



Experiment 7

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Branch:CSE Semester: 5th

Subject Name: Machine Learning Lab

UID: 20BCS1812

Section/Group: 20BCS_WM-702A
Date of Performance: 26/10/2022

Subject Code: 20CSP-317

Aim/Overview of the practical:

Implement Decision Tree on any dataset.

Task to be done:

To implement Decision Tree on any data set.

Apparatus/Simulator Used:

- Google Collab
- Python
- .csv file





Code and Output:

```
[1] import pandas as pd
    from sklearn.datasets import load_iris
    from sklearn.model_selection import train_test_split
    from sklearn.tree import DecisionTreeClassifier
    from sklearn.metrics import classification_report
    from sklearn import tree as t
    import matplotlib.pyplot as plt
    %matplotlib inline
iris=load_iris()
    dir(iris)
'data_module',
     'feature_names',
     'filename',
     'frame',
'target',
     'target_names']
[3] df=pd.DataFrame(iris.data, columns=iris.feature_names)
    df["target"]=iris.target
```

```
[5] x=df.drop(["target"], axis="columns")
y=df.target
x_train, x_test, y_train, y_test=train_test_split(x,y,test_size=0.20)
model-becisionTreeClassifier(max_depth=2)
model.fit(x_train,y_train) #training the model
    ypred=model.predict(x_test)
plt.figure(figsize=(15,10))
t.plot_tree(model, filled=True)
plt.show()
                               X[3] \le 0.8
                               gini = 0.667
                             samples = 120
                        value = [41, 39, 40]
                                                 X[2] \le 4.75
               gini = 0.0
                                                    gini = 0.5
           samples = 41
                                                 samples = 79
        value = [41, 0, 0]
                                            value = [0, 39, 40]
                                                                     gini = 0.198
                                 gini = 0.0
                              samples = 34
                                                                   samples = 45
                                                                value = [0, 5, 40]
                           value = [0, 34, 0]
```





Learning outcomes (What I have learnt):

- 1. Learnt how to implement Decision Tree.
- 2. Learnt about numpy, seaborn, pandas libraries.
- 3. Learnt how to analyse using Decision Tree.

Evaluation Grid:

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Student Performance (Conduct of experiment) objectives/Outcomes.		12
2.	Viva Voce		10
3.	Submission of Work Sheet (Record)		8
	Total		30

