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**Experiment No -6**

**Title:- Implementation of Decision Tree**

import pandas as pd

from sklearn.tree import DecisionTreeClassifier

from sklearn.model\_selection import train\_test\_split

from sklearn.metrics import accuracy\_score

# create a pandas dataframe from the given data

data = pd.read\_csv("C:/Users/hp/OneDrive/Desktop/machine learning/Decision\_Tree\_ Dataset.csv")

print(data.head())

# split the data into training and testing sets

X = data.drop('target', axis=1)

y = data['target']

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=42)

print(X\_train, X\_test, y\_train, y\_test)

# build a decision tree model

model = DecisionTreeClassifier()

model.fit(X\_train, y\_train)

from sklearn import tree

from matplotlib import pyplot as plt

fig = plt.figure(figsize=(25,20))

feature\_names = [1,2,3,4,sum]

class\_names = ['yes', 'no']

\_ = tree.plot\_tree(model,feature\_names= feature\_names,class\_names= class\_names,filled=True)

plt.show()

# make predictions on the testing set and calculate accuracy

y\_pred = model.predict(X\_test)

accuracy = accuracy\_score(y\_test, y\_pred)

print('Accuracy:', accuracy)

**Output:-**



