

This thesis deals with the web search engine Google, particularly the way how searched pages are ordered and with the application of this process in different areas. First, we briefly introduce how a web search engine works, create the Google matrix and show principle of the PageRank algorithm. Then, in the completely mathematical section of the work, we describe the mathematical theory supporting our statements including Perron's theorem. The next section is concerned with how to use PageRank to compare teams in football Synot league. In the end few simple observations on how different facts in the web's hyperlink structure influence the Google matrix will be described.