* **Logistic Regression Implementation using Python Programming :**

**{**insurance data**}**

**CODE :**

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

from sklearn.metrics import classification\_report, confusion\_matrix

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

from sklearn.linear\_model import LogisticRegression

df = pd.read\_csv("insurance\_data.csv")

print(df)

#extra

age = df['age'].tolist()    # all columns has been converted to list (age is one of column)

bought\_insurance = df['bought\_insurance'].tolist()

df.info()

x = df.iloc[:,:-1].values   # selecting a particular cell of the dataset,

y = df.iloc[:,1].values

x\_train,x\_test,y\_train,y\_test = train\_test\_split(x,y,test\_size = 0.2)

lr = LogisticRegression()

lr.fit(x\_train,y\_train)

y\_pred = lr.predict(x\_test) # testing the algorithm

print("train data's prediction --> ", lr.score(x\_train, y\_train))

print("test data's prediction --> ", lr.score(x\_test, y\_test))

plt.plot(x\_train, y\_train, color='g')

plt.show()

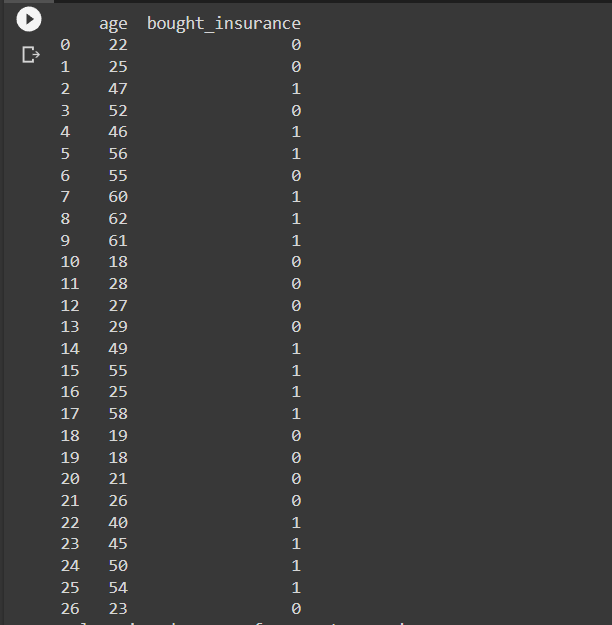
new = [[55]]

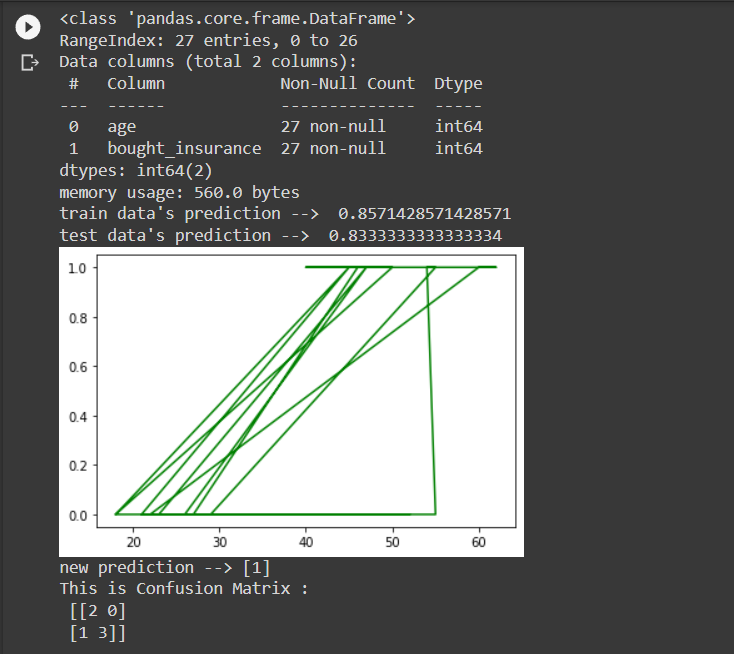
print("new prediction -->", lr.predict(new))

cm = confusion\_matrix(y\_test, y\_pred)

print("This is Confusion Matrix :\n", cm)

**OUTPUT :**

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