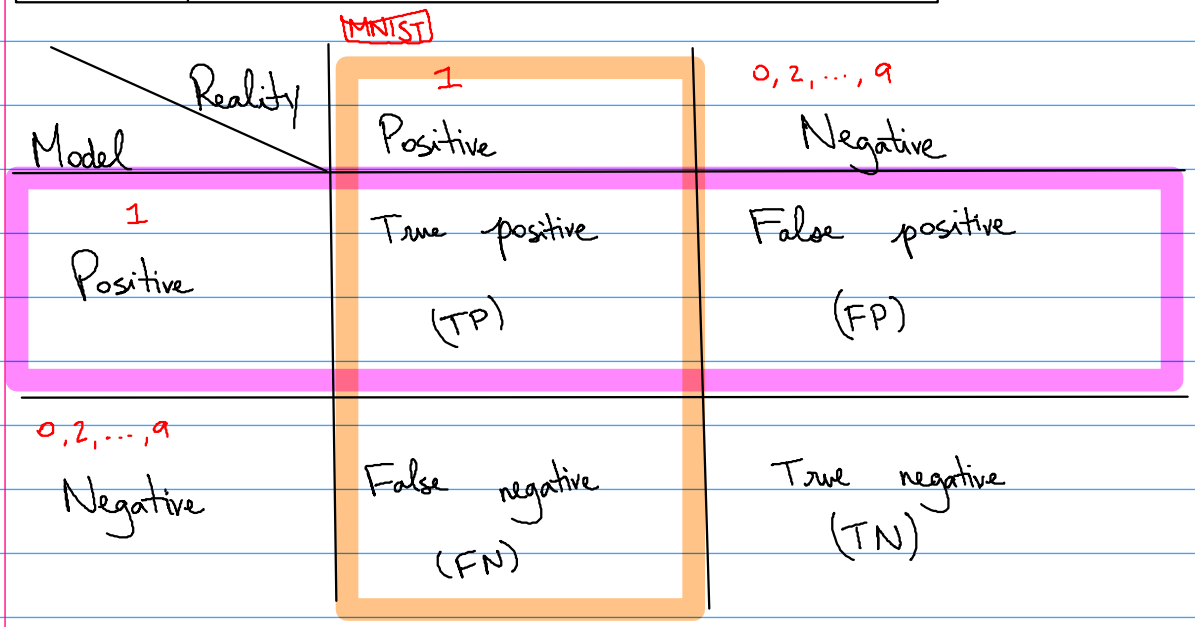
Accuracy vs Precision vs Recall



- Accuracy: overall performance of the model.

$$\frac{TP + TN}{TP + TN + FP + FN}$$

- Precision: performance among positive outputs.

$$\frac{TP}{TP + FP}$$

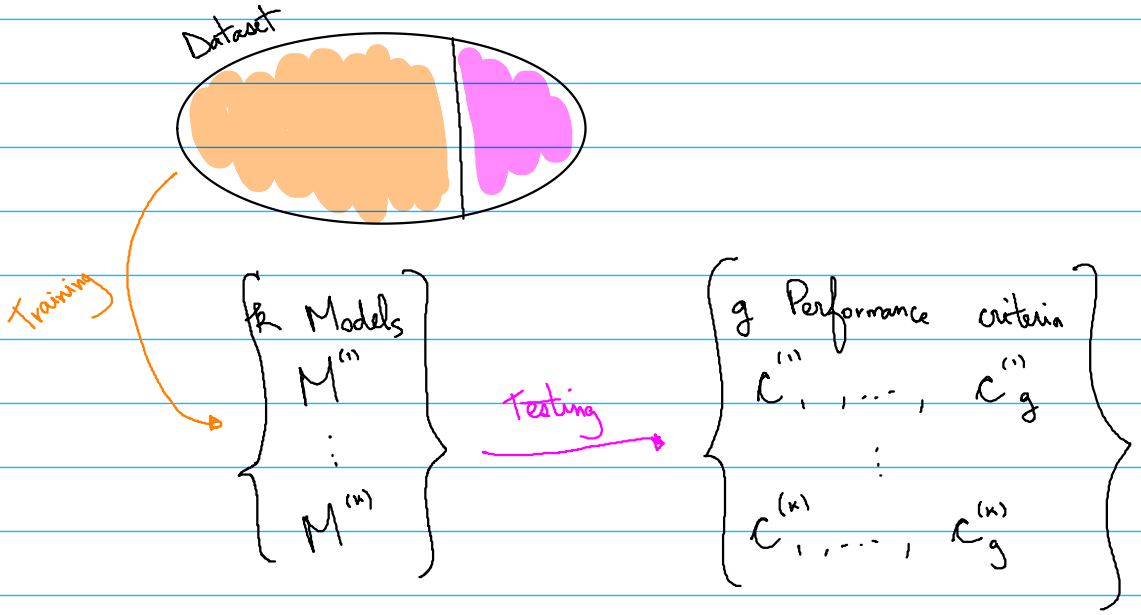
- Recall / Sensitivity: performance among true positives.

$$\frac{TP}{TP + FN}$$

- They are metrics that can be used to compare different classification models.

Cross - Validation

- We want to avoid overfitting the model to our dataset.
- Separating the dataset into training / testing parts and compare the performance on them.



- Ex: leave-p-out cross validation

For different types of Models :
  For each group of p observations $p_1, \dots, p_e$:
    Train the model without $p_1, \dots, p_e$
    Compute the predicted values on $p_1, \dots, p_e$
  end
  Calculate criteria of interest, eg. MSE, accuracy.
end