

Title: Implementation of selected database operations in parallel environment

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Abstract: This thesis describes several design possibilities of database operations in a parallel environment called Bobox. First, the thesis covers theory of databases as well as algorithms needed to implement database operations in main memory. Next part discusses the usage of hash tables to implement parallel database operations. The key principles discussed contain hashing approaches based on a shared hash table, as well as principles of data preprocessing (local hash Table). The thesis then describes practical usage of selected database operations, which were implemented based on the principles described in the first theory sections. The implementation also involves performance measurement at different levels of parallelism. Finally, acquired results are analyzed and discussed in terms of scalability of parallelism and performance in the Bobox environment.

Keywords: database operations, Bobox, parallelism, hashing, data preprocessing