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**Weekly Assignment-9**

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In order to measure the effectiveness of information retrieval system the standard measures are precision and recall but yes there are addition factors to illustrate the effectiveness of information retrieval system that are as follows

* Fall-out
* F-measure

**Fall-Out:**  The proportion of non-relevant document that are retrieved, out of all non-relevant documents available:

Fall-out =

In binary classification, fall-out is closely related to specify and is equal to (1-specificity). It can be looked at as the probability that a non-relevant document is retrieved by the query. It is trivial to achieve fall-out of 0% by returning zero documents in response to any query.

**F-Measure:** The weighted harmonic mean of precision and recall, the traditional F-measure is

F =

This is also known as F1 measure because recall and precision are evenly weighted. The general formula for non-negative real β is

Fβ =

Two other commonly used F-measures are the F2 measure, which weights recall twice as much as precision, and the F0.5 measure, which weights precision twice as much as recall. The F-measure was derived by van rijsbergen (1979) so that Fβ “measure the effectiveness of retrieval with respect to a user who attaches β times as much important to recall as precision.” It is based on van rijsbergen’s effectiveness measure

E =

Their relationship is:

Fβ = 1-E where α =

F-measure can be a better single metric when compared to precision and recall both precision and recall give different information that can complement each other when combined. If one of them excels more than the other, F-measure will reflect it.