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import pandas as pd
import numpy as np
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.ensemble import RandomForestClassifier
from sklearn.metrics import accuracy_score, classification_report, confusion_matrix
# Load the Iris dataset (you can also download it from various sources including scikit-learn)
from sklearn.datasets import load_iris
iris = load_iris()

# Create a DataFrame
data = pd.DataFrame(data= np.c_[iris['data'], iris['target']], columns= iris['feature_names'] + ['target'])

# Explore the dataset
print(data.head())
# Split the dataset into features (X) and target labels (y)
X = data.drop('target', axis=1)
y = data['target']

# Split the data into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Standardize the features (scaling)
scaler = StandardScaler()
X_train = scaler.fit_transform(X_train)
X_test = scaler.transform(X_test)
# Create a Random Forest Classifier
clf = RandomForestClassifier(n_estimators=100, random_state=42)

# Train the classifier
clf.fit(X_train, y_train)
# Predict on the test set
y_pred = clf.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(f"Confusion Matrix:\n{conf_matrix}")
print(f"Classification Report:\n{class_report}")

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[]

```

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	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	0.0
1	0.0
2	0.0
3	0.0
4	0.0

Accuracy: 1.0

Confusion Matrix:

```
[[10 0 0]
 [ 0 9 0]
 [ 0 0 11]]
```

Classification Report:

	precision	recall	f1-score	support
0.0	1.00	1.00	1.00	10
1.0	1.00	1.00	1.00	9
2.0	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