

In [1]: *# importing the necessary libraries*

```
import pandas as pd
from matplotlib import pyplot as plt
%matplotlib inline
```

In [2]: *# read the data file*

```
df = pd.read_csv(r"C:\Users\309962\Desktop\insurance_data.csv")
df.head()
```

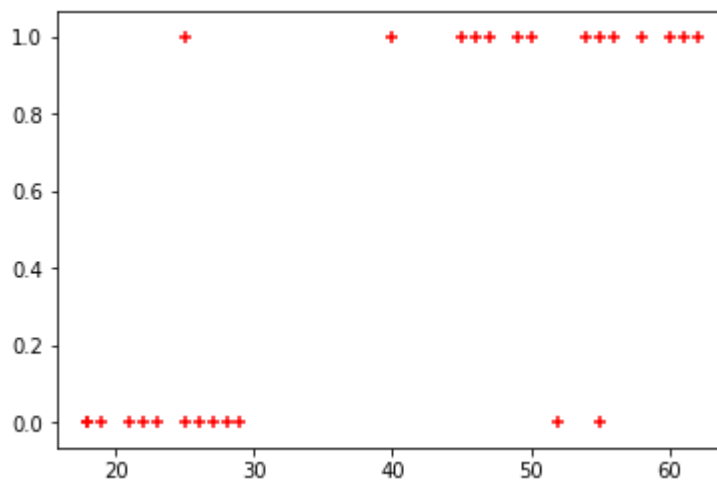
Out[2]:

	age	bought_insurance
0	22	0
1	25	0
2	47	1
3	52	0
4	46	1

In [3]: *# plot data on a scatter plot*

```
plt.scatter(df.age,df.bought_insurance,marker='+',color='red')
```

Out[3]: <matplotlib.collections.PathCollection at 0x168b70b9390>



In [4]: *# create a train and test dataset from sklearn*

```
from sklearn.model_selection import train_test_split
```

```
In [5]: X_train, X_test, y_train, y_test = train_test_split(df[['age']],df.bought_insuran
```

```
C:\ProgramData\Anaconda3\lib\site-packages\sklearn\model_selection\_split.py:20  
26: FutureWarning: From version 0.21, test_size will always complement train_si  
ze unless both are specified.  
FutureWarning)
```

```
In [6]: X_test
```

Out[6]:

	age
15	55
25	54
24	50

```
In [7]: # create a logistic regression model object  
from sklearn.linear_model import LogisticRegression  
model = LogisticRegression()
```

```
In [8]: # train the model object with train dataset  
model.fit(X_train, y_train)
```

Out[8]: LogisticRegression(C=1.0, class_weight=None, dual=False, fit_intercept=True, intercept_scaling=1, max_iter=100, multi_class='ovr', n_jobs=1, penalty='l2', random_state=None, solver='liblinear', tol=0.0001, verbose=0, warm_start=False)

```
In [9]: X_test
```

Out[9]:

	age
15	55
25	54
24	50

```
In [10]: # Check the predicted value from machine learning model  
y_predicted = model.predict(X_test)
```

```
In [11]: # Predict the propabablity of purchasing an insurance policy  
model.predict_proba(X_test)
```

Out[11]: array([[0.27501496, 0.72498504],
[0.28482804, 0.71517196],
[0.32609841, 0.67390159]])

```
In [12]: # check the accuracy of our model  
model.score(X_test,y_test)
```

Out[12]: 1.0

```
In [13]: X_test
```

Out[13]:

	age
15	55
25	54
24	50

```
In [ ]:
```