```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
from sklearn.tree import DecisionTreeClassifier
from sklearn.metrics import accuracy_score, classification_report, confusion_matrix

# Load the Iris dataset using seaborn
iris_data = sns.load_dataset('iris')

# Inspect the data
print(iris_data.head())
print(iris_data.describe())
print(iris_data.isnull().sum())

# Encode the target variable
iris_data['species'] = iris_data['species'].astype('category').cat.codes

# Visualize the data
sns.pairplot(iris_data, hue='species')
plt.show()

# Visualize the correlation matrix
plt.figure(figsize=(10, 6))
sns.heatmap(iris_data.corr(), annot=True, cmap='coolwarm')
plt.title('Correlation Matrix')
plt.show()

# Define features and target variable
X = iris_data.drop(columns=['species'])
y = iris_data['species']

# Split the data
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

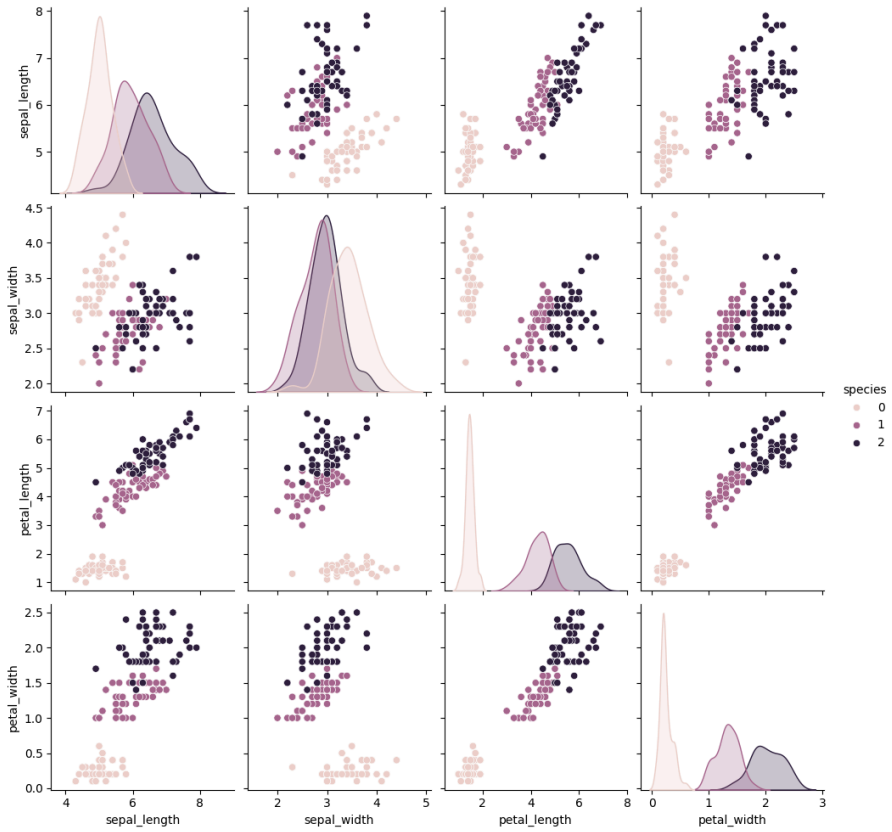
# Build and train the model
dt_model = DecisionTreeClassifier()
dt_model.fit(X_train, y_train)

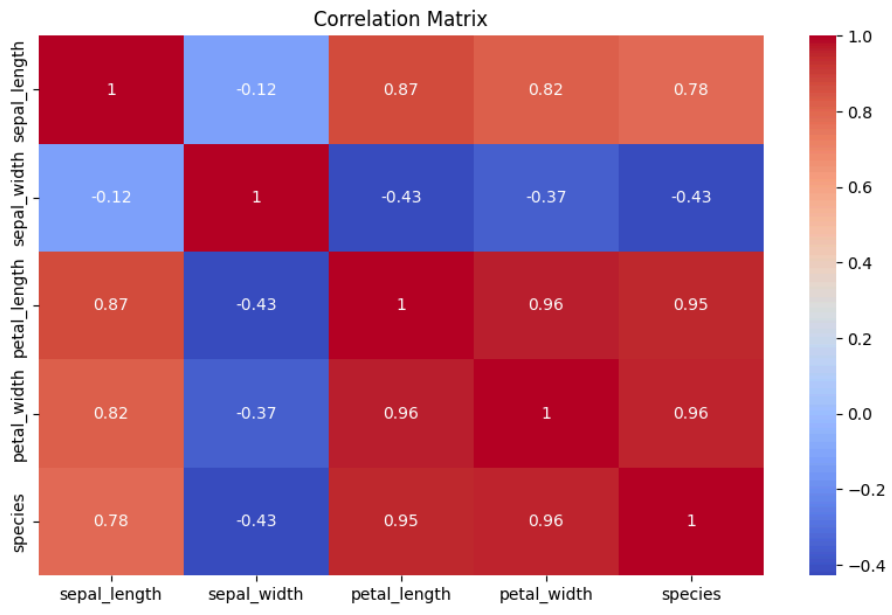
# Predict on the test set
y_pred = dt_model.predict(X_test)

# Evaluate the model
accuracy = accuracy_score(y_test, y_pred)
conf_matrix = confusion_matrix(y_test, y_pred)
class_report = classification_report(y_test, y_pred)

print(f'Accuracy: {accuracy}')
print('Confusion Matrix:')
print(conf_matrix)
print('Classification Report:')
print(class_report)
```

```
   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
       sepal_length  sepal_width  petal_length  petal_width
count    150.000000   150.000000    150.000000   150.000000
mean       5.843333     3.057333      3.758000     1.199333
std        0.828066     0.435866      1.765298     0.762238
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
sepal_length    0
sepal_width     0
petal_length    0
petal_width     0
species         0
dtype: int64
```






```
Accuracy: 1.0
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```
Accuracy: 1.0
Confusion Matrix:
[[10  0  0]
 [ 0  9  0]
 [ 0  0 11]]
Classification Report:
              precision    recall  f1-score   support

           0       1.00      1.00      1.00        10
           1       1.00      1.00      1.00         9
           2       1.00      1.00      1.00        11

    accuracy                           1.00        30
   macro avg       1.00      1.00      1.00        30
weighted avg       1.00      1.00      1.00        30
```