PROGRAM-17

DECISION TREE PROBLEM

AIM:-

To write and execute the python program for the Decision tree program.

PROCEDURE:-

Import Required Libraries:

- Import the necessary modules from scikit-learn.

Load the Dataset:

- Load the Iris dataset using load_iris() function.

Split Dataset:

- Split the dataset into training and testing sets using train_test_split() function.

Initialize and Train the Classifier:

- Initialize the Decision Tree classifier using DecisionTreeClassifier() function.
- Train the classifier on the training data using fit() method.

Evaluate Model Performance:

- Calculate the accuracy of the classifier using accuracy_score() function.

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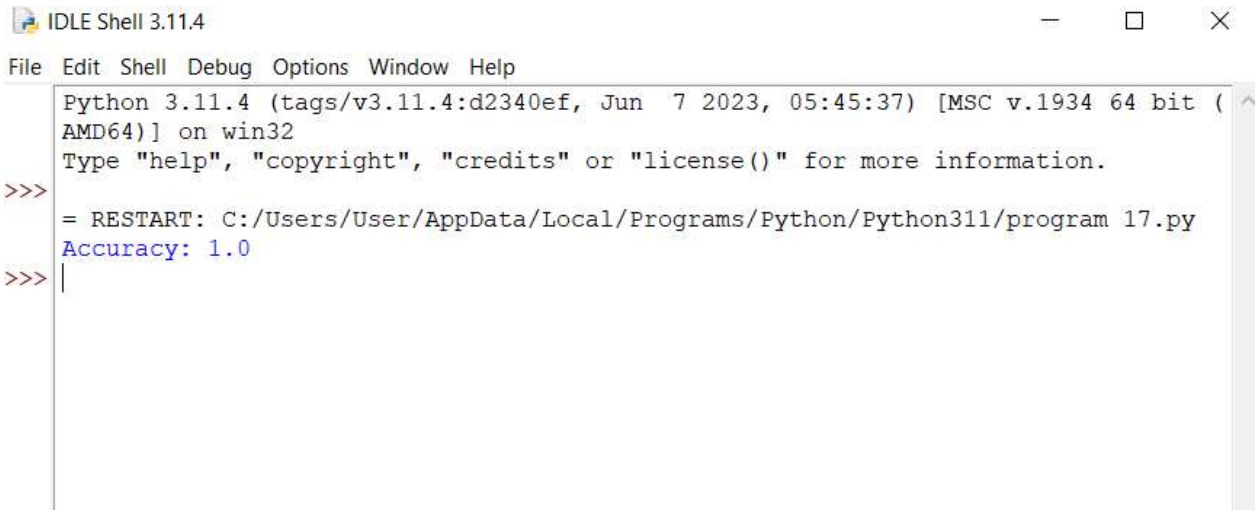
CODING:-

```
from sklearn.datasets import load_iris

from sklearn.tree import DecisionTreeClassifier

from sklearn.model_selection import train_test_split

from sklearn.metrics import accuracy_score

iris = load_iris()

X, y = iris.data, iris.target

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, 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)
```

OUTPUT:-



RESULT:-

Hence the program has been successfully executed and verified.