15. Write the python program to implement Decision Tree.

**AIM :** program to implement Decision Tree.

**ALGORITHM :**

1. We import the necessary modules: ‘load\_iris’ to load the dataset, ‘train\_test\_split’ to split the dataset into training and testing sets, ‘DecisionTreeClassifier’ to create a Decision Tree classifier, and ‘accuracy\_source’ to calculate the accuracy of predictions.
2. We load the iris dataset and split it into features (‘X’) and target labels (‘Y’).
3. We split the dataset into training and testing sets using ‘train\_test\_split’.
4. We create a Decision Tree classifier (‘clf’) using the ‘DecisionTreeClassifier’ class.
5. We train the classifier on the training data using the ‘fit’ method.
6. We use the trained classifier to make predictions on the test data using the ‘predict’

method.

**PROGRAM :**

from sklearn.datasets import load\_iris

from sklearn.model\_selection import train\_test\_split

from sklearn.tree import DecisionTreeClassifier

from sklearn.metrics import accuracy\_score

iris = load\_iris()

X = iris.data

y = iris.target

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=42)

clf = DecisionTreeClassifier()

clf.fit(X\_train, y\_train)

y\_pred = clf.predict(X\_test)

accuracy = accuracy\_score(y\_test, y\_pred)

print("Accuracy:", accuracy)

**OUT PUT :**

Accuracy: 1.0