Ex.No-9 **DecisionTree**

Aim:

ToimplementDecisiontree machinelearningalgorithm.

Description:

1. ImportDecisiontreeclassifierthroughsklearn

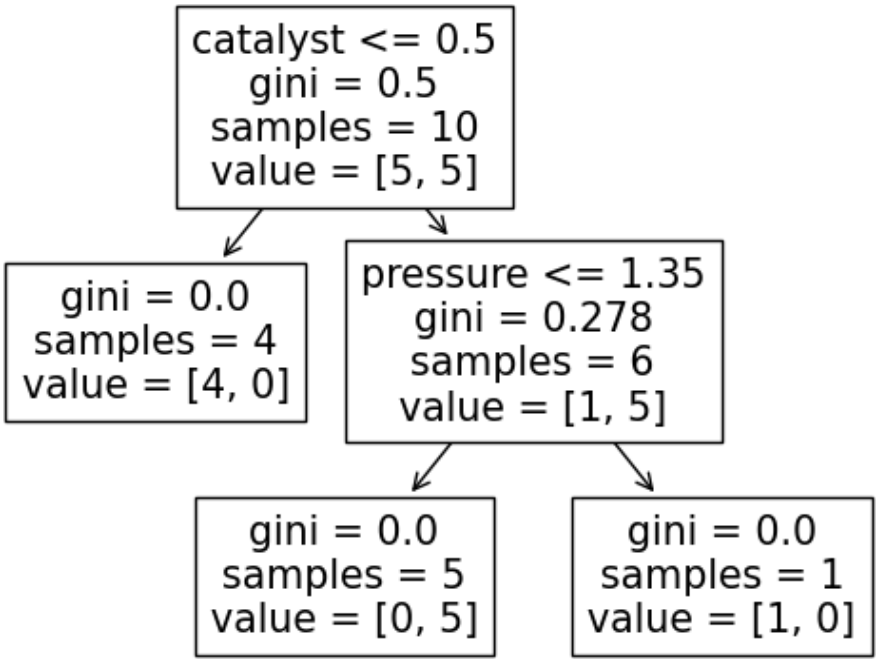
2. ProvidethenecessarydatasetthroughCSVfile

3. Asper thetraineddataset,decisiontreecanbeobtained.

Program:

```
importpandasaspd
import matplotlib.pyplot as
pltfromsklearnimporttree
fromsklearn.treeimportDecisionTreeClassifier#
LoadData
df=pd.read_csv('DT1.csv')p
rint(df)
#PrepareData
d={"A":0,"B":1,"C":2}
df['catalyst']=df['catalyst'].map(d)
d={"yes":0,"no":1}
df['requirement']=df['requirement'].map(d)
features=['temperature','pressure','catalyst','reaction_time','yield']x
=df[features]
y=df['requirement']
dtree=DecisionTreeClassifier()d
tree=dtree.fit(x,y)
tree.plot_tree(dtree,feature_names=features)plt.
show()
```

Output:


catalyst <= 0.5
gini = 0.5
samples = 10
value = [5, 5]
gini = 0.0
samples = 4
value = [4, 0]
pressure <= 1.35
gini = 0.278
samples = 6
value = [1, 5]
gini = 0.0
samples = 5
value = [0, 5]
gini = 0.0
samples = 1
value = [1, 0]