In [1]:
```
# Aim: To perform and find the accuracy of Logistic Regression
```

In [2]:
```
# Name : Shriya Mechineni
# class : 3rd year
# Section : A
# Roll No. : 49
```

In [3]:
```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
import seaborn as sns
from sklearn.model_selection import train_test_split
import warnings
warnings.filterwarnings('ignore')
```

In [4]:
```
import os
```

In [5]:
```
os.getcwd()
```

Out[5]:
```
'C:\\Users\\admin'
```

In [6]:
```
os.chdir("C:\\Users\\admin\\Desktop")
```

In [7]:
```
df=pd.read_csv("iris.csv")
```

In [8]:
```
df.head()
```

Out[8]:

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa

In [9]:
```
df.describe()
```

Out[9]:

	sepal_length	sepal_width	petal_length	petal_width
count	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.054000	3.758667	1.198667
std	0.828066	0.433594	1.764420	0.763161
min	4.300000	2.000000	1.000000	0.100000
25%	5.100000	2.800000	1.600000	0.300000
50%	5.800000	3.000000	4.350000	1.300000
75%	6.400000	3.300000	5.100000	1.800000
max	7.900000	4.400000	6.900000	2.500000

In [10]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 5 columns):
 #   Column        Non-Null Count  Dtype  
---  ------        --------------  -----  
 0   sepal_length  150 non-null    float64
 1   sepal_width   150 non-null    float64
 2   petal_length  150 non-null    float64
 3   petal_width   150 non-null    float64
 4   species       150 non-null    object 
dtypes: float64(4), object(1)
memory usage: 6.0+ KB
```

In [11]:
```
df.isna().sum()
```

Out[11]:
```
sepal_length    0
sepal_width     0
petal_length    0
petal_width     0
species         0
dtype: int64
```

In [12]:
```
df
```

Out[12]:

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa
...	...	...	...	...	...
145	6.7	3.0	5.2	2.3	virginica
146	6.3	2.5	5.0	1.9	virginica
147	6.5	3.0	5.2	2.0	virginica
148	6.2	3.4	5.4	2.3	virginica
149	5.9	3.0	5.1	1.8	virginica

150 rows × 5 columns

Train Test Split

In [13]:
```
x = np.arange(1,25).reshape(12,2)
y = np.array([0,1,1,0,1,0,0,1,1,0,1,0])
```

In [14]:
```
x_train,x_test,y_train,y_test = train_test_split(x,y,test_size=0.2,random_state=42)
```

In [15]:
```
x_train
```

Out[15]:
```
array([[17, 18],
       [11, 12],
       [ 5,  6],
       [ 3,  4],
       [23, 24],
       [ 9, 10],
       [15, 16],
       [ 7,  8],
       [13, 14]])
```

In [16]:
```
x_test
```

Out[16]:
```
array([[21, 22],
       [19, 20],
       [ 1,  2]])
```

In [17]:
```
y_train
```

Out[17]:
```
array([1, 0, 1, 1, 0, 1, 1, 0, 0])
```

In [18]:
```
y_test
```

Out[18]:
```
array([1, 0, 0])
```

Logistic Regression Algorithm

In [19]:
```
from sklearn.linear_model import LogisticRegression
model = LogisticRegression().fit(x_train,y_train)
model.score(x_train, y_train)
```

Out[19]:
```
0.4444444444444444
```

In [ ]:
```

```