

Introduction to Databases

Part 2: MongoDB

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Agenda

1. Introduction
2. Documents
3. Collections
4. SQL vs MongoDB
5. Install MongoDB

... By the way

HTML

CSS

SQL

JavaScript

NodeJS

**Big
Project 1**

JQuery

... By the way

HTML

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**Big
Project 1**

**Big
Project 2**

JQuery

MongoDB

React

... By the way

HTML

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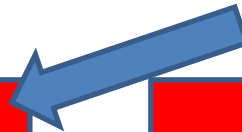
Big
Project 1

Big
Project 2

JQuery

MongoDB

React



1. Introduction

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- Additionally to tables, we will use documents

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- Additionally to tables, we will use documents
- Document: „A record in a MongoDB collection and the basic unit of data in MongoDB.
Documents look like JSON objects but exist as BSON“

2. Documents

- BSON

{

“title”: “Article two”,

“category”: “Education”,

“body”: “this is the body”

}

2. Documents

- **BSON is JSON saved binarily**

```
{
```

```
  "title": "Article two",
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```
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```
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2. Documents

- BSON is JSON saved binarily

```
{
```

```
  "title
```

```
  "cate
```

```
  "bod
```

```
}
```

Each document is JSON which
is saved as a BSON file.

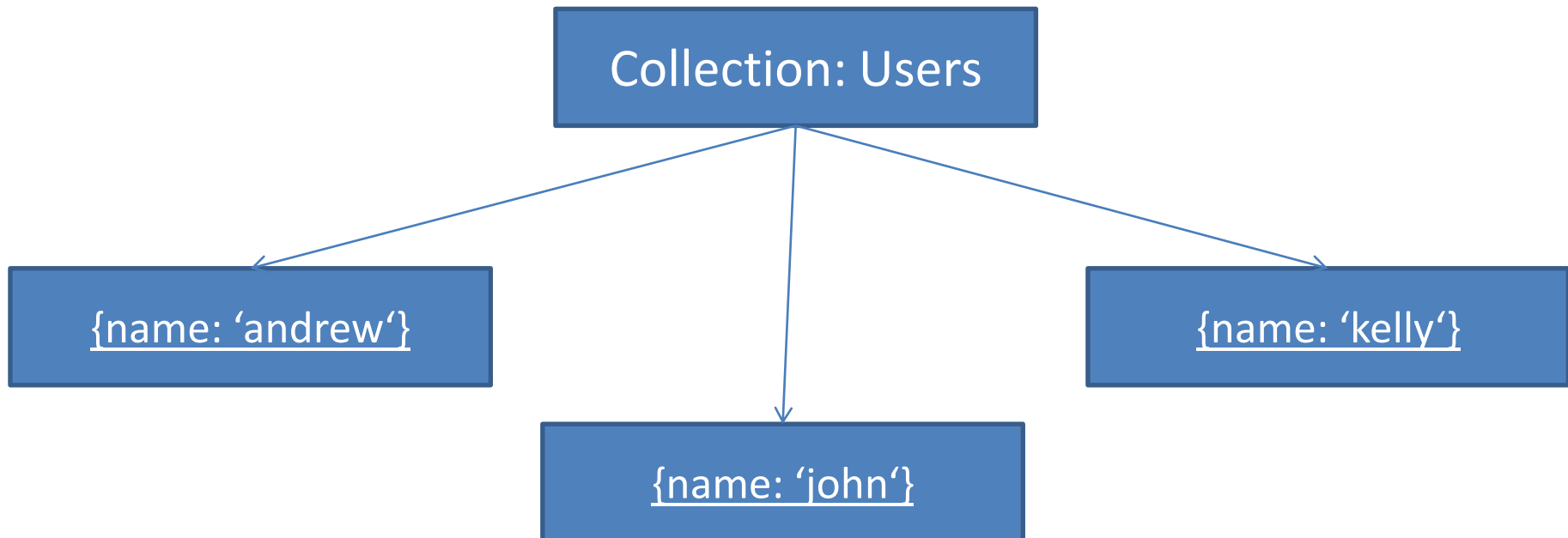
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3. Collections

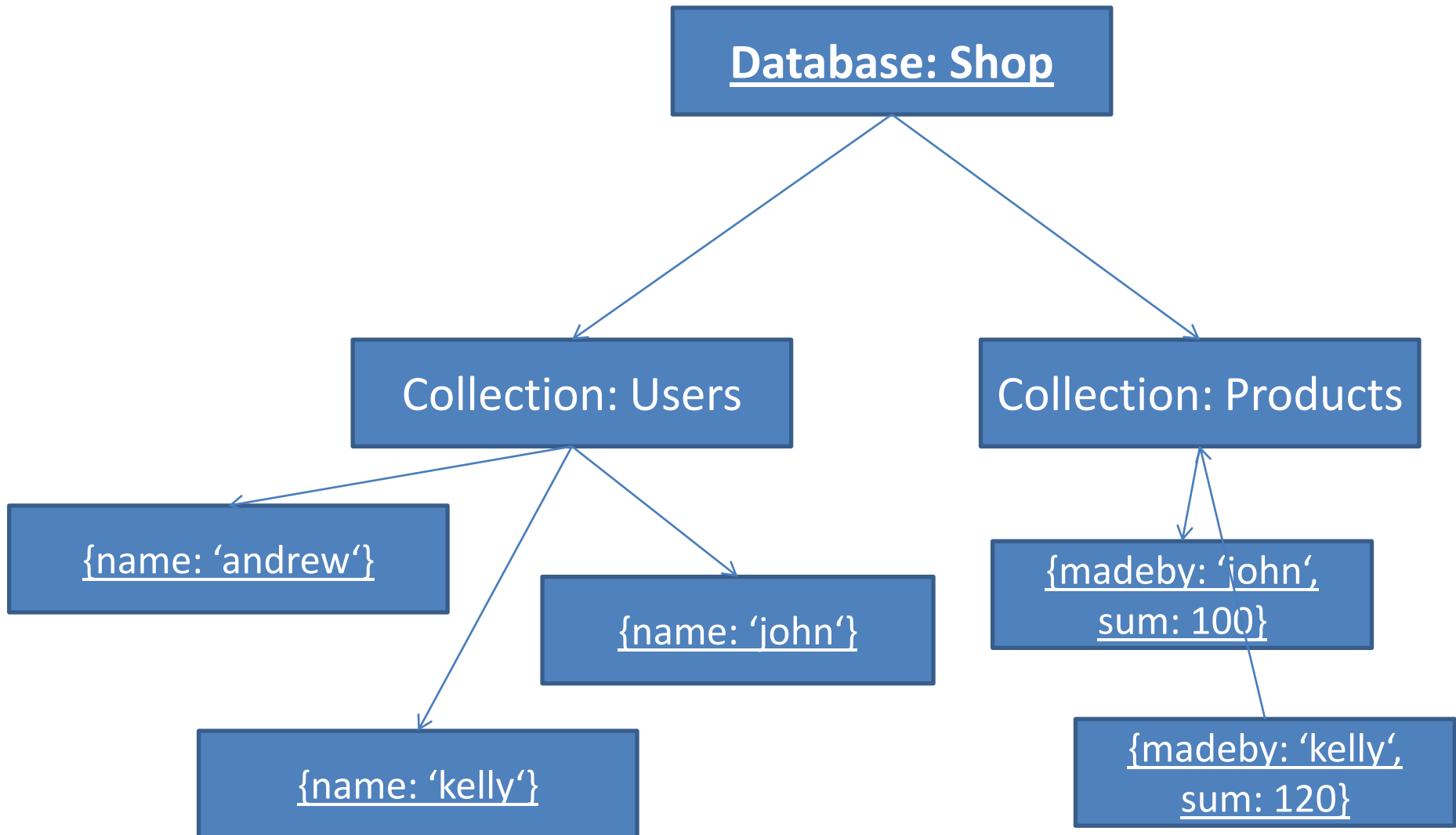
- Collection: A group of MongoDB documents. Typically, all documents in a collection have a similar related purpose.

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3. Collections



1. Introduction

- Biggest difference between SQL and MongoDB

4. SQL vs MongoDB

- Biggest difference between SQL and MongoDB

SQL



JOINS

MongoDB



REFERENCES

5. Install MongoDB

- `sudo apt-get install -y mongodb-org`
- `sudo systemctl start mongod`
- `sudo systemctl status mongod`

6. Data-Types

DATA TYPES



STRING

name: String

```
{  
  name: "John"  
}
```



NUMBER

likes: Number

```
{  
  likes: 5  
}
```



DATE

timeStamp: Date

```
{  
  timeStamp: ISODate("...")  
}
```



ARRAY

tags: Array

OR

```
tags: []  
{  
  tags: ["tag1", "tag2"]  
}
```



BOOLEAN

published: Boolean

```
{  
  published: true  
}
```



ObjectId

_creator: Schema.ObjectId

```
{  
  _creator: "41239878"  
}
```

7. Quiz

1. How do we access the shell?

A: by typing 'mongoddb'

B: by typing 'mongo'

C: by loading the browser

D: by typing 'mongo start'

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7. Quiz

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A: \$set

B: \$in

C: upsert=true

D: \$upsert=true

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3. What command do we use to indicate which database we want to access?

A: use

B: show

C: find

D: list

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7. Quiz

4. What method is used to display our documents in a clean and organized way?

A: insert

B: find

C: pretty

D: clean

E: style

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5. Which one of these is not one of the 6 main data types commonly used within the model of our collection?

A: String

B: Boolean

C: Number

D: Date

E: Buffer

F: Array

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Task:

1. Create a new database “medialib” that is supposed to save infos about videos and songs. both are saved in the same collection “mediaitem”. Find 5 proper keys (title and type is a must, whereas type can either be „movie“ or „song“) and add 3 songs and 3 movies.
2. Write a function listTitles that lists all titles and types of each item in your collection. Therefore, take a look at the collection.count() method.

Task

Convert your productserver backend to MongoDB.

- 1) Create a mongo database „productserver“
- 2) Create a collection „products“
- 3) Insert some example data.
- 4) Create a backup of your server_sql.js and save it as server_mongo.js.
- 5) Start implementing your MongoDB version of the backend.
- 6) Extend your backend by applying the PUT method so that users may change a product.