

The goal of this work was to implement a multidimensional indexing method into a database system and compare this method with existing implementations of multidimensional indexing methods in current database platforms (MSSQL, Oracle, ... ). PostgreSQL was chosen for the implementation, because it suits the requirements of integrating own access methods in a modular way. The active development community which this platform unites has also played a part, since it assures help with problems related to the development. Last but not least, PostgreSQL was also chosen because its source code is accessible. This was priceless in the effort of understanding the core of PostgreSQL (mainly work with memory), which has direct influence on user defined access methods, especially indexes. An already existing implementation of R-tree over object framework ATOM was used as an indexing method, which allows implementing of persistent tree structures. As a direct consequence of the work, not only has arisen the implementation of Rtree in PostgreSQL, but also a generic framework which allows implementing external indexing in PostgreSQL with a minimum knowledge of how PostgreSQL works. The user of the framework implements his/her own persistent search methods and connects these methods to the mentioned framework, which provides communication between database and the implemented external indexing method.