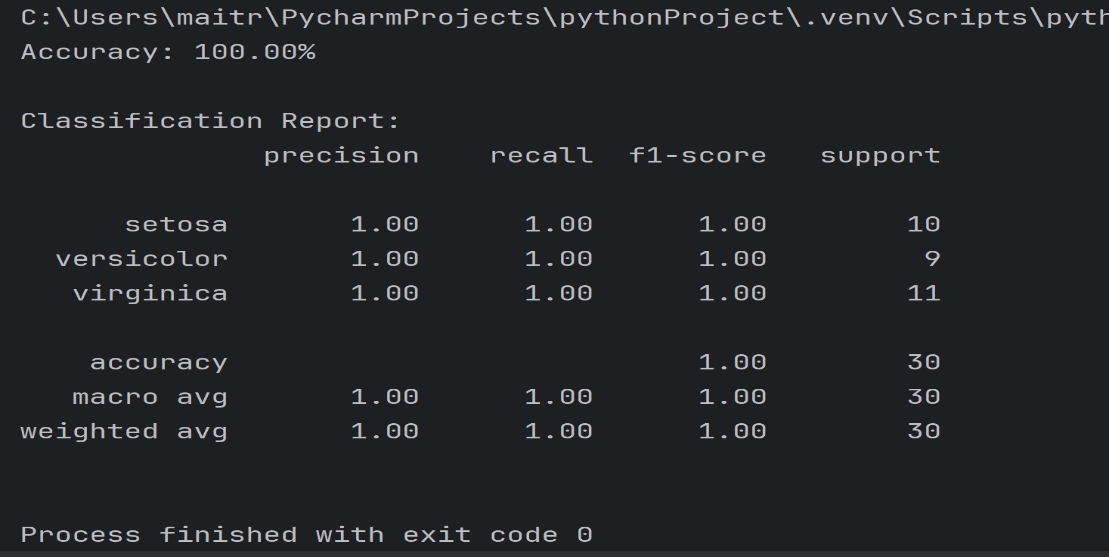
**PRACTICAL 7**

# AIM: Random Forest

**INPUT:**

# Import necessary libraries  
from sklearn.datasets import load\_iris  
from sklearn.model\_selection import train\_test\_split  
from sklearn.ensemble import RandomForestClassifier  
from sklearn.metrics import accuracy\_score, classification\_report  
  
# Step 1: Load the Iris dataset  
iris = load\_iris()  
X = iris.data # Features: Sepal length, Sepal width, Petal length, Petal width  
y = iris.target # Labels: Iris Setosa, Iris Versicolour, Iris Virginica  
  
# Step 2: Split the data into training and testing sets (80% training, 20% testing)  
X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=42)  
  
# Step 3: Initialize the Random Forest classifier  
rf\_clf = RandomForestClassifier(n\_estimators=100, random\_state=42)  
  
# Step 4: Train the classifier  
rf\_clf.fit(X\_train, y\_train)  
  
# Step 5: Predict the labels for the test data  
y\_pred = rf\_clf.predict(X\_test)  
  
# Step 6: Evaluate the classifier’s performance  
accuracy = accuracy\_score(y\_test, y\_pred)  
print(f’Accuracy: {accuracy \* 100:.2f}%’)  
  
# Step 7: Display the classification report (precision, recall, F1-score)  
print(“\nClassification Report:”)  
print(classification\_report(y\_test, y\_pred, target\_names=iris.target\_names))

**OUTPUT:**

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