Import Libraries

In [1]:
```
import pandas as pd
from sklearn.datasets import load_iris
```

Load the Iris dataset

In [2]:
```
iris_data = load_iris()
```

Create a dataframe from the dataset

In [3]:
```
iris_df = pd.DataFrame(data=iris_data.data, columns=iris_data.feature_nam
es)
iris_df['target'] = iris_data.target
```

Display the first few rows of the dataset

In [4]:
```
print(iris_df.head())
```

```
   sepal length (cm)  sepal width (cm)  petal length (cm)  petal width
(cm)  \
0                5.1               3.5                1.4
0.2
1                4.9               3.0                1.4
0.2
2                4.7               3.2                1.3
0.2
3                4.6               3.1                1.5
0.2
4                5.0               3.6                1.4
0.2

   target
0       0
1       0
2       0
3       0
4       0
```

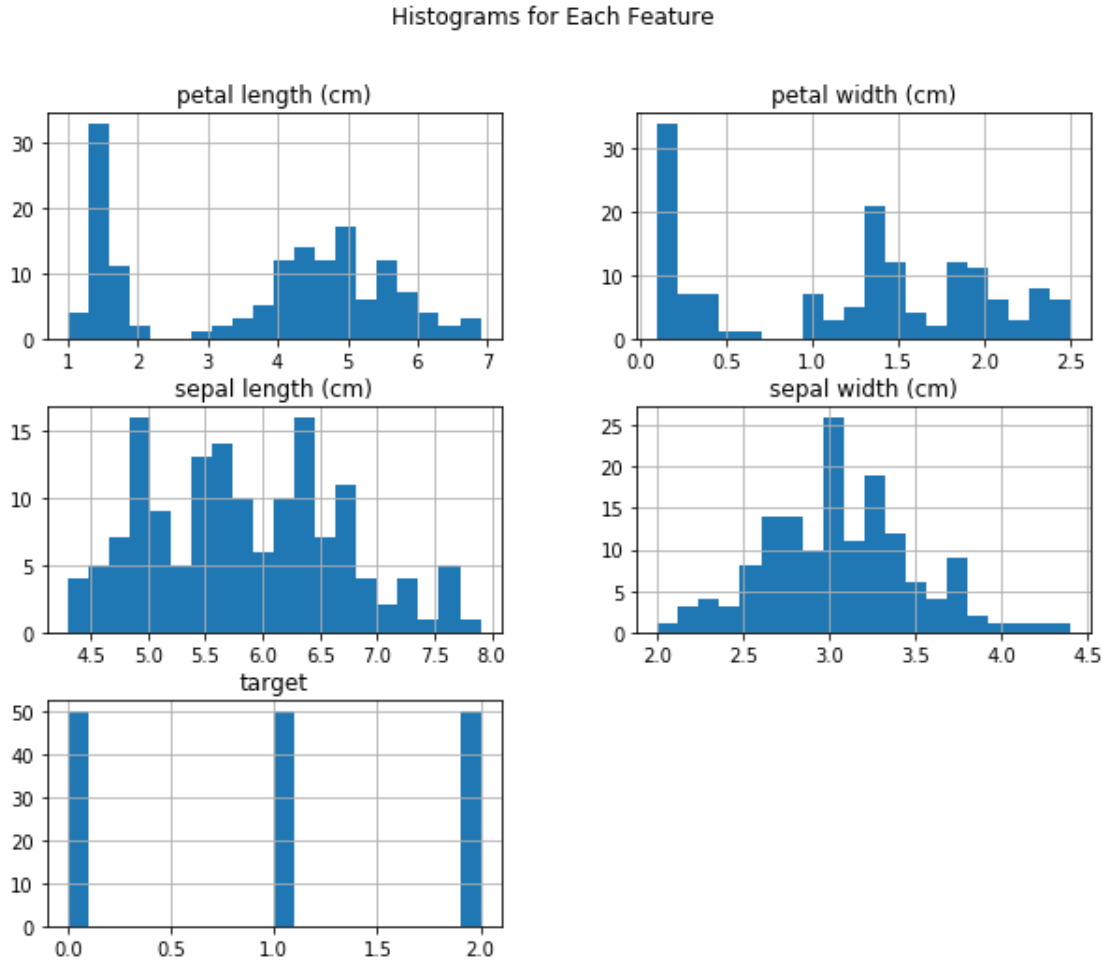
Display feature names and types

In [5]:
```
print("Features and Types:")
print(iris_df.dtypes)
```

```
Features and Types:
sepal length (cm)    float64
sepal width (cm)     float64
petal length (cm)    float64
petal width (cm)     float64
target                 int32
dtype: object
```

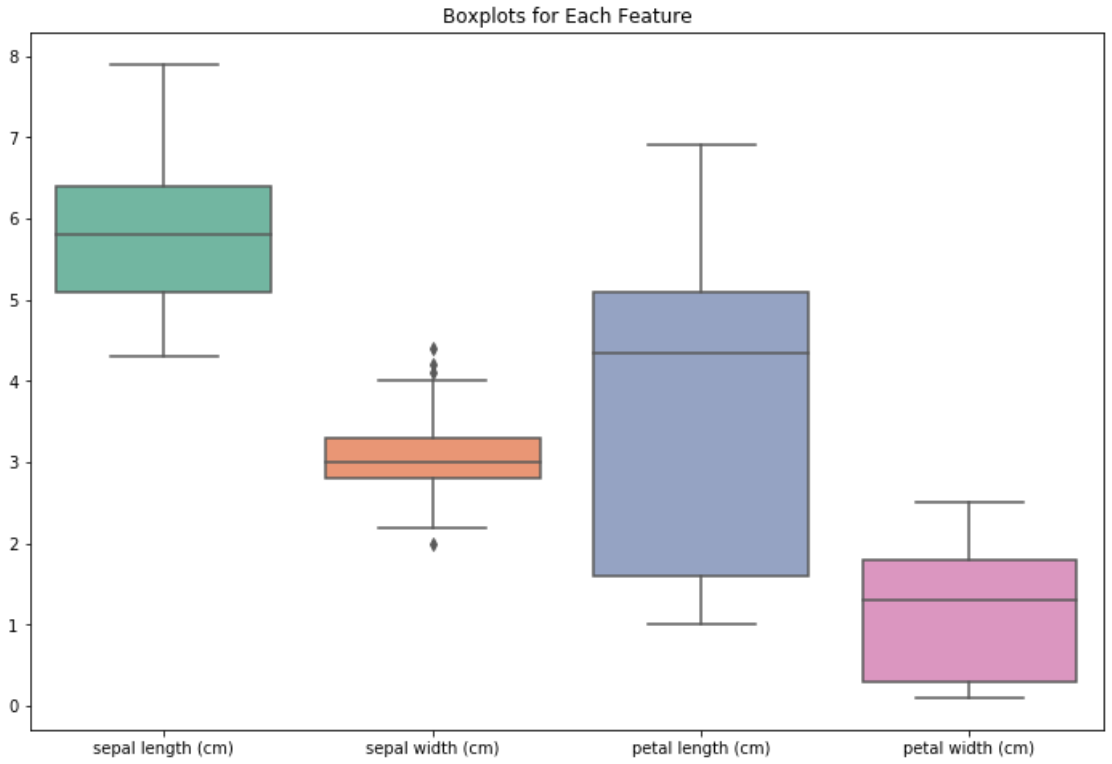
Create histograms for each feature

In [9]:
```
import matplotlib.pyplot as plt


iris_df.hist(figsize=(10, 8), bins=20)
plt.suptitle("Histograms for Each Feature")
plt.show()
```



Create boxplots for each feature

In [10]:
```
import seaborn as sns

plt.figure(figsize=(12, 8))
sns.boxplot(data=iris_df.iloc[:, :-1], palette="Set2")
plt.title("Boxplots for Each Feature")
plt.show()
```



Compare distributions and identify outliers using boxplots

In [11]:
```
plt.figure(figsize=(14, 10))
sns.boxplot(x='target', y='sepal length (cm)', data=iris_df, palette="viridis")
plt.title("Comparison of Sepal Length Distributions by Iris Species")
plt.show()
```