

# CS435

First Assignment

Data Prediction (Classification) using Logistic Regression

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## A) What is logistic regression?

logistic regression is a classification algorithm that handles the data that has a specific class -data is labeled- NOT a changing value. For example, is this a cat or a bird picture? NOT 37.2 degrees and 37.1 yes they are close but this is not a classification problem it is linear regression.

## B) The source code is attached

## C) Report the classifier evaluation using cross-validation. Report the accuracy, precision, recall and F1-score.

NOTE: I used the Cross Validation method to the following results:  
Two thirds for training and a third for testing **repeated 3 times.**

```
ACCAUL, PREDECTED CLASS: ** 3 samples **
1.0 : 1.0
0.0 : 0.0
1.0 : 1.0
73.56% accuracy_score
71.43% precision_score
50.51% recall_score
59.17% f1_score
Classifier evaluation using cross-validation:[0.6091954 0.62068966 0.6091954 ]

ACCAUL, PREDECTED CLASS: ** 3 samples **
0.0 : 0.0
0.0 : 0.0
0.0 : 0.0
80.84% accuracy_score
78.33% precision_score
55.95% recall_score
65.28% f1_score
Classifier evaluation using cross-validation:[0.74712644 0.73563218 0.68965517]

ACCAUL, PREDECTED CLASS: ** 3 samples **
1.0 : 0.0
1.0 : 0.0
0.0 : 0.0
71.54% accuracy_score
60.56% precision_score
48.31% recall_score
53.75% f1_score
Classifier evaluation using cross-validation:[0.64367816 0.73563218 0.73255814]
```