#### General Statistics Plot (Matplotlib or Seaborn):

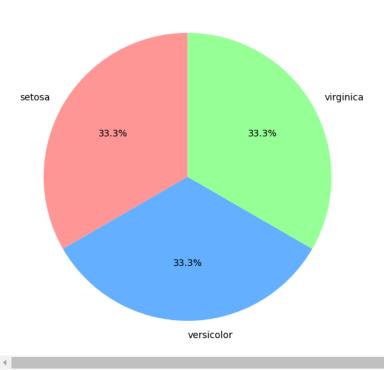
```
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
# Load the Iris dataset
iris = sns.load_dataset('iris')
# General statistical summary using describe
summary = iris.describe()
# General statistical pair plot
sns.pairplot(iris)
plt.show()
               sepal_length sepal_width 150.000000 150.000000
                                                 petal_length
150.000000
                                                                  petal_width
                                                                    150.000000
      count
                    5.843333
0.828066
                                    3.057333
0.435866
                                                                      1.199333
0.762238
                                                      3.758000
                                                      1.765298
      std
      min
                    4.300000
                                    2.000000
                                                      1.000000
                                                                      0.100000
      25%
                    5.100000
                                    2.800000
                                                      1.600000
                                                                      0.300000
                                    3.000000
                                                      4.350000
                                                                       1.300000
      75%
max
                    6.400000
7.900000
                                                                      1.800000
2.500000
                                    3.300000
                                                      5.100000
                                    4.400000
                                                      6.900000
             8
          sepal_length
             5
           4.5
           4.0
        sepal_width
           3.5
           3.0
           2.5
           2.0
             6
          petal_length
w <sub>b</sub> u
             5
           2.5
           2.0
        petal_width
           1.5
           1.0
                                                       ż
                                                                                                                                  Ó
                           sepal_length
                                                                  sepal_width
                                                                                                       petal_length
                                                                                                                                              petal_width
```

## → Pie Plot for Species Frequency:

```
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
# Species frequency count
species_count = iris['species'].value_counts()
# Pie chart
plt.figure(figsize=(7, 7))
plt.pie(species_count, labels=species_count.index, autopct='%1.1f%', startangle=90, colors=['#ff9999','#66b3ff','#99ff99'])
plt.title('Species Frequency in Iris Dataset')
plt.show()
```

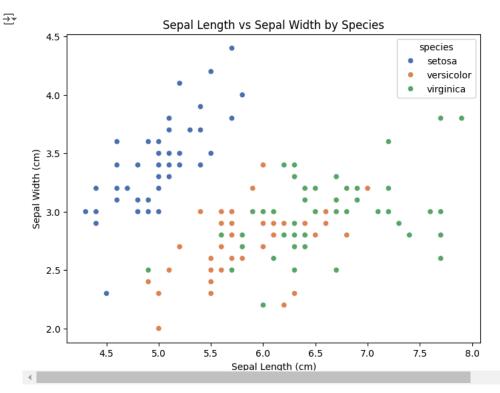
<del>\_</del>\_

#### Species Frequency in Iris Dataset



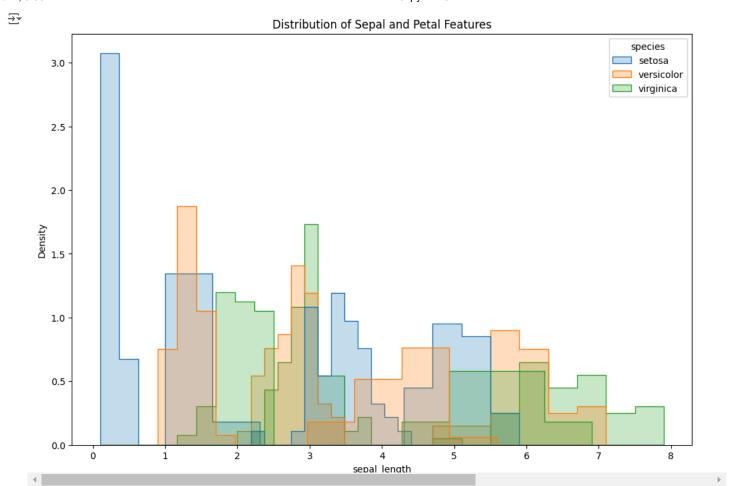
## Relationship Between Sepal Length and Width:

```
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
# Scatter plot of Sepal Length vs Sepal Width
plt.figure(figsize=(8, 6))
sns.scatterplot(x='sepal_length', y='sepal_width', hue='species', data=iris, palette='deep')
plt.title('Sepal Length vs Sepal Width by Species')
plt.xlabel('Sepal Length (cm)')
plt.ylabel('Sepal Width (cm)')
plt.show()
```



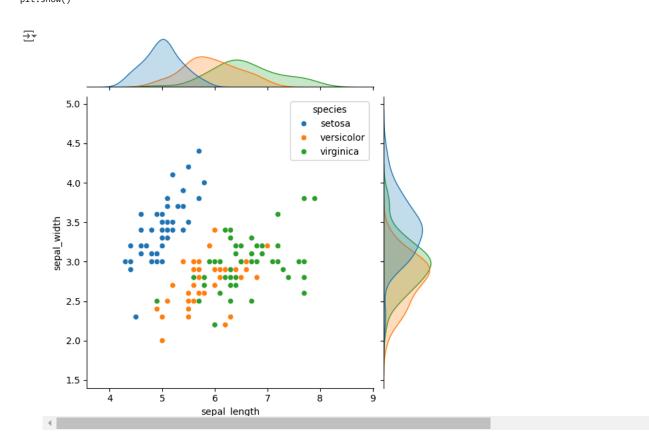
# Distribution of Sepal and Petal Features:

```
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
# Distribution plots for Sepal and Petal Features
plt.figure(figsize=(12, 8))
sns.histplot(iris, x='sepal_length', hue='species', element='step', stat='density', common_norm=False)
sns.histplot(iris, x='sepal_width', hue='species', element='step', stat='density', common_norm=False)
sns.histplot(iris, x='petal_length', hue='species', element='step', stat='density', common_norm=False)
sns.histplot(iris, x='petal_width', hue='species', element='step', stat='density', common_norm=False)
plt.title('Distribution of Sepal and Petal Features')
plt.show()
```



# Jointplot of Sepal Length vs Sepal Width:

```
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
# Joint plot of Sepal Length vs Sepal Width
sns.jointplot(x='sepal_length', y='sepal_width', data=iris, kind='scatter', hue='species')
plt.show()
```



## V KDE Plot for Setosa Species (Sepal Length vs Sepal Width):

```
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
# Filter setosa species data
setosa = iris[iris['species'] == 'setosa']

# KDE plot for Sepal Length vs Sepal Width for Setosa
sns.kdeplot(x='sepal_length', y='sepal_width', data=setosa, cmap="Blues", shade=True)
plt.title('KDE Plot of Sepal Length vs Sepal Width for Setosa Species')
plt.show()
```

```
<ipython-input-6-003f3c77e946>:8: FutureWarning:
    `shade` is now deprecated in favor of `fill`; setting `fill=True`
    This will become an error in seaborn v0.14.0; please update your code.
      sns.kdeplot(x='sepal_length', y='sepal_width', data=setosa, cmap="Blues", shade=True)
            KDE Plot of Sepal Length vs Sepal Width for Setosa Species
        4.5
        4.0
```

# sepal\_width o.e. c.e. 2.5 2.0 4.0 4.5 5.0 5.5 6.0 sepal length

# **KDE Plot for Setosa Species (Petal Length vs Petal Width):**

```
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
# KDE plot for Petal Length vs Petal Width for Setosa
sns.kdeplot(x='petal_length', y='petal_width', data=setosa, cmap="Reds", shade=True)
plt.title('KDE Plot of Petal Length vs Petal Width for Setosa Species')
plt.show()
```

<ipython-input-7-b59283110a32>:5: FutureWarning:

`shade` is now deprecated in favor of `fill`; setting `fill=True`. This will become an error in seaborn v0.14.0; please update your code.

sns.kdeplot(x='petal\_length', y='petal\_width', data=setosa, cmap="Reds", shade=True)

