

B4M36DS2, BE4M36DS2: Database Systems 2

<https://cw.fel.cvut.cz/wiki/courses/b4m36ds2/>

Practical Class 7

MongoDB

Yuliia Prokop

prokoyul@fel.cvut.cz

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Authors: Martin Svoboda (martin.svoboda@matfyz.cuni.cz),
Yuliia Prokop

Czech Technical University in Prague, Faculty of Electrical Engineering



Mongo Shell

Connect to our NoSQL server

- SSH / PuTTY and SFTP / WinSCP
- nosql.felk.cvut.cz

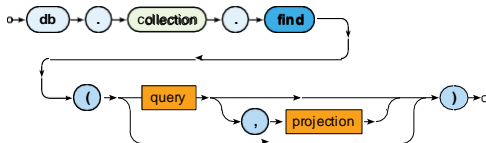
Start mongo shell

```
mongosh --port 42222 -u login -p password database
```

Use the password from the first email

Find Operation

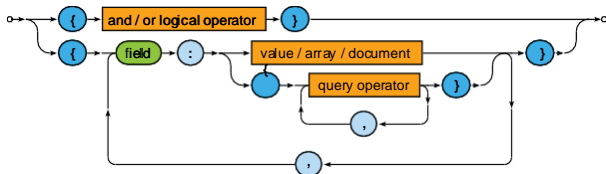
Selects documents from a given collection



- 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

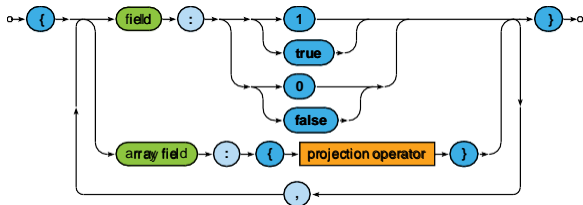


Selection operators

- \$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, ...

Sample Data

Insert the following actors into your emptied collection

```
{ _id: "trojan",  
  name: "Ivan Trojan", year: 1964,  
  movies: [ "samotari", "medvidek" ] }
```

```
{ _id: "machacek",  
  name: "Jiri Machacek", year: 1966,  
  movies: [ "medvidek", "vratnelahve", "samotari" ] }
```

```
{ _id: "schneiderova",  
  name: "Jitka Schneiderova", year: 1973,  
  movies: [ "samotari" ] }
```

```
{ _id: "sverak",  
  name: "Zdenek Sverak", year: 1936,  
  movies: [ "vratnelahve" ] }
```

```
{ _id: "geislerova",  
  name: "Anna Geislerova", year: 1976 }
```

Preparation steps

Insert sample data into your database

- Empty your collections first

```
db.actors.deleteMany({})
```

- See `/home/DS2/mongodb/data1-9.js`
`/home/DS2/mongodb/data2-9.js`

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 stared 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