

Abstract

Now a days Information retrieval has been developed widely along with the development of the model of getting a better result in relevancy. An information retrieval system is said to be better when it has a high relevancy level that is acceptable by a user. One of the way to reach that is to implement a better and tested ranking method. In this final project the ranking is measured by a parameter called precision and recall as a result of Latent Semantic Indexing using two methods which are Singular Value Decomposition (*SVD*) and Semi Discrete Decomposition (*SDD*).

LSI has the ability to find relevant documents even if the word of the *query* are not in written in the document. we analyzed the ability of LSI by testing a document collection and we also compared the accuracy of the matrices decomposition of the two method used. We used storage, time, recall, and precision, and Mean average Precision (MAP) as the parameter to measure the accuracy of the system.

The tested result of this final project proved that LSI can find relevant document even if the words in the *query* did not exist in the document. Beside that *SVD* has a better precision and recall from *SDD*. *SDD* has a better performance in terms of smaller size used to save the matrices and time query execution faster from *SVD*.

Keywords: Information Retrieval, Latent Semantic Indexing (LSI), Singular Value Decomposition (SVD) and Semi Discrete Decomposition (SDD).