

# Accuracy score and confusion matrix

## ACCURACY SCORE

### Accuracy Score

In Classification, **Accuracy Score** is the ratio of **number of correct predictions** to the **total number of input data points**.



$$\text{Accuracy Score} = \frac{\text{Number of correct predictions}}{\text{Total Number of data points}} \times 100 \%$$

Number of correct predictions = 128

Accuracy Score = 85.3 %

Total Number of data points = 150

```
from sklearn.metrics import accuracy_score
```

there is one limitation of accuracy score. when there is uneven distribution of class then accuracy score can be misleading.

### Limitation of Accuracy Score

**Accuracy Score** is not reliable when the dataset has an uneven distribution of classes

Number of dog images = 800

Number of cat images = 200

Number of images predicted as dog = 1000

Number of images predicted as cat = 0

Number of correct predictions = 800

Total Number of data points = 1000

$$\text{Accuracy Score} = \frac{800}{1000} \times 100 \%$$

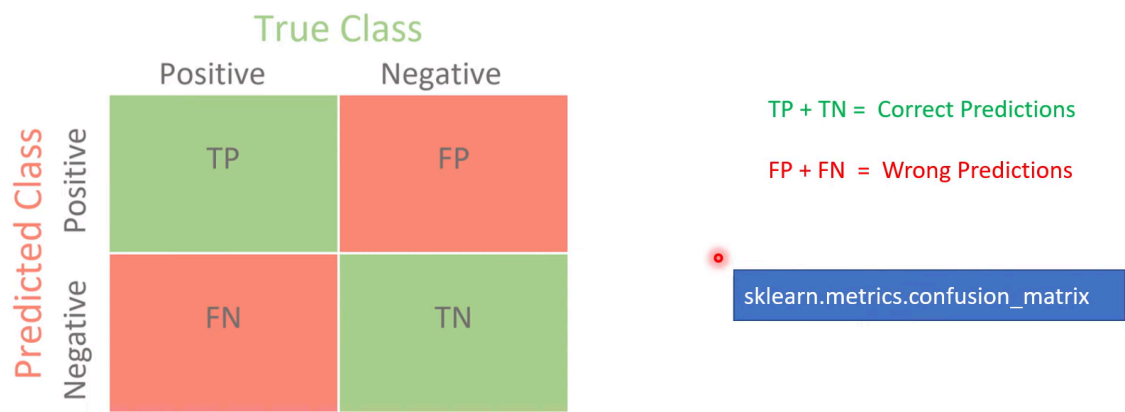
Accuracy Score = 80 %

it predicts that all the images as the images of dog which is wrong and it gives us an accuracy of 80 percent.

# CONFUSION MATRIX

## Confusion Matrix

Confusion Matrix is a matrix used for evaluating the performance of a Classification Model. It gives more information than the accuracy score.



T = true

F = false