

## Abstract

Information Retrieval (IR) is a part of computer science which related to information retrieval from documents based on content and context of the documents itself. The processes in Information Retrieval could be conceived as a process to get relevant documents from document's collection through the queries from users.

The parameters utilized to evaluate the relevance of the document used in this final are precision, recall, and IAP. Precision is a parameter to calculate the accuracy level between the queries and the document collection. Precision is a result of comparison between relevant documents and the entire documents collected by the system. Recall is a parameter to calculate the completeness level between query and the document collection. Recall is a result of comparison between relevant documents with all the relevant documents in the entire document collection. IAP calculates orderliness level of relevant documents in the system. IAP value constructed from the calculation of precision and recall level.

In IR, there are models to get the similarity value of the relevant documents with the query input from the users. One of those models are Gravitation Based Model. Three weighting methods exist in Gravitation Based Model which are representations of magnetic field, the inverse square of magnetic field ( $\frac{1}{x^2}$ ), the negative exponential of magnetic field ( $e^-$ ) and discrete weighting function. The test shows that with the IAP parameter, Negative exponential method is superior to the other two. This shows that negative exponential weighting method is better than three other methods, inverse square of magnetic field ( $\frac{1}{x^2}$ ), diskrit, and the negative exponential of magnetic field ( $e^-$ ).

**Keywords:** Information Retrieval, Information Retrieval System, Gravitation Based Model, precision, recall, IAP, document collection and query.