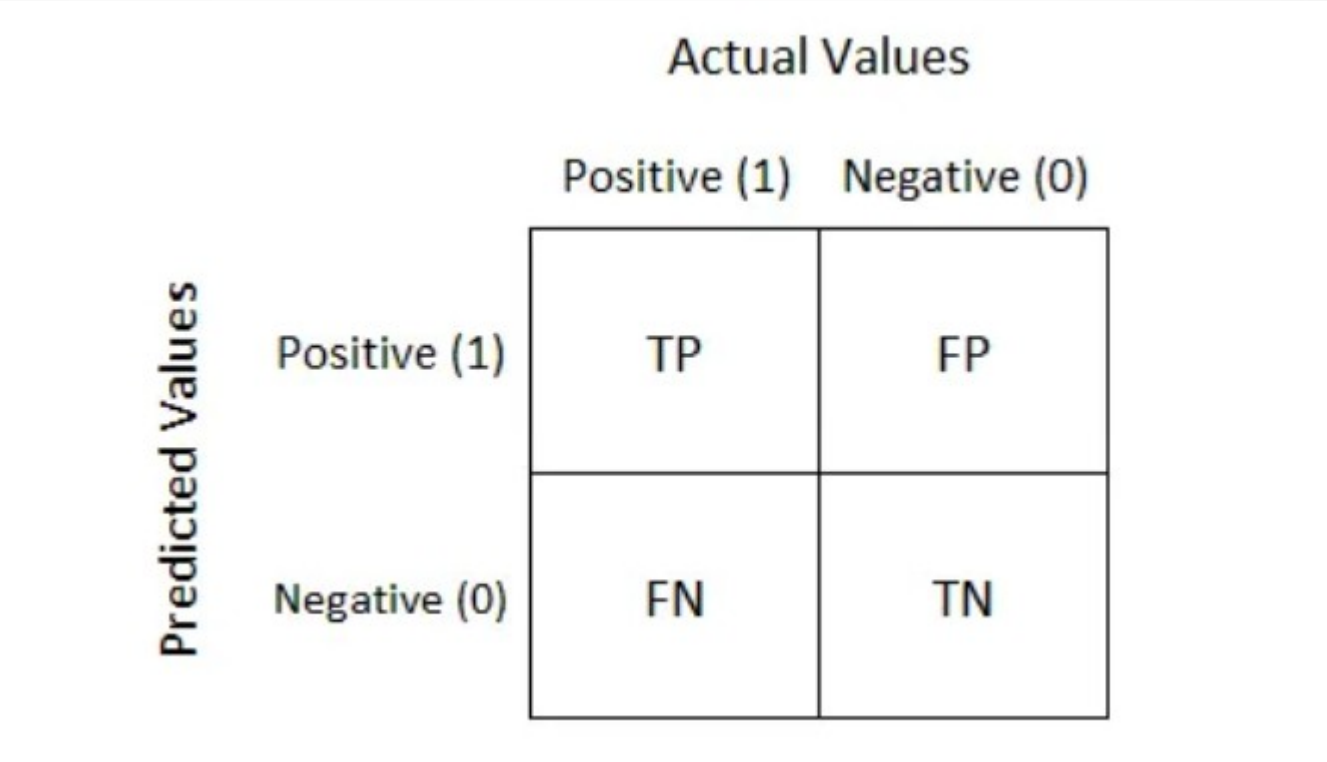
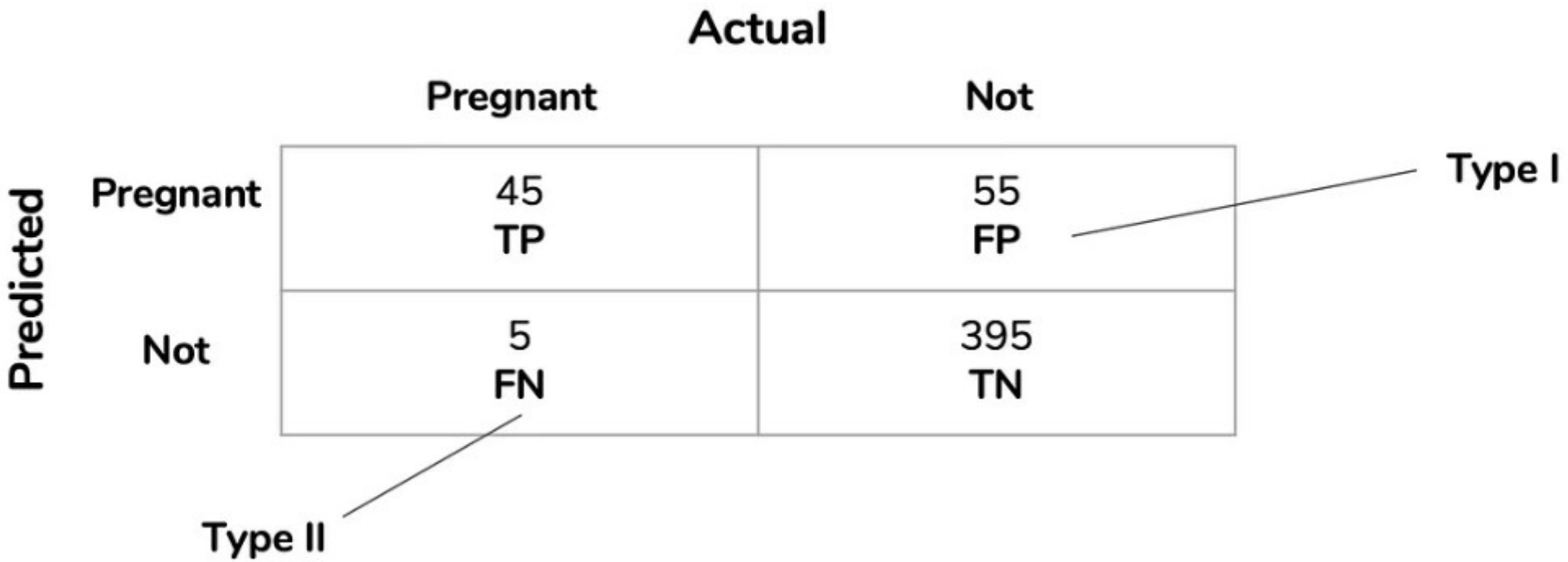
# CONFUSION MATRIX:METRICS

INSTRUCTOR: BALU MOHANDAS MENON

# CONFUSION MATRIX : TP,TN, FP, FN




Actual
Pregnant
Not
Predicted
Pregnant
Not
45
TP
55
FP
5
FN
395
TN
Type I
Type II

1. Accuracy (all **correct** / all) = TP + TN / TP + TN + FP + FN
   (45 + 395) / 500 = 440 / 500 = 0.88 or ***88% Accuracy***
2. Misclassification (all **incorrect** / all) = FP + FN / TP + TN + FP + FN
   (55 + 5) / 500 = 60 / 500 = 0.12 or ***12% Misclassification***
   You can also just do 1 — Accuracy, so: 1–0.88 = 0.12 or ***12% Misclassification***
3. Precision (**true** positives / **predicted** positives) = TP / TP + FP
   45 / (45 + 55) = 45 / 100 = 0.45 or ***45% Precision***
4. Sensitivity aka Recall (**true** positives / all **actual** positives) = TP / TP + FN
   45 / (45 + 5) = 45 / 50 = 0.90 or ***90% Sensitivity***
5. ***F1 score - 2 * (Precision * Recall) / (Precision + Recall)  - Please try the maths to fnd the answer***

- ***Please check the same for Multiclass confusion matrix too***