In [67]:
```
#task1
# Name:A.R.Bhavsha
#CREATING BAR CHART AND HISTOGRAM FO THE GIVEN DATASET
```

In [68]:
```
# IMPORT LIBRARIES
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import warnings
warnings.filterwarnings("ignore")
```

In [69]:
```
#LOAD THE DATASET
iris=pd.read_csv("C:/Users/Lenovo/Downloads/IRIS (1).csv")
```

In [70]:
```
#DISPLAY THE FISRST FIVE ROWS OF THE DATASET
iris.head()
```

Out[70]:

| | 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 |

In [71]:
```
#SUMMARY
iris.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
```

In [72]:
```
#STATISTICS
print(iris.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
```

In [73]:
```
#DISPLAY THE LAST FIVE ROWS OF THE DATASET
iris.tail()
```

Out[73]:

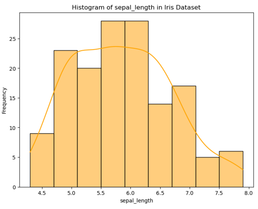
| | sepal_length | sepal_width | petal_length | petal_width | species |
|---|---|---|---|---|---|
| **145** | 6.7 | 3.0 | 5.2 | 2.3 | Iris-virginica |
| **146** | 6.3 | 2.5 | 5.0 | 1.9 | Iris-virginica |
| **147** | 6.5 | 3.0 | 5.2 | 2.0 | Iris-virginica |
| **148** | 6.2 | 3.4 | 5.4 | 2.3 | Iris-virginica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

In [74]:
```
#CHEKING FOR THE MISSING VALUES
iris.isnull().any()
```

Out[74]:
```
sepal_length    False
sepal_width     False
petal_length    False
petal_width     False
species         False
dtype: bool
```

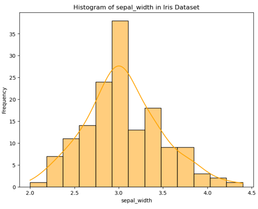
In [75]:
```
feature_to_plot="sepal_length"
```

In [76]:
```
#VISUALIZING THE HISTOGRAM FOR SEPAL LENGTH
plt.figure(figsize=(8,6))
sns.histplot(iris[feature_to_plot],kde=True,color="orange")
plt.title( f"Histogram of {feature_to_plot} in Iris Dataset")
plt.xlabel(feature_to_plot)
plt.ylabel("Frequency")
plt.show()
```



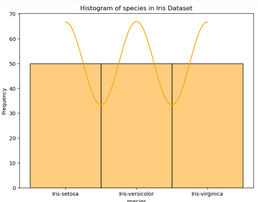

In [77]:
```
feature_to_plot="sepal_width"
```

In [78]:
```
#VISUALIZING THE HISTOGRAM FOR SEPAL WWIDTH
plt.figure(figsize=(8,6))
sns.histplot(iris[feature_to_plot],kde=True,color="orange")
plt.title( f"Histogram of {feature_to_plot} in Iris Dataset")
plt.xlabel(feature_to_plot)
plt.ylabel("Frequency")
plt.show()
```



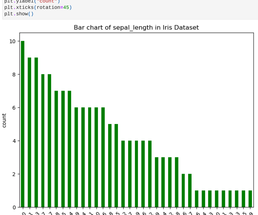

In [79]:
```
feature_to_plot="species"
```

In [80]:
```
#VISUALIZING THE HISTOGRAM FOR SPECIES
plt.figure(figsize=(8,6))
sns.histplot(iris[feature_to_plot],kde=True,color="orange")
plt.title( f"Histogram of {feature_to_plot} in Iris Dataset")
plt.xlabel(feature_to_plot)
plt.ylabel("Frequency")
plt.show()
```



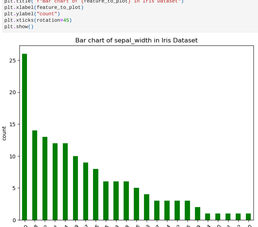

In [81]:
```
feature_to_plot="sepal_length"
```

In [82]:
```
#VISUALIZING THE BARCHART FOR SEPAL LENGTH
plt.figure(figsize=(8,6))
iris[feature_to_plot].value_counts().plot(kind="bar",color="green")
plt.title( f"Bar chart of {feature_to_plot} in Iris Dataset")
plt.xlabel(feature_to_plot)
plt.ylabel("count")
plt.xticks(rotation=45)
plt.show()
```



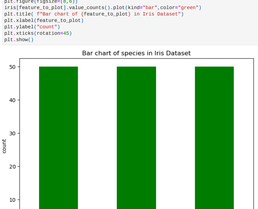

In [83]:
```
feature_to_plot="sepal_width"
```

In [84]:
```
#VISUALIZING THE BARCHART FOR SEPAL WIDTH
plt.figure(figsize=(8,6))
iris[feature_to_plot].value_counts().plot(kind="bar",color="green")
plt.title( f"Bar chart of {feature_to_plot} in Iris Dataset")
plt.xlabel(feature_to_plot)
plt.ylabel("count")
plt.xticks(rotation=45)
plt.show()
```



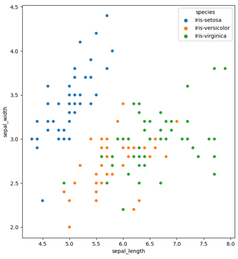

In [85]:
```
feature_to_plot="species"
```

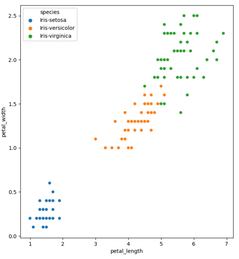
In [86]:
```
#VISUALIZING THE BARCHART FOR SPECIES
plt.figure(figsize=(8,6))
iris[feature_to_plot].value_counts().plot(kind="bar",color="green")
plt.title( f"Bar chart of {feature_to_plot} in Iris Dataset")
plt.xlabel(feature_to_plot)
plt.ylabel("count")
plt.xticks(rotation=45)
plt.show()
```




In [87]:
```
#VISUALIZING THE SCATTERPLOT FOR DATASET
fig, ax = plt.subplots(ncols=2,figsize=(16,8))
sns.scatterplot(iris,x='sepal_length',y='sepal_width',hue='species',ax=ax[0])
sns.scatterplot(iris,x='petal_length',y='petal_width',hue='species',ax=ax[1])
```

Out[87]:
```
<Axes: xlabel='petal_length', ylabel='petal_width'>
```


species
Iris-setosa
Iris-versicolor
Iris-virginica
sepal_width
sepal_length
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


species
Iris-setosa
Iris-versicolor
Iris-virginica
petal_width
petal_length
2.5
2.0
1.5
1.0
0.5
0.0
1
2
3
4
5
6
7