

Exercise 1

A spam filter checks 1000 emails. 465 of them are spam. The spam filter tags 386 emails as spam, but only 322 of them really are. What is the performance of the spam filter in Precision, Recall and F-Measure?

Exercise 2

After some learning, the spam filter checks again the 1000 emails. Now it tags 267 as spam and 255 of them really are. Does the spam filter perform better now?

Exercise 3

Usually, the Precision of a spam filter is more important than its recall: An email tagged as spam that really is not spam is easily overlook, while not identified spam emails in the inbox are only annoying. If Precision is considered twice as important as Recall, how would the F-Measure change in the two examples above?