

The WWW is dominated by search engines such as Google. They are inseparable part of everyday search for information. Theoretical research field interested in searching, the information retrieval, focuses mainly on the natural language constructs - words. During the last years the field has been extended to other searchable content as well. The world of mathematical knowledge on the WWW has grown enormously. The importance of a general mathematical search engine is clear. However, this research field had been abandoned until very recently. Despite the fact that an active ongoing research is in progress, few practical results have been presented. The main goal of this thesis is to fill this gap. A new mathematical search engine was proposed with the focus on applicability. As the only capable search engine of indexing WWW effectively is the full text search engine it was used as the basis. The mathematical extension was designed as an extension which allows it to exploit and use all the advantages of the full text search engine. Most of the mathematical documents do not contain semantic information. The solution to this problem was one of the main goals of this thesis. The extensive evaluation showed that the proposed search engine has many advantages. The most important one is the usability over a large collection of semantically poor mathematical documents such as WWW.