EXNO: 11

DATE:

DECISION TREE CLASSIFICATION

AIM:

To classify the social Network dataset using decision tree Analysis.

SOURCE CODE:

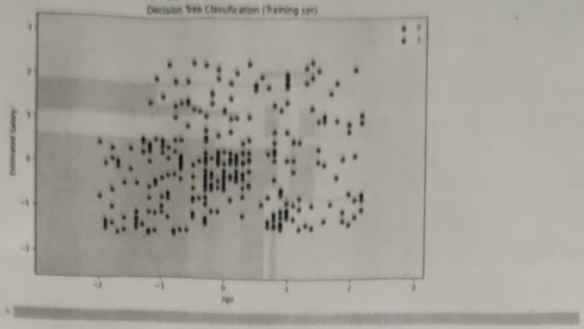
```
from google.colab import drive
drive.mount("/content/gdrive")
import Pandas as Pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
from sklearn.tree import DecisionTreeClassifier
from matplotlib.colors import ListedColormap
dataset = Pd.read_csv('/content/gdrive/MyDrive/Colab Datasets/Social.csv')

X = dataset.iloc[:, [2,3]].values
y = dset.iloc[:, -1].values
X_train, X_test, y_train, y_test = train_test_split
                    (X, y, test_size=0.25, random=0),

sc = standardScaler()
X_train = sc.fit_transform(X_train)
X_test = sc.transform(X_test)
classifier = DecisionTreeClassifier(criterion='entropy'
                                    random_state=0)

classifier.fit(X_train, y_train)
y_pred = classifier.predict(X_test)
cm = confusion_matrix(y_test, y_pred)
print("Confusion Matrix:")
print(cm).
```

```
X_set, y_set = X_train, y_train
X1, X2 = np.meshgrid(
    np.arange(start = X_set[:, 0].min() - 1,
              stop = X_set[:, 0].max() + 1, step = 0.01)
)
plt.figure(figsize = (10, 6)).
cmap_background = ListedColormap(['red', 'green'])
plt.xlim(X1.min(), X1.max())
plt.xlim(X2.min(), X2.max())
for i, j in enumerate(np.unique(y_set)):
    plt.scatter(X_set[y_set == j, 0], X_set[y_set == j, 1]
                c = cmap_points[i], label = j).

plt.title('Decision Tree classification
          (Training set)')

plt.xlabel('Age')
plt.ylabel('Estimated Salary')

plt.legend()
plt.show().
```

OUTPUT:-

```
[ ] import os
    print(os.listdir('/content/gdrive/My Drive'))
    dataset = pd.read_csv('/content/gdrive/My Drive/Colab Datasets/Social_Network_Ads.csv')
    from google.colab import files
    uploaded = files.upload()
    import pandas as pd
    dataset = pd.read_csv('Social_Network_Ads.csv')

    # Step 2a: Mount Google Drive
    from google.colab import drive
    drive.mount("/content/gdrive")
```

```
['Classroom', 'learnathon details.zip', 'DAA assignment 1.pdf', 'oops assignment 1.pdf', 'Batch_2_Data Dash Finals.pdf', 'colab notebooks', 'Batch_
Choose Files  No file chosen    Upload widget is only available when the cell has been executed in the current browser session. Please rerun this cell to enable.
Saving Social_Network_Ads.csv to Social_Network_Ads (2).csv
Drive already mounted at /content/gdrive; to attempt to forcibly remount, call drive.mount("/content/gdrive", force_remount=True).
```



RESULT:-

Thus social network dataset using decision tree analysis is implemented and executed successfully.