Program :-

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score

df = pd.read_csv("/home/student/Desktop/sinan/Heart_disease_cleveland_new.csv")
print(df)

x = df.drop("target", axis = 1)
y = df["target"]

x_train,x_test,y_train,y_test = train_test_split(x,y,test_size=0.2,random_state=0,stratify=y)

model =LogisticRegression()
model.fit(x_train,y_train)

training_data_predictions = model.predict(x_train)
test_data_predictions = model.predict(x_test)

print("Accuracy score on training data is: ", accuracy_score(training_data_predictions,y_train))
print("Accuracy score on test data is: ",accuracy_score(test_data_predictions,y_test))

importance=model.coef_[0]
print('importance \n',importance)

x_train = np.arange(0,len(x_train),1)
plt.scatter(x_train,y_train,color="black")
plt.plot(x_train, training_data_predictions,color="red" ,linewidth=1)
plt.title('logistic regression(test set)')
plt.xlabel('data')
plt.ylabel('condition')
plt.show()
```

Output :-

```
(base) student@cseadmin:~/Desktop/sinan$ python3 logisticregression.py
      age  sex  cp  trestbps  chol  fbs  restecg  thalach  exang  oldpeak  slope  ca  thal
target
0      63    1   0       145   233    1        2      150      0      2.3      2   0     2
0
1      67    1   3       160   286    0        2      108      1      1.5      1   3     1
1
2      67    1   3       120   229    0        2      129      1      2.6      1   2     3
1
3      37    1   2       130   250    0        0      187      0      3.5      2   0     1
0
4      41    0   1       130   204    0        2      172      0      1.4      0   0     1
0
..    ...  ...  ..       ...   ...  ...      ...      ...    ...      ...    ...  ..   ...
298    45    1   0       110   264    0        0      132      0      1.2      1   0     3
1
299    68    1   3       144   193    1        0      141      0      3.4      1   2     3
1
```

```
300   57    1    3       130   131    0       0     115     1     1.2     1    1     3
1
301   57    0    1       130   236    0       2     174     0     0.0     1    1     1
1
302   38    1    2       138   175    0       0     173     0     0.0     0    0     1
0
[303 rows x 14 columns]

Accuracy score on training data is:    0.8677685950413223
Accuracy score on test data is:    0.8360655737704918

importance
 [-0.02834151   1.00064822   0.37587968   0.00972453   0.0029732   -0.37032768
   0.3209328   -0.03200828   0.83455141   0.10087814   0.52969229   1.18925721
   0.61105903]
(base) student@cseadmin:~/Desktop/sinan$
```