In [10]:
```
import matplotlib.pyplot as plt
import seaborn as sns
```

In [11]:
```
df = sns.load_dataset("iris")
```

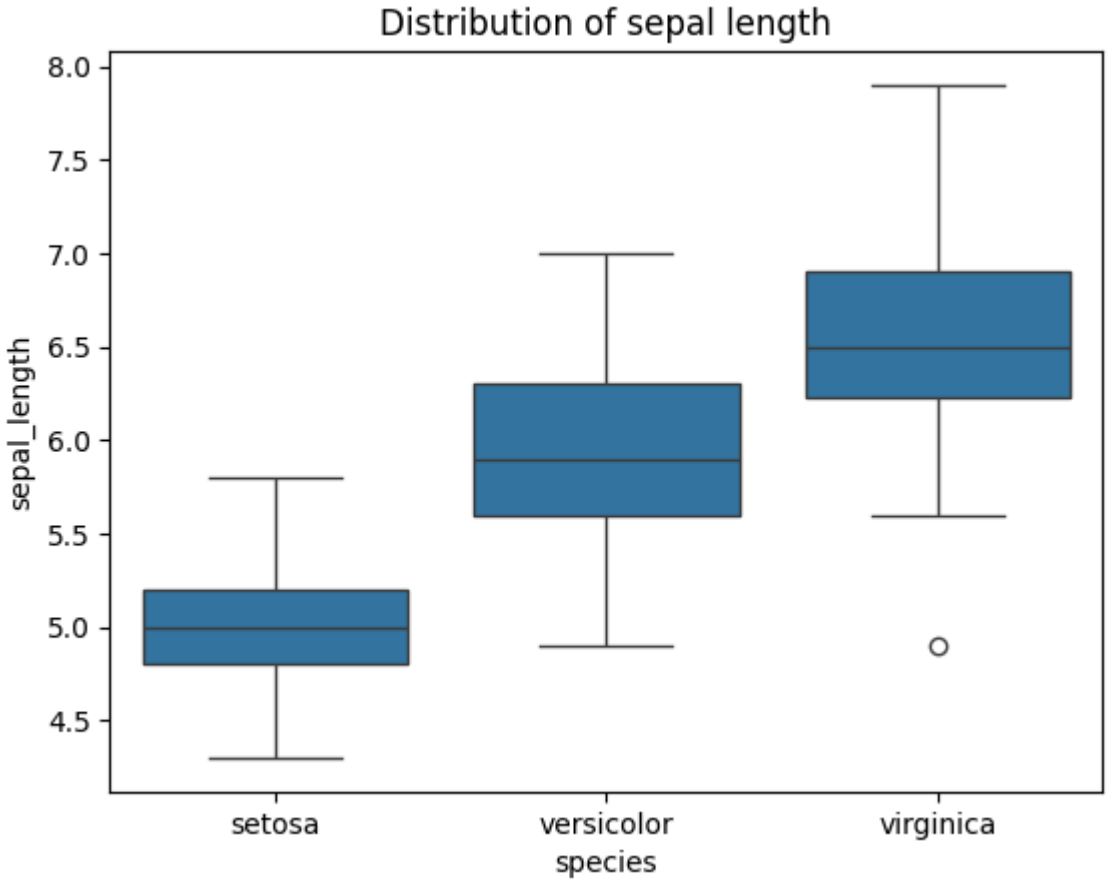
In [12]:
```
df.isnull().sum()
```

Out[12]:
```
sepal_length    0
sepal_width     0
petal_length    0
petal_width     0
species         0
dtype: int64
```

In [13]:
```
print("Features in the dataset and their types:")
print(df.dtypes)
```

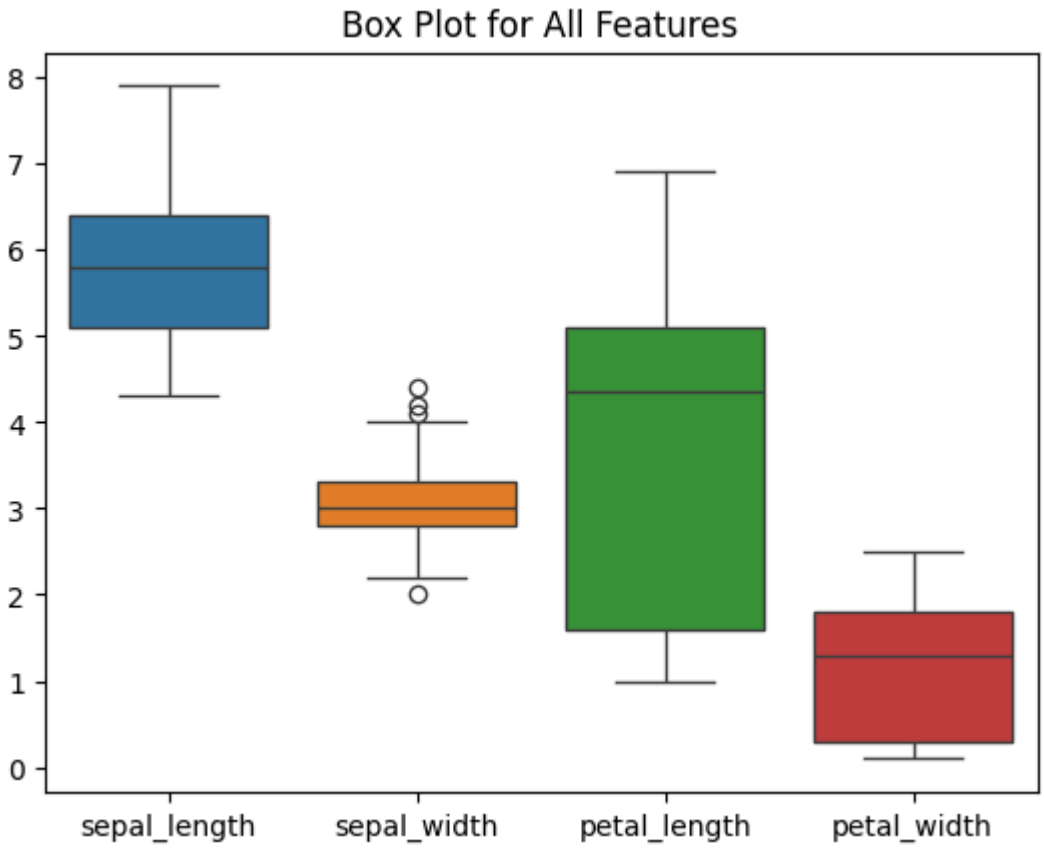
```
Features in the dataset and their types:
sepal_length    float64
sepal_width     float64
petal_length    float64
petal_width     float64
species          object
dtype: object
```

In [14]:
```
sns.boxplot(x='species', y='sepal_length', data=df)
plt.title('Distribution of sepal length')
plt.show()
```



In [15]:

```
sns.boxplot(df)
plt.title("Box Plot for All Features")
plt.show()
```



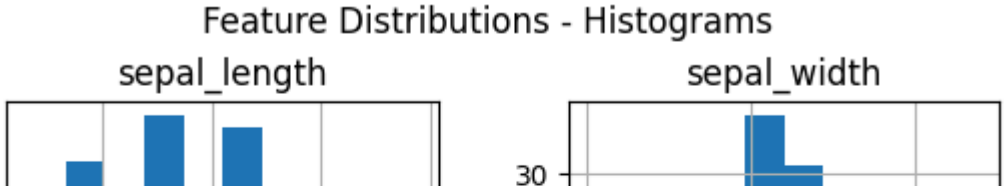
In [16]:

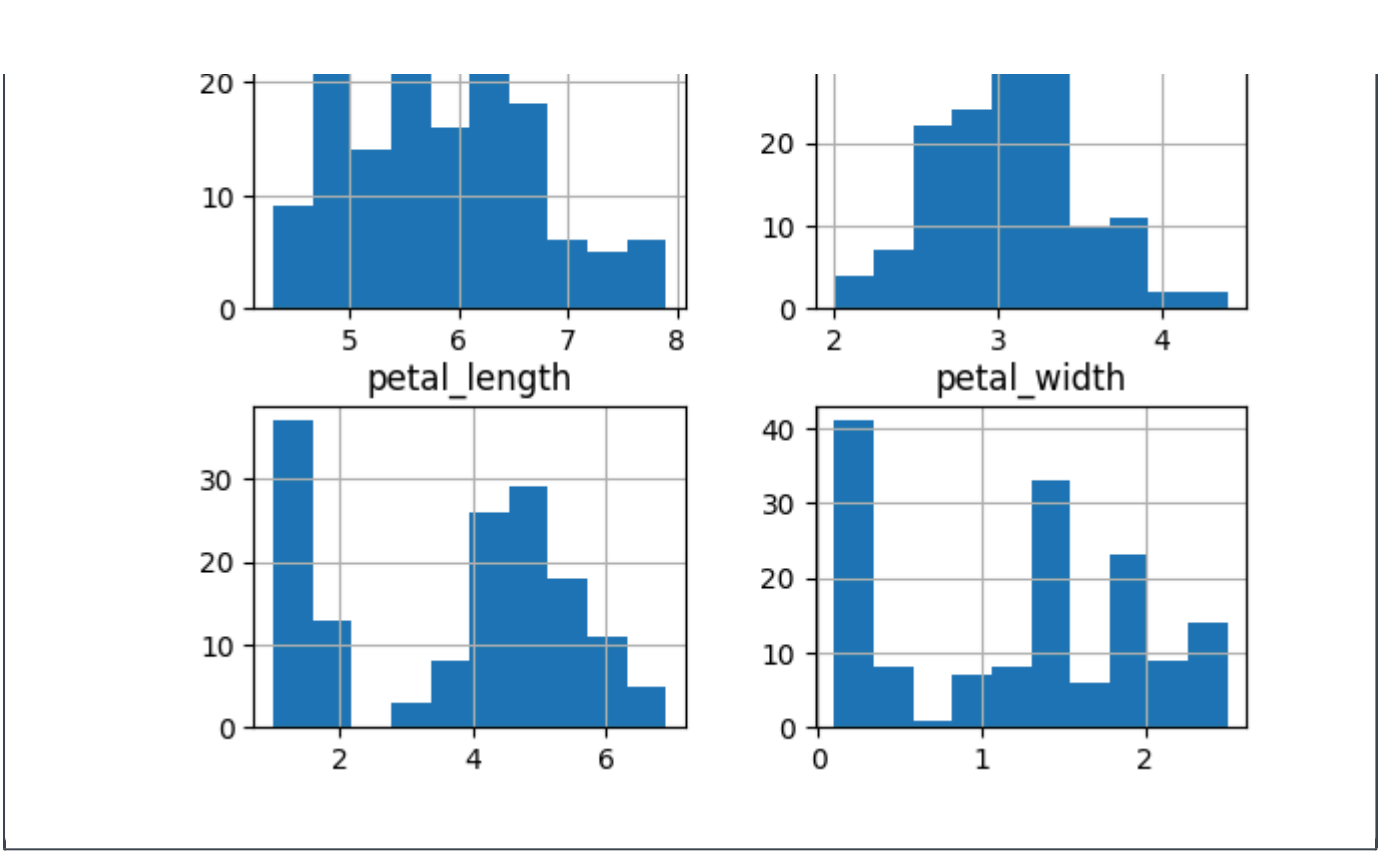
```
def detect_outliers(data, feature):
    Q1 = data[feature].quantile(0.25)
    Q3 = data[feature].quantile(0.75)
    IQR = Q3 - Q1
    lower_bound = Q1 - 1.5 * IQR
    upper_bound = Q3 + 1.5 * IQR
    outliers = data[(data[feature] < lower_bound) | (data[feature] > up
    return outliers

print("Outlier detection for each feature:")
for feature in df.columns[:-1]:
    outliers = detect_outliers(df, feature)
    print(f"{feature} → {len(outliers)} outliers")
```

```
Outlier detection for each feature:
sepal_length → 0 outliers
sepal_width → 4 outliers
petal_length → 0 outliers
petal_width → 0 outliers
```

In [17]:

```
df.hist()
plt.suptitle("Feature Distributions - Histograms")
plt.show()
```




petal_length
petal_width