**Decision Tree Classifier for Iris Dataset**

**Aim**

To implement a Decision Tree classifier using the Iris dataset from sklearn and predict the class of a flower based on its features (sepal length, sepal width, petal length, and petal width).

**Procedure**

1. Load the Iris dataset using sklearn.datasets.load\_iris().
2. Split the dataset into features (X) and target labels (y).
3. Train a DecisionTreeClassifier on the dataset.
4. Ask the user to input the features of the flower (sepal length, sepal width, petal length, petal width).
5. Use the trained model to predict the flower class based on the user's input.
6. Output the predicted flower class.

**Program**

from sklearn.datasets import load\_iris

from sklearn.tree import DecisionTreeClassifier

# Load dataset and train model

data = load\_iris()

X, y = data.data, data.target

model = DecisionTreeClassifier()

model.fit(X, y)

# Ask user for input

print("Enter flower features (sepal length, sepal width, petal length, petal width):")

features = [float(input(f"{name}: ")) for name in data.feature\_names]

# Predict and show result

prediction = model.predict([features])

print("Predicted class:", data.target\_names[prediction[0]])

**Input**

Enter flower features (sepal length, sepal width, petal length, petal width):

sepal length: 5.1

sepal width: 3.5

petal length: 1.4

petal width: 0.2

**Output**

Predicted class: setosa

**Result**

The program successfully predicts the class of the flower based on the input features using the Decision Tree Classifier. It classifies the flower as "setosa" for the given input.