

```
In [3]: import pandas as pd
import numpy as np
```

```
In [4]: df=pd.read_csv('Social_Network_Ads.csv')
df
```

Out[4]:

	User ID	Gender	Age	EstimatedSalary	Purchased
0	15624510	Male	19.0	19000.0	0
1	15810944	Male	35.0	20000.0	0
2	15668575	Female	26.0	43000.0	0
3	15603246	Female	27.0	57000.0	0
4	15804002	Male	19.0	76000.0	0
...
395	15691863	Female	46.0	41000.0	1
396	15706071	Male	51.0	23000.0	1
397	15654296	Female	50.0	20000.0	1
398	15755018	Male	36.0	33000.0	0
399	15594041	Female	49.0	36000.0	1

400 rows × 5 columns

```
In [5]: df.drop(['User ID','Gender'],inplace=True,axis=1)
df
```

Out[5]:

	Age	EstimatedSalary	Purchased
0	19.0	19000.0	0
1	35.0	20000.0	0
2	26.0	43000.0	0
3	27.0	57000.0	0
4	19.0	76000.0	0
...
395	46.0	41000.0	1
396	51.0	23000.0	1
397	50.0	20000.0	1
398	36.0	33000.0	0
399	49.0	36000.0	1

400 rows × 3 columns

```
In [6]: y=df['Purchased']
y
```

```
Out[6]: 0      0
        1      0
        2      0
        3      0
        4      0
        ..
       395     1
       396     1
       397     1
       398     0
       399     1
Name: Purchased, Length: 400, dtype: int64
```

```
In [7]: x=df.drop('Purchased',axis=1)
        x
```

Out[7]:

	Age	EstimatedSalary
0	19.0	19000.0
1	35.0	20000.0
2	26.0	43000.0
3	27.0	57000.0
4	19.0	76000.0
...
395	46.0	41000.0
396	51.0	23000.0
397	50.0	20000.0
398	36.0	33000.0
399	49.0	36000.0

400 rows × 2 columns

```
In [8]: from sklearn.model_selection import train_test_split
        x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.25,random_state=42)
        x_train
```

Out[8]:

	Age	EstimatedSalary
250	44.0	39000.0
63	32.0	120000.0
312	38.0	50000.0
159	32.0	135000.0
283	52.0	21000.0
...
323	48.0	30000.0
192	29.0	43000.0
117	36.0	52000.0
47	27.0	54000.0
172	26.0	118000.0

300 rows × 2 columns

```
In [9]: from sklearn.preprocessing import StandardScaler
std=StandardScaler()
x_test=std.fit_transform(x_test)
x_test
x_train=std.fit_transform(x_train)
x_train
```

```
Out[9]: array([[ 0.58164944, -0.88670699],
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```

```
In [10]: from sklearn.linear_model import LogisticRegression
model=LogisticRegression()
model.fit(x_train,y_train)
y_pred=model.predict(x_test)
y_pred
```

```
Out[10]: array([0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1,
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```

```
In [11]: from sklearn.metrics import confusion_matrix,accuracy_score,precision_score
acc_s=accuracy_score(y_pred,y_test)
acc_s
```

```
Out[11]: 0.87
```



```
In [12]: P_s=precision_score(y_pred,y_test)
P_s
R_s=recall_score(y_pred,y_test)
R_s
print(classification_report(y_pred,y_test))
```

	precision	recall	f1-score	support
0	0.93	0.89	0.91	71
1	0.75	0.83	0.79	29
accuracy			0.87	100
macro avg	0.84	0.86	0.85	100
weighted avg	0.88	0.87	0.87	100

```
In [ ]:
```