Confusion Matrix

	Reference		
Prediction		ham	spam
	ham	а	b
	spam	С	d

a: TP (true positive)

b: FN (false positive)

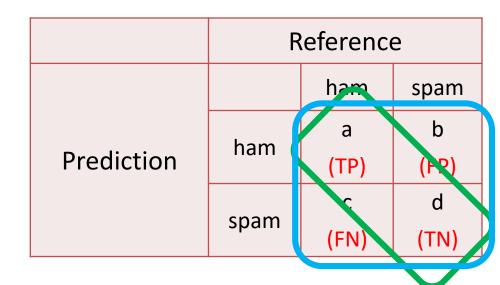
c: FP (false negative)

d: TN (true negative)



Accuracy

Intuition – What percentage of the predictions were correct?



Accuracy =
$$\frac{TP+TN}{TP+FP+FN+TN} = \frac{a+d}{a+b+c+d}$$



Sensitivity

Intuition – What percentage of the ham messages were correctly predicted?

	Reference		
Prediction		ham	spam
	ham	а	b
		(TP)	(FP)
	spam	С	d
		(FN)	(TN)

Sensitivity =
$$\frac{TP}{TP+FN} = \frac{a}{a+a}$$



Specificity

Intuition – What percentage of the spam messages were correctly predicted?

	Reference		
Prediction		ham	spam
	ham	а	b
		(TP)	(FP)
	spam	С	d
		(FN)	(TN)

Specificity =
$$\frac{TN}{FP+TN} = \frac{d}{b+d}$$

