

Practical Class 11

MongoDB: Aggregation

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First Steps

Connect to our NoSQL server

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

Start mongo shell

- `mongo`

Switch to your database

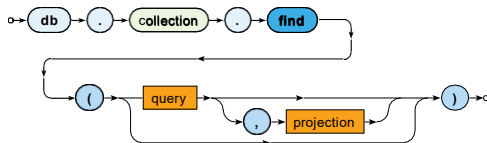
- use `login`

Insert sample data into your database

- `users.js`
- `checkin.js`

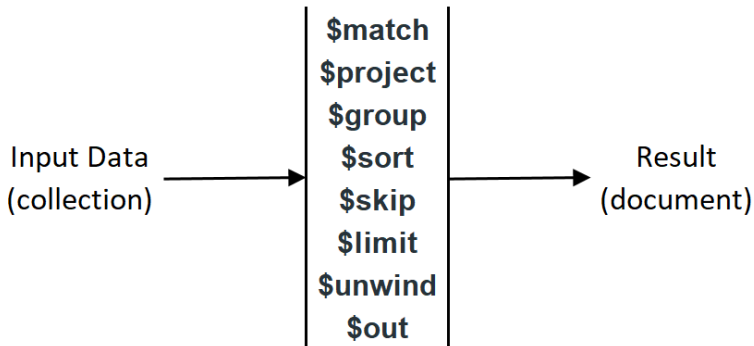
Find Operation

Selects documents from a given collection



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

Aggregation pipeline



```
db.collection.aggregate( [ { <stage> }, ... ] )
```

Exercise 1

Express the following MongoDB query

- Find ***Brno*** residents whose name is ***Jolana***.

Display their first and last names.

Exercise 2

Express the following MongoDB query

- Find ***Prague*** and ***Brno*** residents born in the ***last century***

Exercise 3

Express the following MongoDB query

- **Find maximal number of friends.**

Exercise 4

Express the following MongoDB query

- **Find top three cities for vacations**

Exercise 5

Express the following MongoDB query

- **Find vacation places, which are popular in winter.**

Exercise 6

Express the following MongoDB query

- **Who has the most friends?**

Join Collections

The **\$lookup** stage lets you specify which collection you want to join with the current collection, and which fields that should match.

There are four required fields:

- **from**: The collection to use for lookup in the same database
- **localField**: The field in the primary collection that can be used as a unique identifier in the **from** collection.
- **foreignField**: The field in the **from** collection that can be used as a unique identifier in the primary collection.
- **as**: The name of the new field that will contain the matching documents from the **from** collection.

Join Collections - example

```
db.collection.aggregate([
{
    $lookup: {
        from: "movies",
        localField: "movie_id",
        foreignField: "_id",
        as: "movie_details",
    },
},
{
    $limit: 1
}
])
```

Exercise 7

Express the following MongoDB query

- **Find all check-ins for each user.**

Exercise 8

Express the following MongoDB query

- **Who has the most check-ins?**

Show top-5.