

MDK: Modern Database Concepts

<http://www.ksi.mff.cuni.cz/~svoboda/courses/192-MDK/>

Practical Class 10

MongoDB

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First Steps

Connect to our NoSQL server

- SSH / PuTTY and SFTP / WinSCP
- **nosql.ms.mff.cuni.cz:42222**

Start mongo shell

- `mongo`

Switch to your database

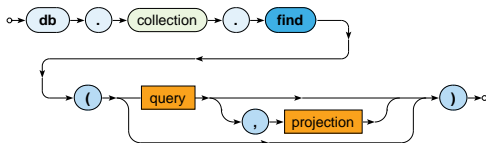
- use `login`

Insert sample data into your database

- Empty your collections first
- See `/home/MDK/mongodb/data.js`

Find Operation

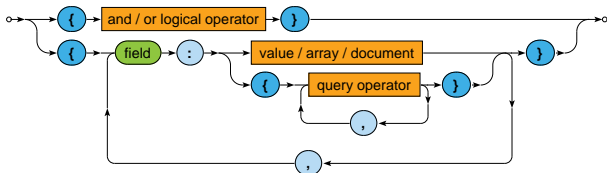
Selects documents from a given collection



- Parameters
 - **Query:** description of documents to be selected
 - **Projection:** fields to be included / excluded in the result

Selection

Query parameter describes the documents we are interested in

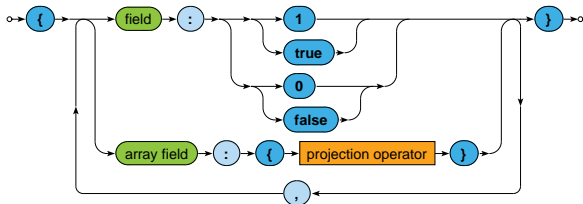


Selection operators

- `$eq`, `$neq`, `$lt`, `$lte`, `$gte`, `$gt`, `$in`, `$nin`
- `$and`, `$or`, `$not`
- `$exists`, `$regex`, `$text`
- ...

Projection

Projection allows us to determine fields returned in the result



Projection operators

- \$elemMatch, \$slice,...

Exercise 1

Express the following MongoDB query

- Find actors born in **1966** with first name ***Jiri***

Exercise 2

Express the following MongoDB query

- **Find movies directed by *Jan Hřebejk***
- Note that the order of fields for first and last names can be arbitrary

Exercise 3

Express the following MongoDB query

- **Find actors with first name *Jiri* who played in *Medvidek* movie**
- Return names of these actors only

Exercise 4

Express the following MongoDB query

- **Find movies filmed between years 2000 and 2005 such that they have a director specified**
- Return movie identifier only
- Order the result by ratings in descending order and then by years in ascending order

Exercise 5

Express the following MongoDB query

- **Find actors who starred in *Samotari* or *Medvidek* movies**
- Return actor identifier only
- Propose two different approaches

Exercise 6

Express the following MongoDB query

- **Find actors who played in both *Samotari* and *Medvidek***
- Return actor identifier only
- Propose two different approaches

Exercise 7

Express the following MongoDB query

- **Find movies with Czech title equal to *Vratne lahve***
- Return movie title only
- Note that there are two means how movie titles are defined

Exercise 8

Express the following MongoDB query

- **Find movies that have a *Czech Lion* award from 2005**
- Return movie identifier and all awards

Exercise 9

Express the following MongoDB query

- Find movies that are *comedies* and *dramas* at the same time
or
have a rating *80* or more
- Return movie identifier and at most 2 countries