

In [67]: #task1
#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())

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

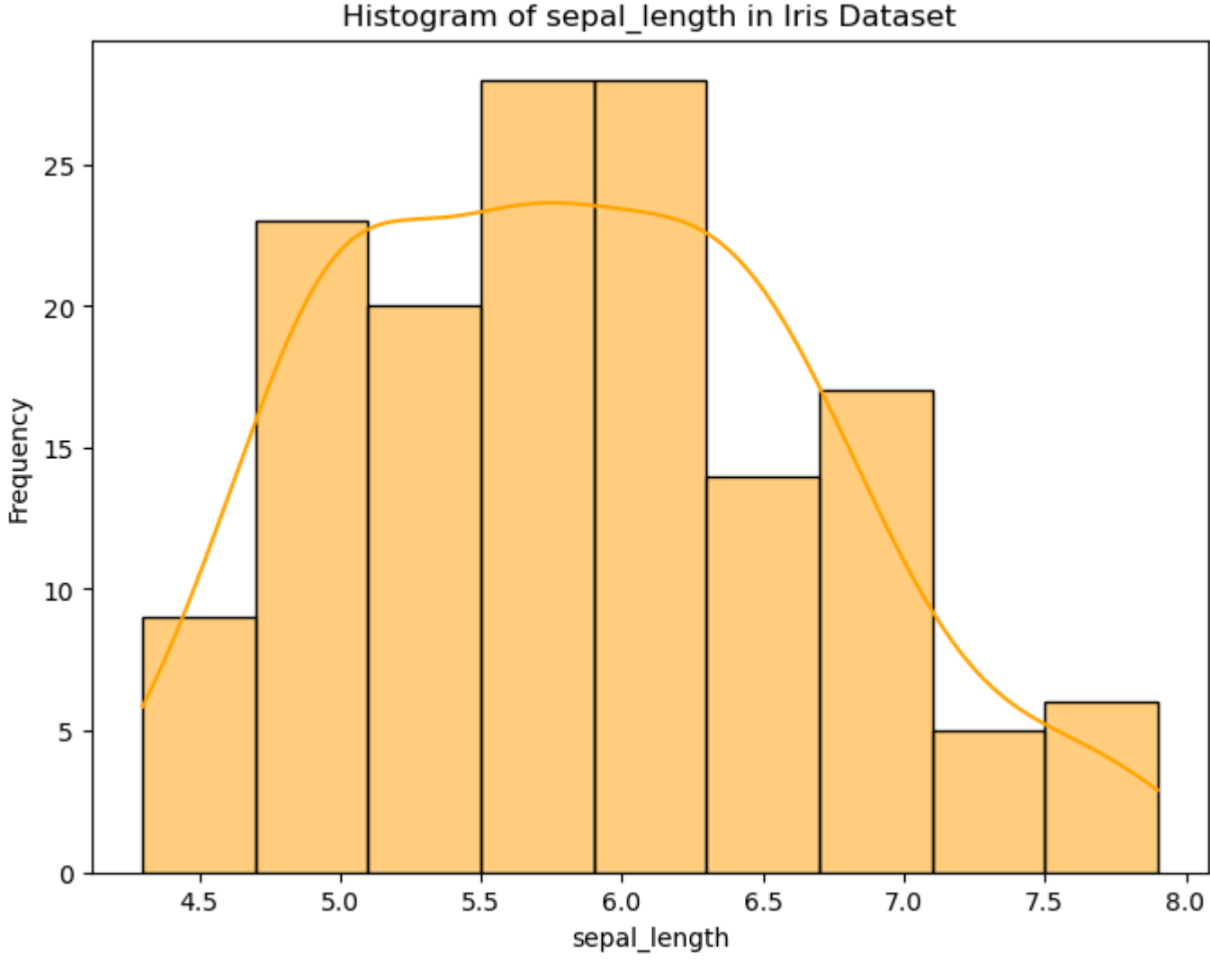
In [74]: #CHECKING FOR THE MISSING VALUES
iris.isnull().any()

Out[74]:

sepal_length	False
sepal_width	False
petal_length	False
petal_width	False
species	False
dtype: bool	

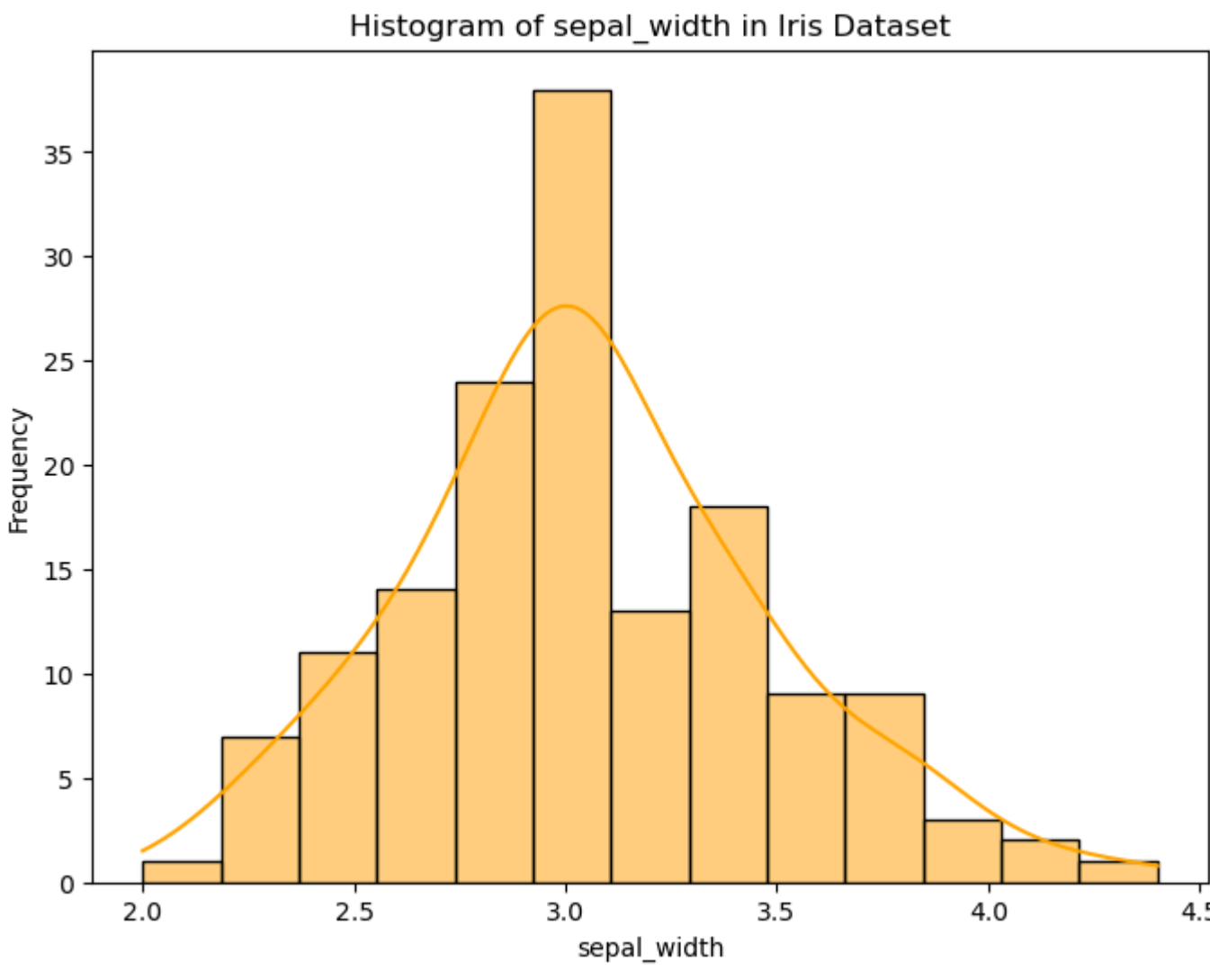
In [75]: feature_to_plot="sepal_length"

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()



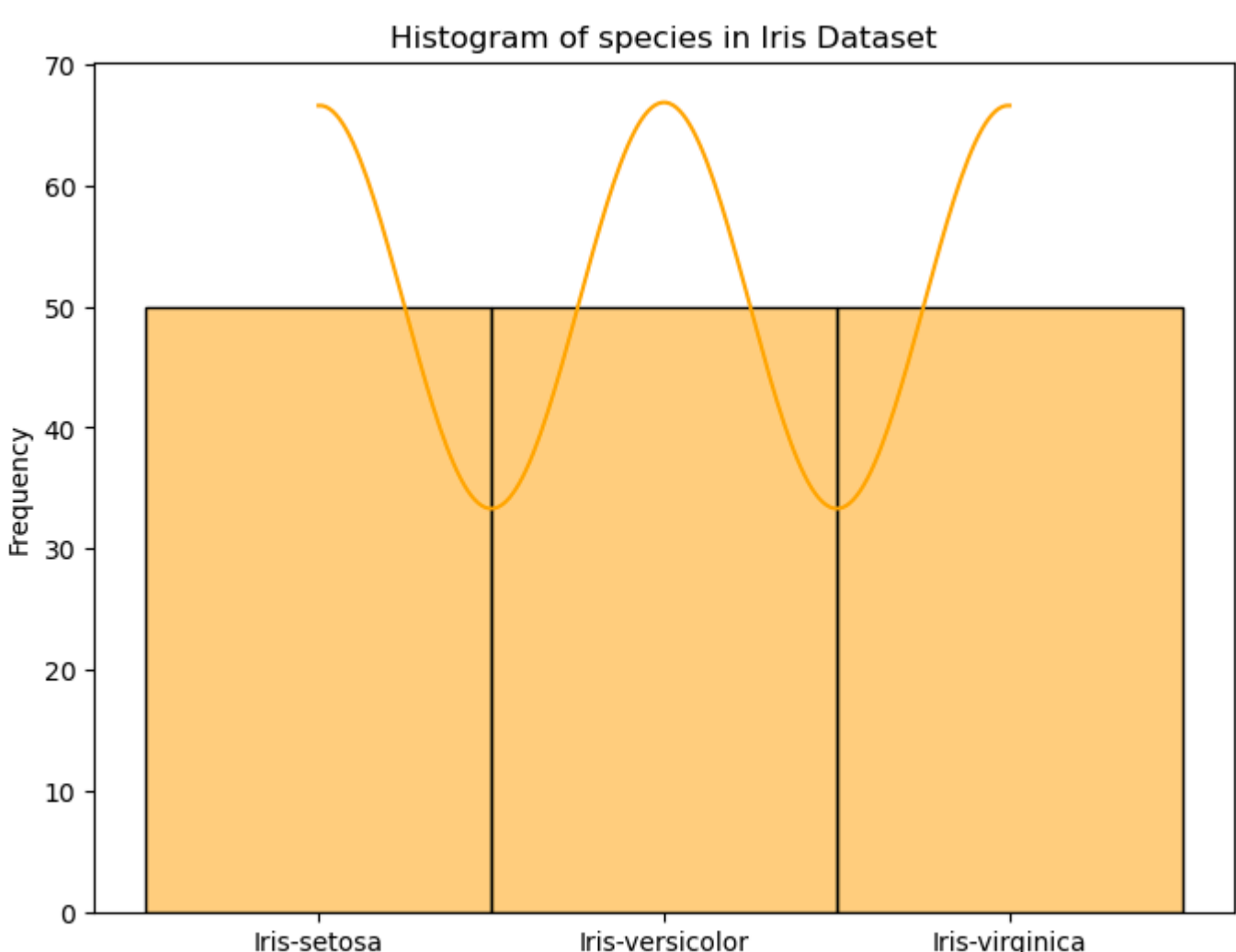
In [77]: feature_to_plot="sepal_width"

In [78]: #VISUALIZING THE HISTOGRAM FOR SEPAL WIDTH
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()



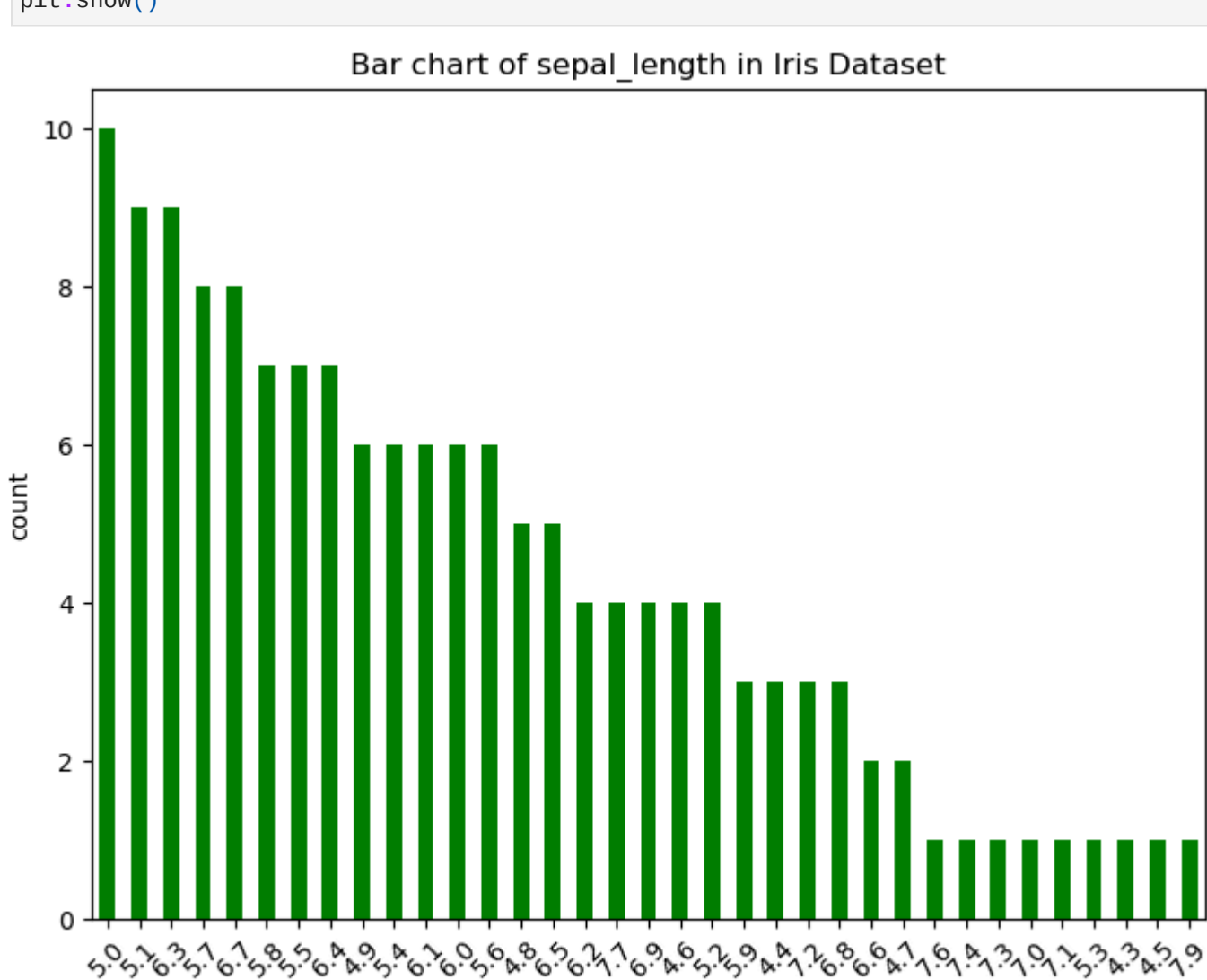
In [79]: feature_to_plot="species"

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()



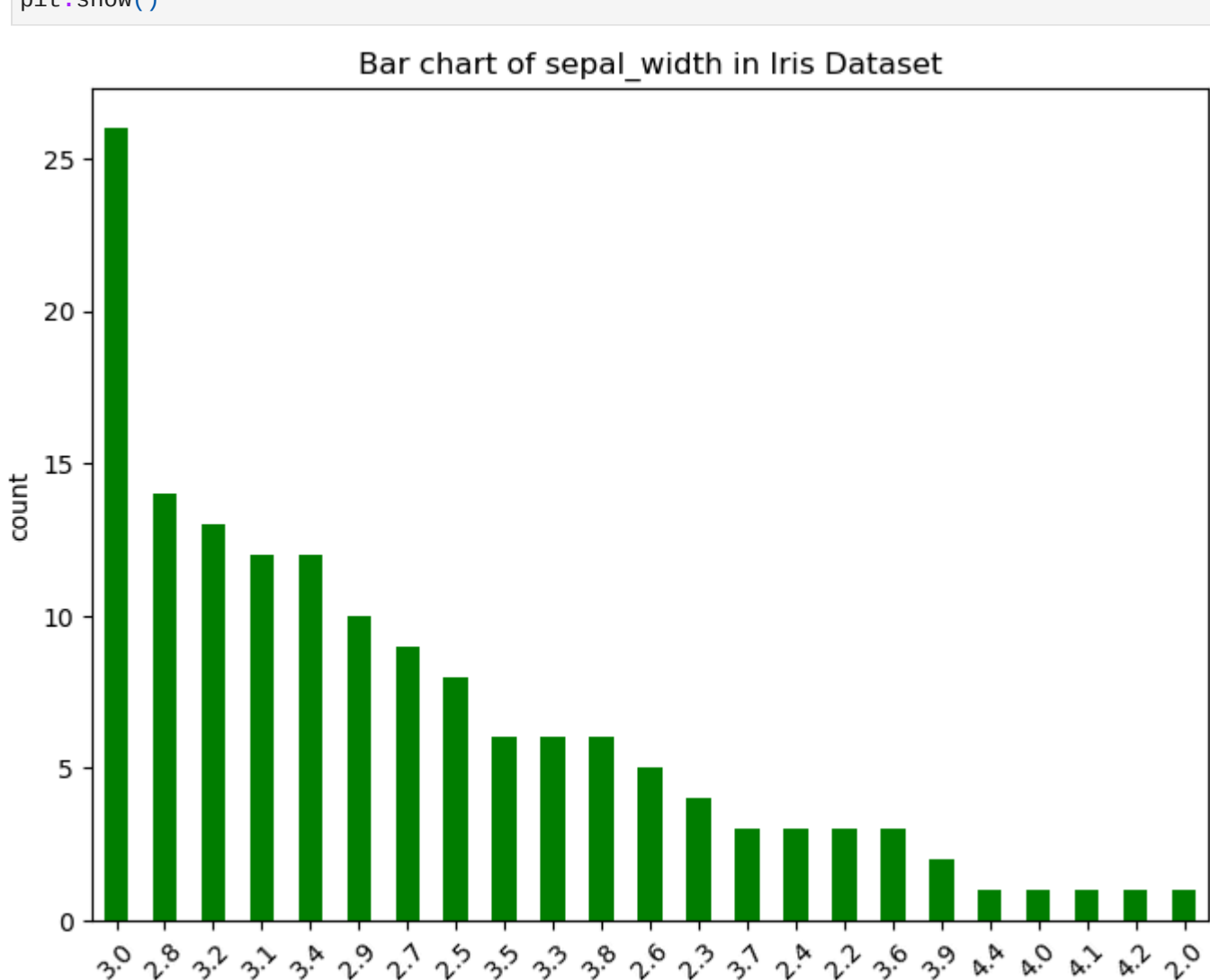
In [81]: feature_to_plot="sepal_length"

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()



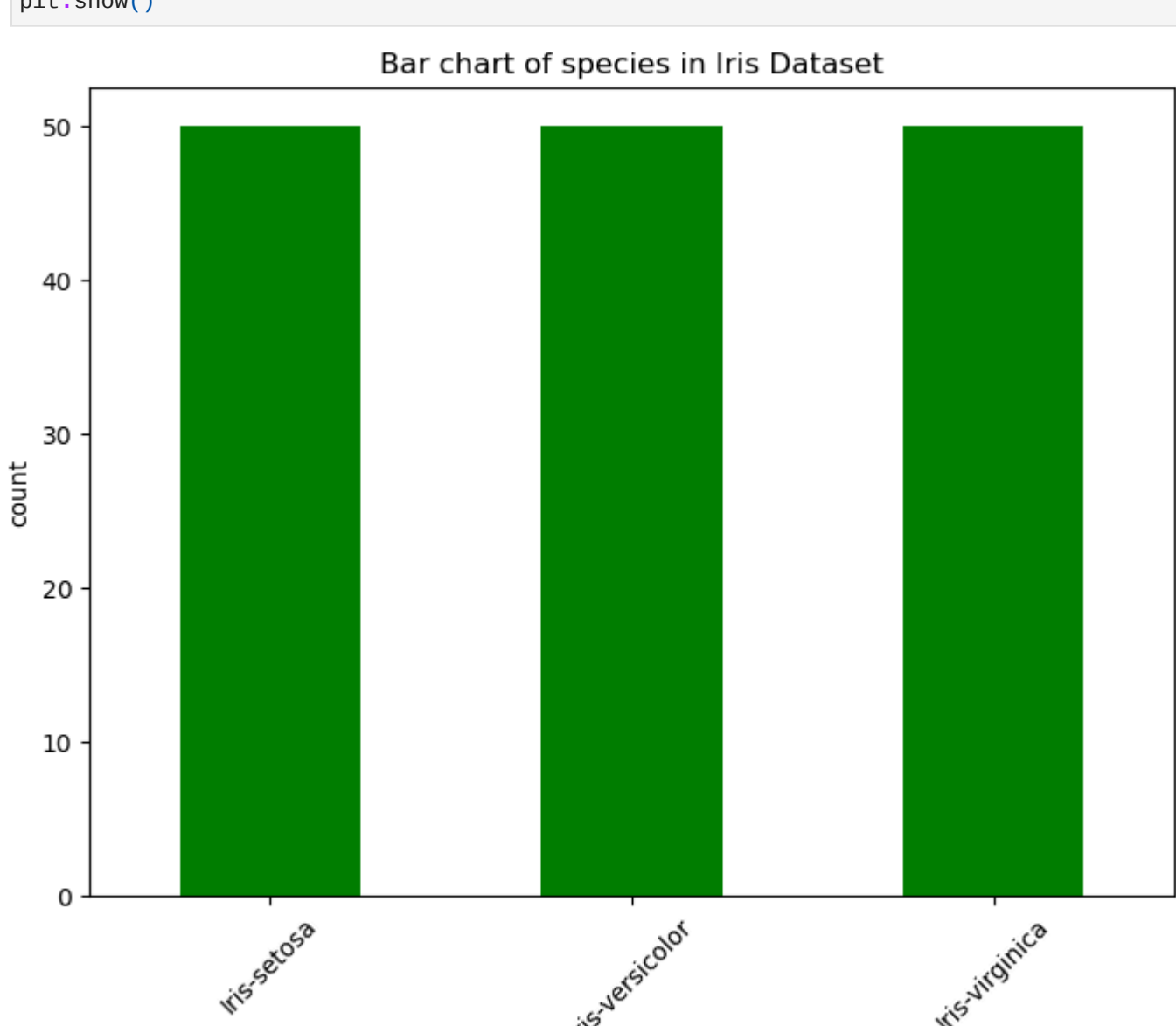
In [83]: feature_to_plot="sepal_width"

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'>

