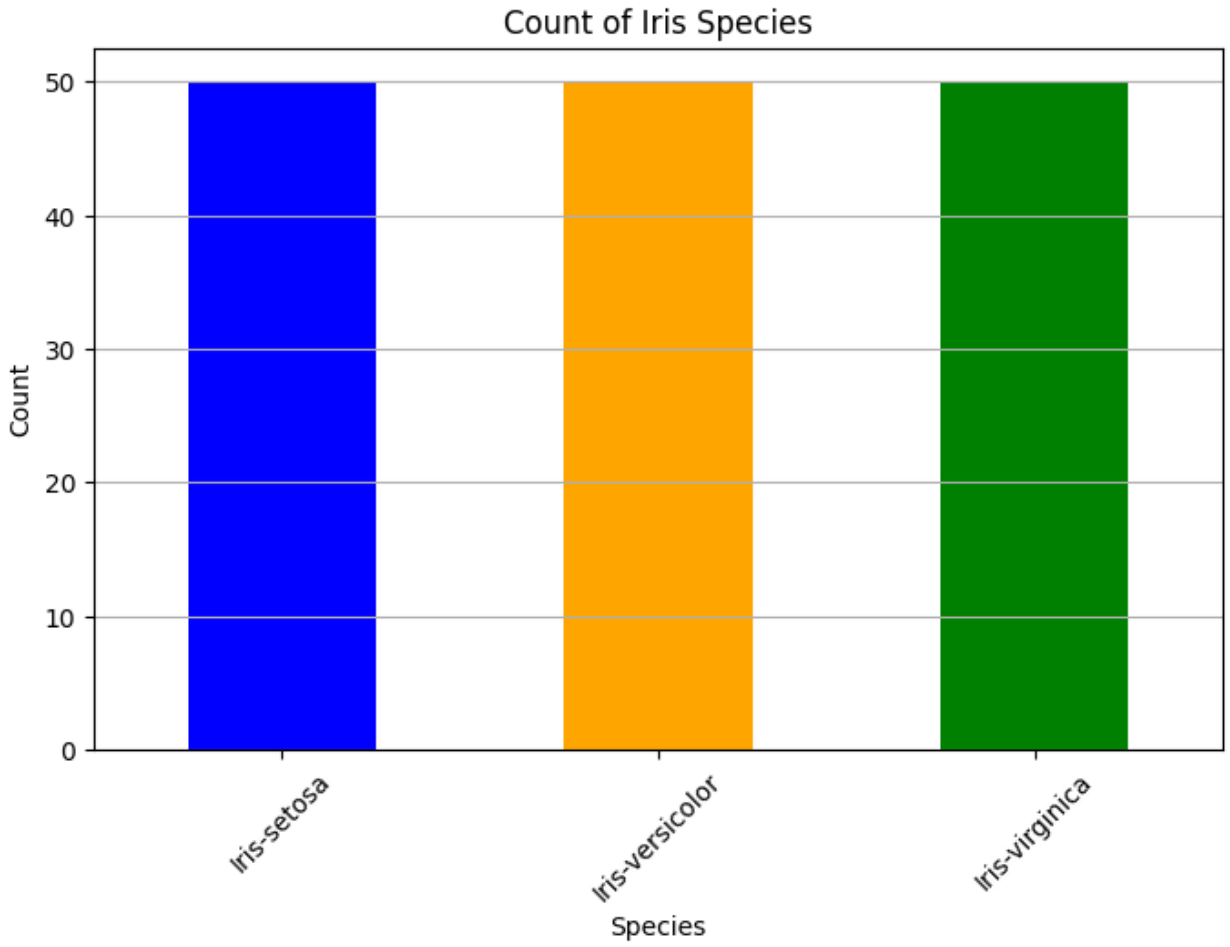
```
len(df.isnull())
```

```
150
```

```
print ("Total no of Rows ==>", df.shape[1])
print ("Total no of Columns ==>", df.shape[0])
```

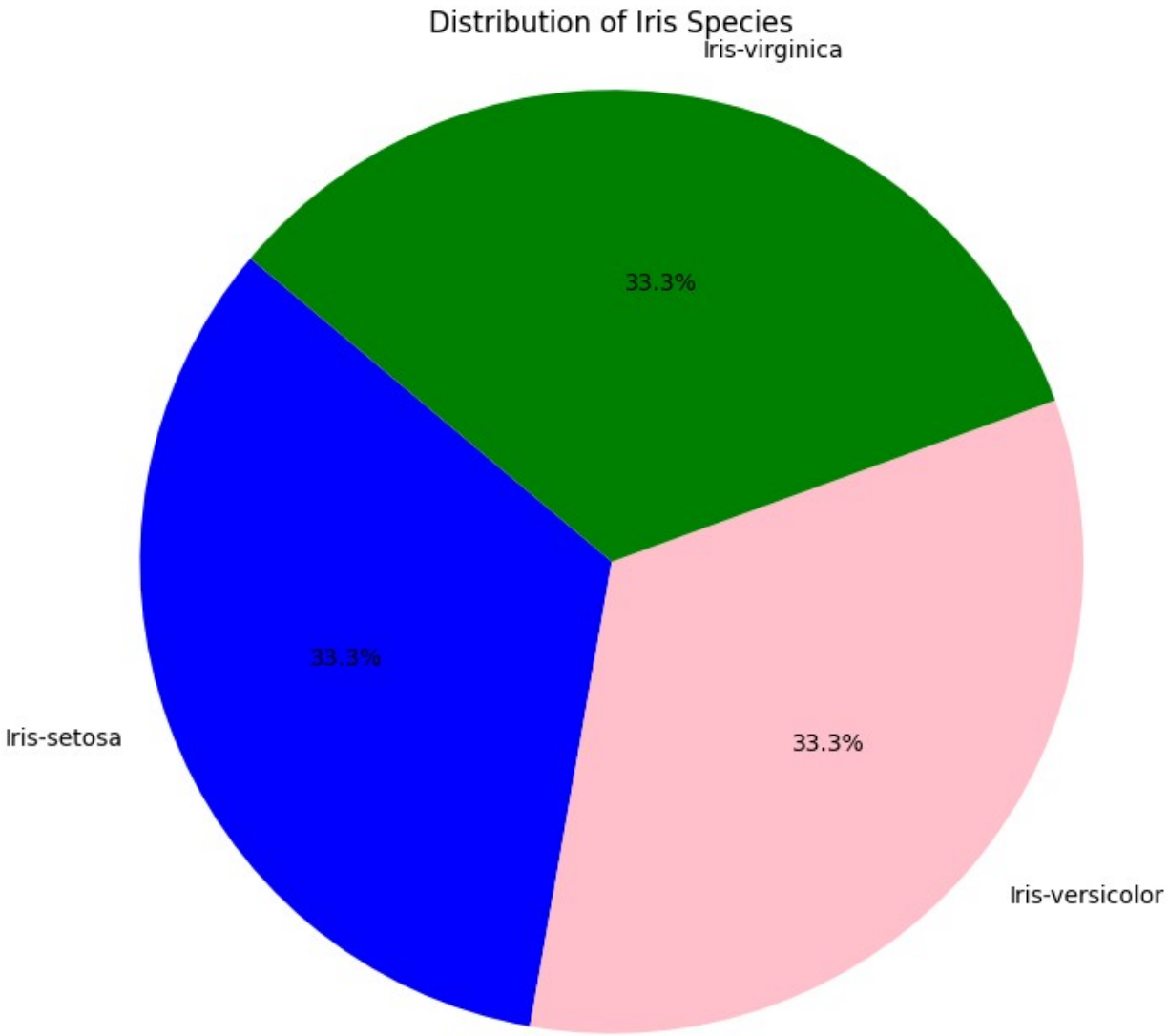
```
Total no of Rows ==> 5
Total no of Columns ==> 150
```

```
species_count = df['species'].value_counts()
plt.figure(figsize=(8, 5))
species_count.plot(kind='bar', color=['blue', 'orange', 'green'])
plt.title('Count of Iris Species')
plt.xlabel('Species')
plt.ylabel('Count')
plt.xticks(rotation=45)
plt.grid(axis='y')
plt.show()
```

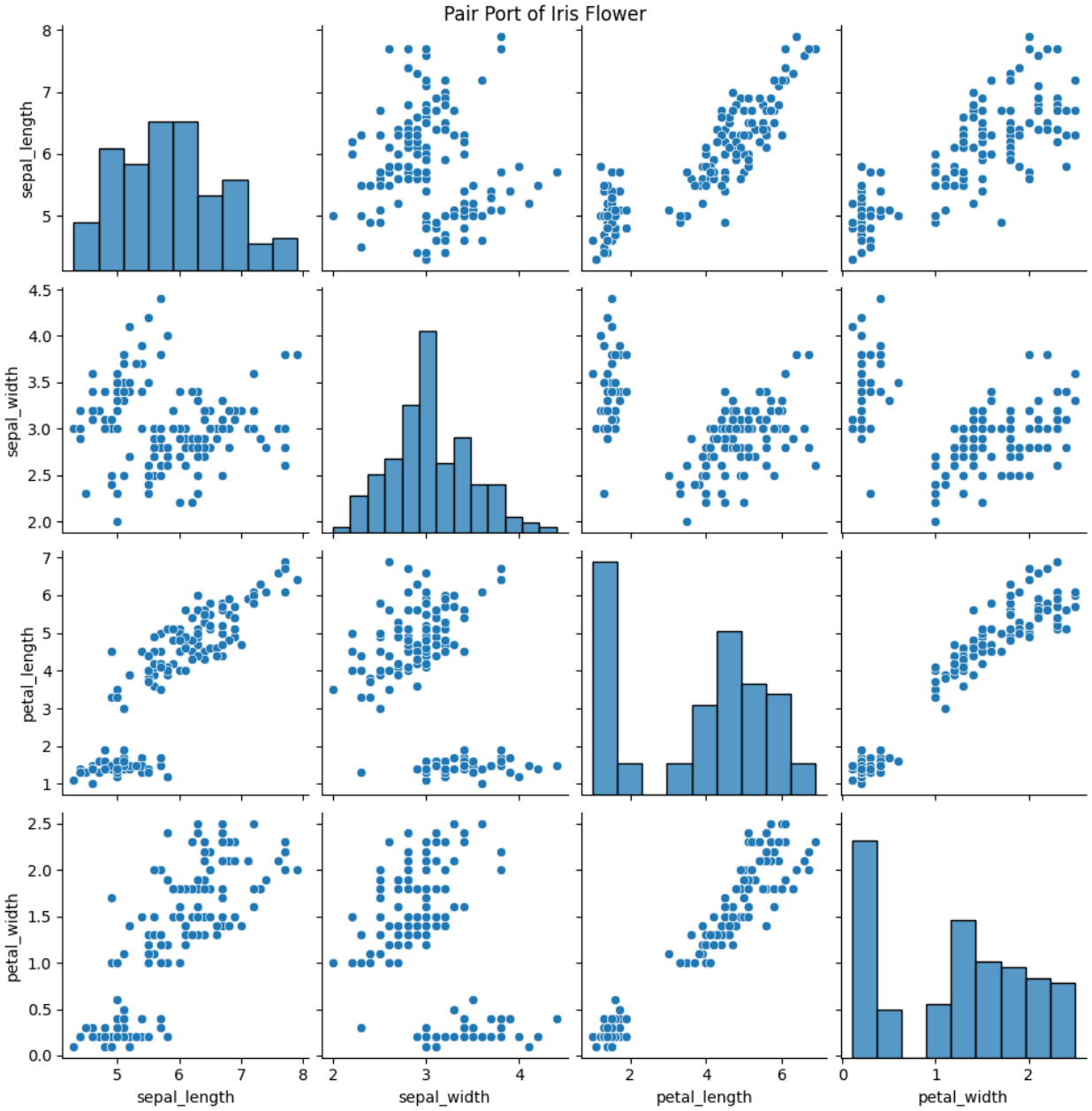



```
species_count = df['species'].value_counts()
plt.figure(figsize=(8, 8))
plt.pie(species_count, labels=species_count.index, autopct='%1.1f%%',
startangle=140, colors=['blue', 'Pink', 'green'])
```

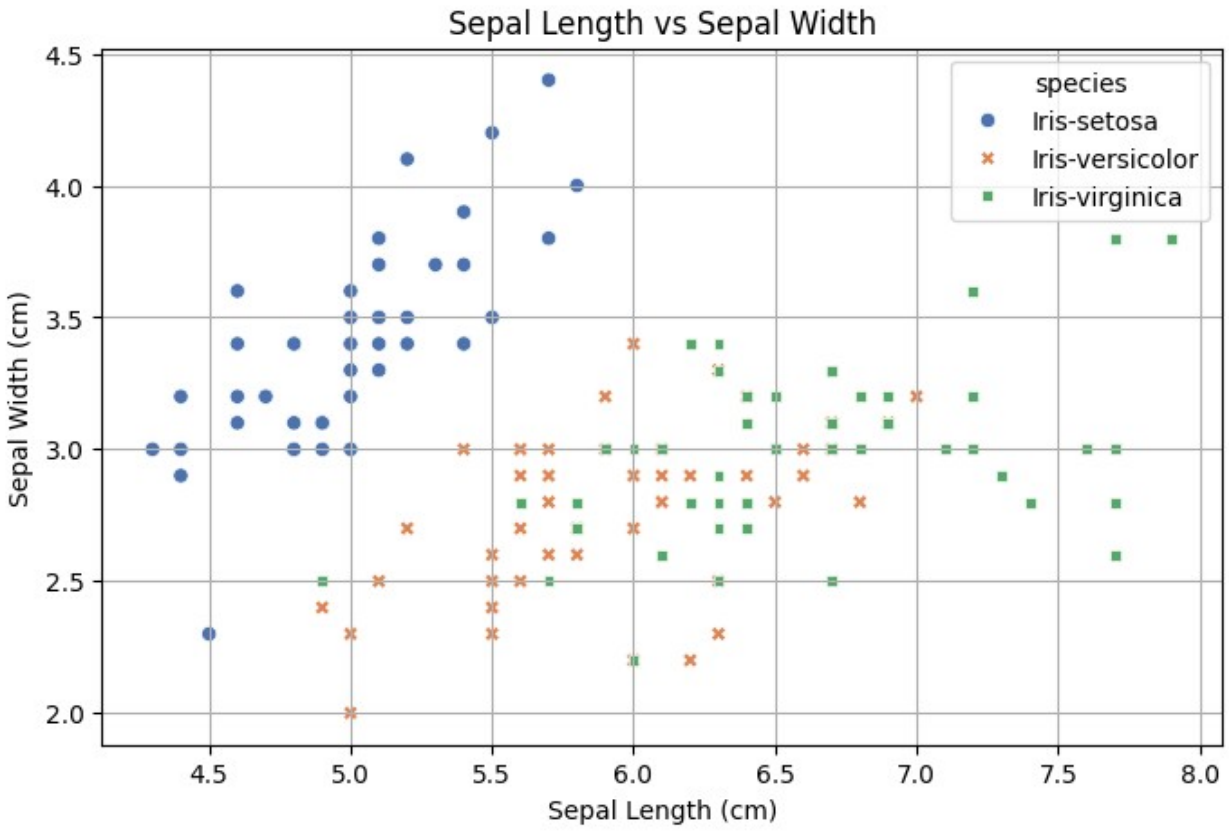
```
plt.title('Distribution of Iris Species')
plt.axis('equal')
plt.show()
```




```
sb.pairplot(df)
plt.suptitle('Pair Port of Iris Flower', y=1.00)
plt.show()
```




```
plt.figure(figsize=(8, 5))
sb.scatterplot(data=df, x="sepal_length", y="sepal_width",
hue="species", style="species", palette="deep")
plt.title('Sepal Length vs Sepal Width')
plt.xlabel('Sepal Length (cm)')
plt.ylabel('Sepal Width (cm)')
plt.grid()
plt.show()
```


Sepal Length vs Sepal Width
species
Iris-setosa
Iris-versicolor
Iris-virginica
Sepal Width (cm)
Sepal Length (cm)
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