In [28]:
```
import pandas as pd
import numpy as np
from sklearn.linear_model import LogisticRegression
from sklearn.preprocessing import StandardScaler
```

In [29]:
```
df=pd.read_csv(r"C:\Users\Niranjan\Downloads\ionosphere.csv")
df
```

Out[29]:

| | column_a | column_b | column_c | column_d | column_e | column_f | column_g | column_ |
|---|---|---|---|---|---|---|---|---|
| 0 | True | False | 0.99539 | -0.05889 | 0.85243 | 0.02306 | 0.83398 | -0.377( |
| 1 | True | False | 1.00000 | -0.18829 | 0.93035 | -0.36156 | -0.10868 | -0.935( |
| 2 | True | False | 1.00000 | -0.03365 | 1.00000 | 0.00485 | 1.00000 | -0.120( |
| 3 | True | False | 1.00000 | -0.45161 | 1.00000 | 1.00000 | 0.71216 | -1.000( |
| 4 | True | False | 1.00000 | -0.02401 | 0.94140 | 0.06531 | 0.92106 | -0.232( |
| 5 | True | False | 0.02337 | -0.00592 | -0.09924 | -0.11949 | -0.00763 | -0.118( |
| 6 | True | False | 0.97588 | -0.10602 | 0.94601 | -0.20800 | 0.92806 | -0.283( |
| 7 | False | False | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 1.00000 | -1.000( |
| 8 | True | False | 0.96355 | -0.07198 | 1.00000 | -0.14333 | 1.00000 | -0.213( |
| 9 | True | False | -0.01864 | -0.08459 | 0.00000 | 0.00000 | 0.00000 | 0.000( |

In [30]:
```
pd.set_option('display.max_rows',10000000000)
pd.set_option('display.max_columns',10000000000)
pd.set_option('display.width',95)
```

In [31]:
```
print('This DataFrame has %d Rows and %d Columns'%(df.shape))
```

```
This DataFrame has 351 Rows and 35 Columns
```

In [32]:
```
df.head()
```

Out[32]:

| | column_a | column_b | column_c | column_d | column_e | column_f | column_g | column_h | colu |
|---|---|---|---|---|---|---|---|---|---|
| 0 | True | False | 0.99539 | -0.05889 | 0.85243 | 0.02306 | 0.83398 | -0.37708 | 1.( |
| 1 | True | False | 1.00000 | -0.18829 | 0.93035 | -0.36156 | -0.10868 | -0.93597 | 1.( |
| 2 | True | False | 1.00000 | -0.03365 | 1.00000 | 0.00485 | 1.00000 | -0.12062 | 0.8 |
| 3 | True | False | 1.00000 | -0.45161 | 1.00000 | 1.00000 | 0.71216 | -1.00000 | 0.( |
| 4 | True | False | 1.00000 | -0.02401 | 0.94140 | 0.06531 | 0.92106 | -0.23255 | 0.7 |

In [33]:
```
features_matrix=df.iloc[:,0:34]
```

In [34]:
```
target_vector=df.iloc[:,-1]
```

In [35]:
```
print('The Features Matrix Has %d Rows And %d Columns'%(features_matrix.shape
print('The Features Matrix Has %d Rows And %d Columns'%(np.array(target_vecto
```

```
The Features Matrix Has 351 Rows And 34 Columns
The Features Matrix Has 351 Rows And 1 Columns
```

In [36]:
```
features_matrix_standardized=StandardScaler().fit_transform(features_matrix)
```

In [37]:
```
algorithm=LogisticRegression(penalty='l2',dual=False,tol=1e-4,C=1.0,fit_inter
```

In [38]:
```
Logistic_Regression_Model = algorithm.fit(features_matrix_standardized,target
```

In [39]:
```
Observation=[[1,0,0.99539,-0.05889,0.854299999999999,0.02306,0.8339799999999
```

In [40]:
```
predictions=Logistic_Regression_Model.predict(Observation)
print('The Model Predicted The Observation To Belong To Class %s'%(predictior
```

```
The Model Predicted The Observation To Belong To Class ['g']
```

In [41]:
```
print('The Algorithm Was Trained To Predict One Of The Two Classes:%s'%(algor
```

```
The Algorithm Was Trained To Predict One Of The Two Classes:['b' 'g']
```

In [42]:
```
print("""The Model Says The Probability Of The Obsrvation We Passed Belongir
print()
print("""The Model Says The Probability Of The Obsrvation We Passed Belongir
```

```
"The Model Says The Probability Of The Obsrvation We Passed Belonging To Cl
ass['b']Is 0.007759545690606995

"The Model Says The Probability Of The Obsrvation We Passed Belonging To Cl
ass['g']Is 0.992240454309393
```

In [ ]: