EXNO:9 **Date:25/9/2024**

ROLLNO:220701015

IMPLEMENTATION OF DECISION TREE CLASSIFICATION TECHNIQUES

AIM: To implement a decision tree classification technique for gender classification using python

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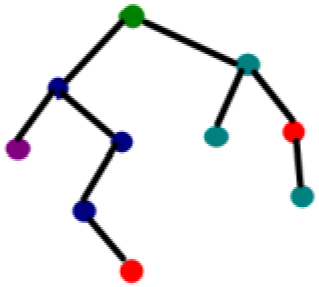
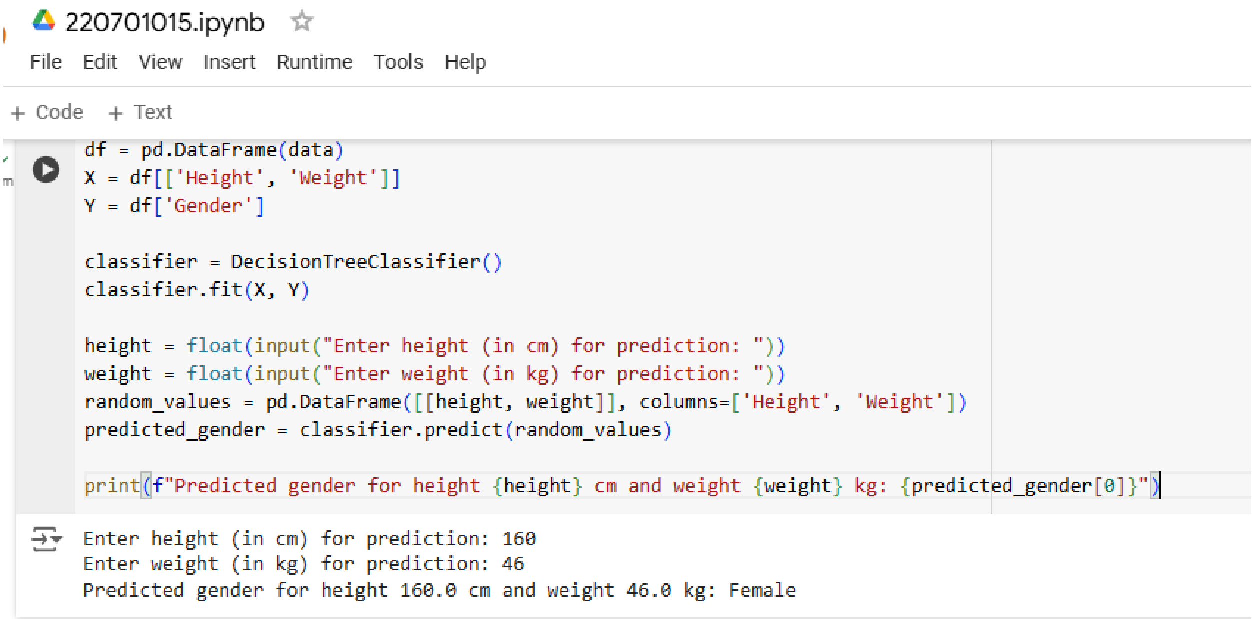


CODE:

```
from sklearn.tree import DecisionTreeClassifier

import numpy as np

X = np.array([
    [170, 65, 42],
    [180, 75, 44],
    [160, 50, 38],
    [175, 70, 43],
    [165, 55, 39],
    [185, 80, 45]
])


Y = np.array([0, 1, 0, 1, 0, 1])


clf = DecisionTreeClassifier()


clf.fit(X, Y)

new_data = np.array([[168, 52, 38]])

prediction = clf.predict(new_data)

print("Predicted gender:", "Male" if prediction[0] == 1 else "Female")
```

OUTPUT:



```
df = pd.DataFrame(data)
X = df[['Height', 'Weight']]
Y = df['Gender']

classifier = DecisionTreeClassifier()
classifier.fit(X, Y)

height = float(input("Enter height (in cm) for prediction: "))
weight = float(input("Enter weight (in kg) for prediction: "))
random_values = pd.DataFrame([[height, weight]], columns=['Height', 'Weight'])
predicted_gender = classifier.predict(random_values)

print(f"Predicted gender for height {height} cm and weight {weight} kg: {predicted_gender[0]}")
```

```
Enter height (in cm) for prediction: 160
Enter weight (in kg) for prediction: 46
Predicted gender for height 160.0 cm and weight 46.0 kg: Female
```