Lab Session: Data Visualization with Matplotlib and Seaborn using the Iris Dataset

Importing Libraries

In [1]:
```
import matplotlib.pyplot as plt
import seaborn as sns
```

In [9]:
```
iris= sns.load_dataset('iris')
```

In [10]:
```
iris.head()
```

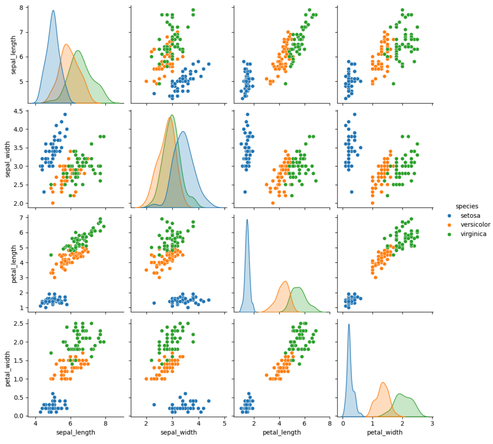
Out[10]:

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa

1. General Statistics Plot (Matplotlib or Seaborn):

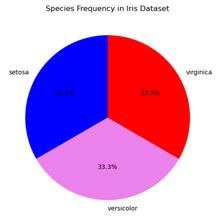
In [11]:
```
sns.pairplot(iris, hue='species', height=2.5)
plt.show
```

Out[11]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```



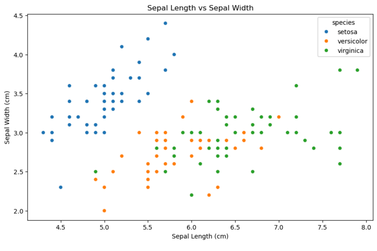
2. Pie Plot for Species Frequency:

In [14]:
```
species_counts = iris['species'].value_counts()  # Add parentheses to call the function
plt.figure(figsize=(6,6))
plt.pie(species_counts, labels=species_counts.index, autopct='%1.1f%%', startangle=90,colors=['blue','violet','red'])
plt.title('Species Frequency in Iris Dataset')
plt.show()
```



3. Relationship Between Sepal Length and Sepal Width:

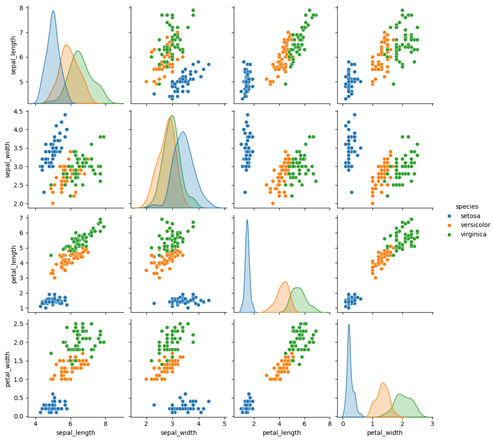
In [15]:
```
plt.figure(figsize=(10, 6))
sns.scatterplot(x='sepal_length', y='sepal_width', hue='species', data=iris)
plt.title('Sepal Length vs Sepal Width')
plt.xlabel('Sepal Length (cm)')
plt.ylabel('Sepal Width (cm)')
plt.show()
```



4. Distribution of Sepal and Petal Features:

In [16]:
```
sns.pairplot(iris,hue='species',height=2.5)
plt.show
```

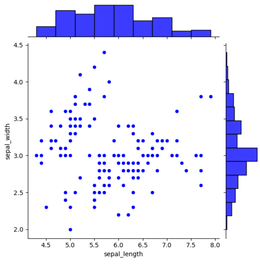
Out[16]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```



5. Jointplot of Sepal Length vs Sepal Width:

In [17]:
```
sns.jointplot(x='sepal_length',y='sepal_width',data=iris,kind='scatter',color='b')
plt.show
```

Out[17]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```



6.KDE Plot for Setosa Species (Sepal Length vs Sepal Width):

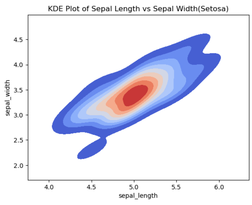
In [18]:
```
setosa=iris[iris['species']=='setosa']
sns.kdeplot(x='sepal_length',y='sepal_width',data=setosa,shade=True,cmap='coolwarm')
plt.title('KDE Plot of Sepal Length vs Sepal Width(Setosa)')
plt.show
```

```
C:\Users\chenn\AppData\Local\Temp\ipykernel_15572\2763975330.py:2: 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,shade=True,cmap='coolwarm')
```

Out[18]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```


KDE Plot of Sepal Length vs Sepal Width(Setosa)
sepal_width
sepal_length
4.5
4.0
3.5
3.0
2.5
2.0
4.0
4.5
5.0
5.5
6.0

In [ ]: