

Pract 5

```
import pandas as pd
import numpy as np
df = pd.read_csv("Social_Network_Ads.csv")
df
df["Gender"].replace({"Male":0, "Female":1}, inplace=True)
Df

from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import confusion_matrix, accuracy_score, precision_score, recall_score
df.columns

x = df[['User ID', 'Gender', 'Age', 'EstimatedSalary']]
x
y = df[['Purchased']]
y
#y is dependent on values of x

x_train, x_test, y_train, y_test = train_test_split(x,y,test_size=0.25,random_state=42)
model = LogisticRegression()
model.fit(x_train, y_train)

y_pred = model.predict(x_test)
y_pred

model.score(x_train, y_train)
model.score(x,y)

cm = confusion_matrix(y_test, y_pred) //confusion matrix
cm

print(confusion_matrix.__doc__)

tn, fp, fn, tp = confusion_matrix(y_test, y_pred).ravel()
print(tn, fp, fn, tp)

a = accuracy_score(y_test, y_pred)
#measures how often a machine learning model correctly predicts the outcome.
#You can calculate accuracy by dividing the number of correct predictions by the total number of
predictions.
a

e = 1-a
e
#error score

precision_score(y_test, y_pred)
#measures the percentage of predictions made by the model that are correct

recall_score(y_test, y_pred)
#measures the percentage of relevant data points that were correctly identified by the model
```