

## Code & OUTPUT

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In [1]: print("Experiment No 07 : To implement decision tree using CART algorithm.")
```

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```
In [4]: # Import necessary libraries
from sklearn.tree import DecisionTreeClassifier
from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score, classification_report

# Load a sample dataset (Iris dataset for this example)
data = load_iris()
X = data.data
y = data.target

# Split the dataset into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)

# Initialize the Decision Tree Classifier with CART algorithm
# criterion="gini" for CART (classification)
model = DecisionTreeClassifier(criterion="gini", random_state=42)

# Fit the model
model.fit(X_train, y_train)

# Predict on the test set
y_pred = model.predict(X_test)

print("OUTPUT:\n\n")

# Evaluate the model
accuracy = accuracy_score(y_test, y_pred)
report = classification_report(y_test, y_pred)

print("Accuracy:", accuracy)
print("Classification Report:\n", report)
```

OUTPUT:

Accuracy: 1.0

Classification Report:

	precision	recall	f1-score	support
0	1.00	1.00	1.00	19
1	1.00	1.00	1.00	13
2	1.00	1.00	1.00	13
accuracy			1.00	45
macro avg	1.00	1.00	1.00	45
weighted avg	1.00	1.00	1.00	45

```
In [ ]:
```