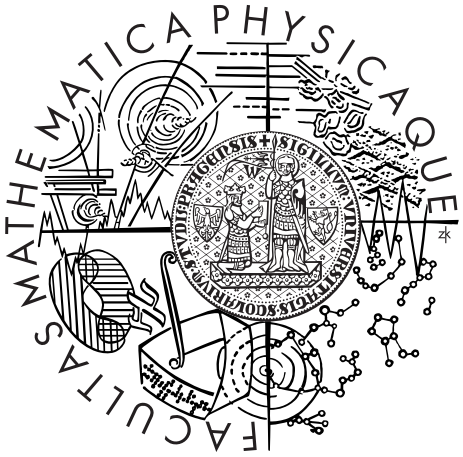
Charles University in Prague
Faculty of Mathematics and Physics

MASTER THESIS



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Querying NoSQL databases in MPS

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Název práce: Dotazování NoSQL databáz v prostředí MPS

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Abstrakt: S příchodem NoSQL databází se objevila i potřeba pro vznik doménově specifických dotazovacích jazyků. Jednou ze zajímavých domén jsou grafové databáze jako například Neo4j s dotazovací jazykem Cypher. Doménově specifické jazyky (DSLs) může být navržena a snadno použita pomocí speciálních vývojových prostředích zvaných Language Workbenche. Velmi populární Language Workbench je MPS, který implementuje koncept projekčních DSLs.

Tato práce zodpovídá otázku, zda Language Workbenche a projekční DSLs mohou být přínosem v doméně NoSQL databází, vystihnout výhody projekčních DSLs použitím různých typů přístupu. Dalším specifickým cílem je navrhnout a implementovat dotazovací DSL jazyk pro vybranou NoSQL databázi (např. Neo4J nebo Redis) jako případová studie.

Klíčová slova: NoSQL, MPS, dotaz, Cypher

Title: Querying NoSQL databases in MPS

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Abstract: With the advent of NoSQL databases, a need for targeted domain-specific query languages has become evident. One of the interesting domains are graph databases, such as Neo4j with the query language Cypher. Domain specific languages (DSLs) can be designed and easily used with the help of special development environments called Language Workbenches. A very popular Language Workbench is MPS, which implements the concept of projectional DSLs.

This work will answer the question whether Language Workbenches and projectional DSLs can make a contribution in the domain of NoSQL databases, and identify the benefits of projectional DSLs over different approaches. An additional specific goal is to design and implement a practical MPS-based query DSL for a chosen NoSQL database (e.g., Neo4J or Redis) as a case study.

Keywords: NoSQL, MPS, query, Cypher

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