Experiment No 9

Implementation of Multiclass Classification

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from sklearn import datasets
from sklearn.metrics import confusion_matrix, accuracy_score
from sklearn.model_selection import train_test_split
from sklearn.tree import DecisionTreeClassifier
iris = datasets.load_iris()
X = iris.data
y = iris.target
X_train, X_test, y_train, y_test = train_test_split(X, y, random_state=0)
dtree_model = DecisionTreeClassifier(max_depth=2, random_state=0)
dtree_model.fit(X_train, y_train)
y_pred = dtree_model.predict(X_test)
cm = confusion_matrix(y_test, y_pred)
acc = accuracy_score(y_test, y_pred)
print("Confusion Matrix:")
print(cm)
print("\nAccuracy:", round(acc * 100, 2), "%")
```

Output:

```
Confusion Matrix:
[[13  0  0]
 [ 0 16  2]
 [ 0  1  6]]

Accuracy: 94.74 %
```