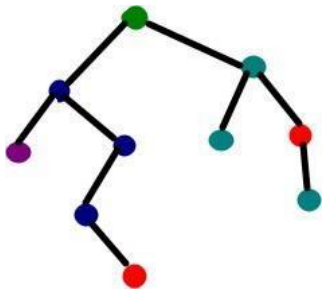
## EX.NO : 12

### IMPLEMENTATION OF DECISION TREE CLASSIFICATION TECHNIQUES

Decision Tree is one of the most powerful and popular algorithm. Decision-tree algorithm falls under the category of supervised learning algorithms. It works for both continuous as well as categorical output variables.



**AIM:**

To implement a decision tree classification technique for gender classification using python.

**EXPLANATION:**

- Import tree from sklearn.
- Call the function DecisionTreeClassifier() from tree
- Assign values for X and Y.
- Call the function predict for Predicting on the basis of given random values for each given feature.
- Display the output.

**CODE :**

```
[ ]  from sklearn import tree
     #Using DecisionTree classifier for prediction
     clf = tree.DecisionTreeClassifier()

     #Here the array contains three values which are height,weight and shoe size
     X = [[181, 80, 91], [182, 90, 92], [183, 100, 92], [184, 200, 93], [185, 300, 94], [186, 400, 95],
     [187, 500, 96], [189, 600, 97], [190, 700, 98], [191, 800, 99], [192, 900, 100], [193, 1000, 101]]
     Y = ['male', 'male', 'female', 'male' , 'female', 'male', 'female' , 'male' , 'female', 'male' , 'female' ,
     'male' ]
     clf = clf.fit(X, Y)

     #Predicting on basis of given random values for each given feature
     predictionf = clf.predict([[181, 80, 91]])
     predictionm = clf.predict([[183, 100, 92]])

     #Printing final prediction
     print(predictionf)
     print(predictionm)
```

**OUTPUT :**

```
['male']
['female']
```

**RESULT :**

Thus, the implementation of Decision Tree Classification Techniques is successfully executed and the output is verified.