MongoDB

Day3

- Indexes
- Drop Database & Collection
- models
- export & Import
- replica set

Indexes

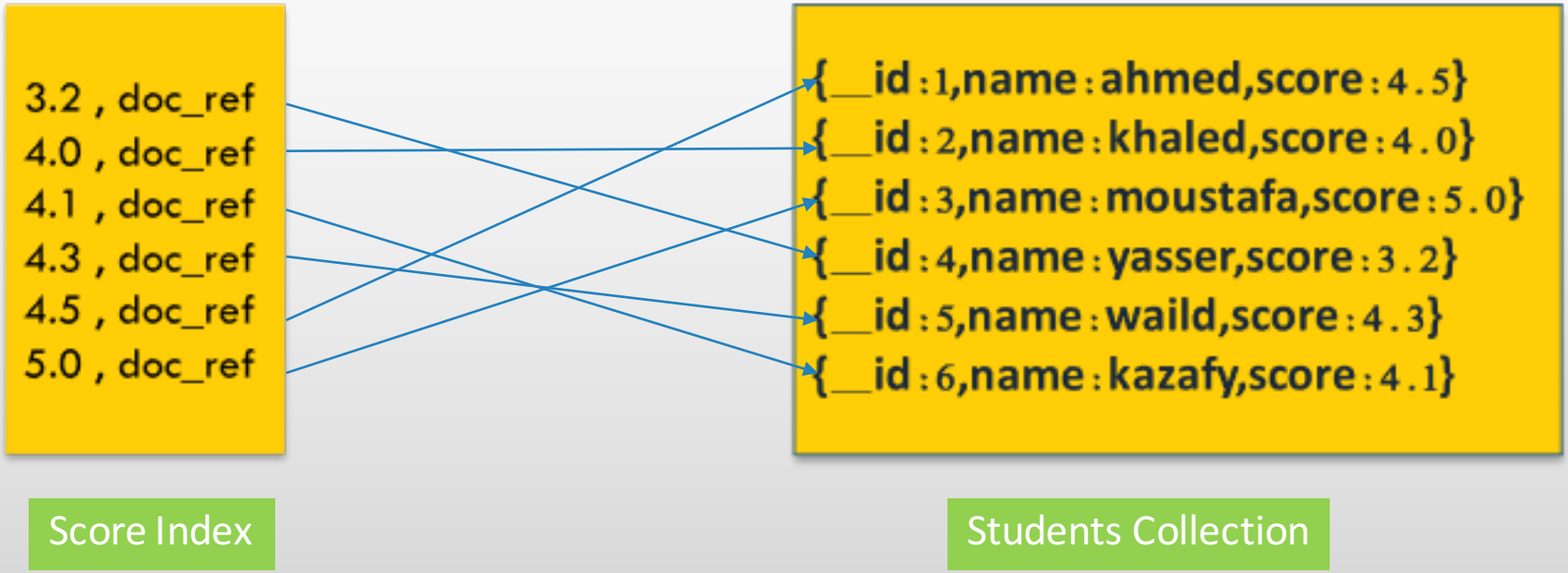
Indexes support the efficient execution of queries in MongoDB. Without indexes, MongoDB must perform a collection scan, i.e. scan every document in a collection, to select those documents that match the query statement. If an appropriate index exists for a query, MongoDB can use the index to limit the number of documents it must inspect.

The index stores the **value of a specific field or set of fields**, ordered by the value of the field.

MongoDB defines indexes at the collection level and supports indexes on any

field or sub–field of the documents in a MongoDB collection.

Indexes


3.2 , doc_ref
4.0 , doc_ref
4.1 , doc_ref
4.3 , doc_ref
4.5 , doc_ref
5.0 , doc_ref
{_id:1,name:ahmed,score:4.5}
{_id:2,name:khaled,score:4.0}
{_id:3,name:moustafa,score:5.0}
{_id:4,name:yasser,score:3.2}
{_id:5,name:waild,score:4.3}
{_id:6,name:kazafy,score:4.1}
Score Index
Students Collection

Indexes Methods

Show Collection Indexes **db.collection.getIndexes()**

Create Index for specific field in collection

db.collection.**createIndex**(<key and index type specification>,<options>)

Example:

db.emp.**createIndex**({**score**:1})

a value of **1** specifies an index that orders items in **ascending** order. A value of **–1** specifies an index that orders items in **descending** order

Compound Indexes

MongoDB supports compound indexes, where a single index structure holds references to multiple fields within a collection's documents.

```
db.emp.createIndex({userID:-1,score:1})
```

Modify & Drop Indexes

```
db.emp.dropIndex({key:"index_key"})
```

```
db.emp.dropIndexes()
```

You can modify index using createIndex but there are some cases you will must remove index and rebuild it

Text Search

MongoDB supports query operations that perform a text search of string content. To perform text search, MongoDB uses **a text index** and the **$text** operator.

Text Index

MongoDB provides text indexes to support text search queries on string content. text indexes can include any field whose value is a string or an array of string elements.

```
db.emp.createIndex({name: "text", address: "text"})
```

Text Search – $text Operator

Use the **$text** query operator to perform text searches on a collection with a text index.

$text will tokenize the search string using whitespace and most punctuation as delimiters, and perform a logical **OR** of all such tokens in the search string.

```
db.emp.find( {$text:{ $search: "ahmed ali mahmoud"}})
```

```
db.emp.find( {$text:{ $search: "ahmed \"ali mahmoud \""}})
```

Exact Phrase

```
db.emp.find( {$text:{ $search: "ahmed ali –mahmoud"}})
```

Term Exclusion

Drop Database & Collection

Use database first then db.**dropDatabase**()

db.collection.**drop** ()

Export & Import

Export :

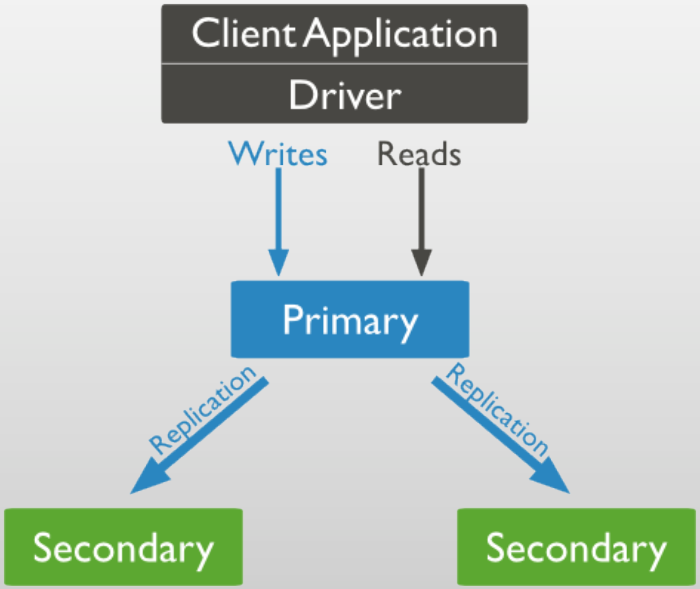
```
$ mongodump --db HR --collection emp --out dir_path
```

Import :

```
$ mongorestore --db HR path_to_dump_directory
```

Replica Set

A replica set in MongoDB is a group of mongod processes that maintain the same data set. Replica sets provide redundancy and **high availability**, and are the basis for all production deployments.



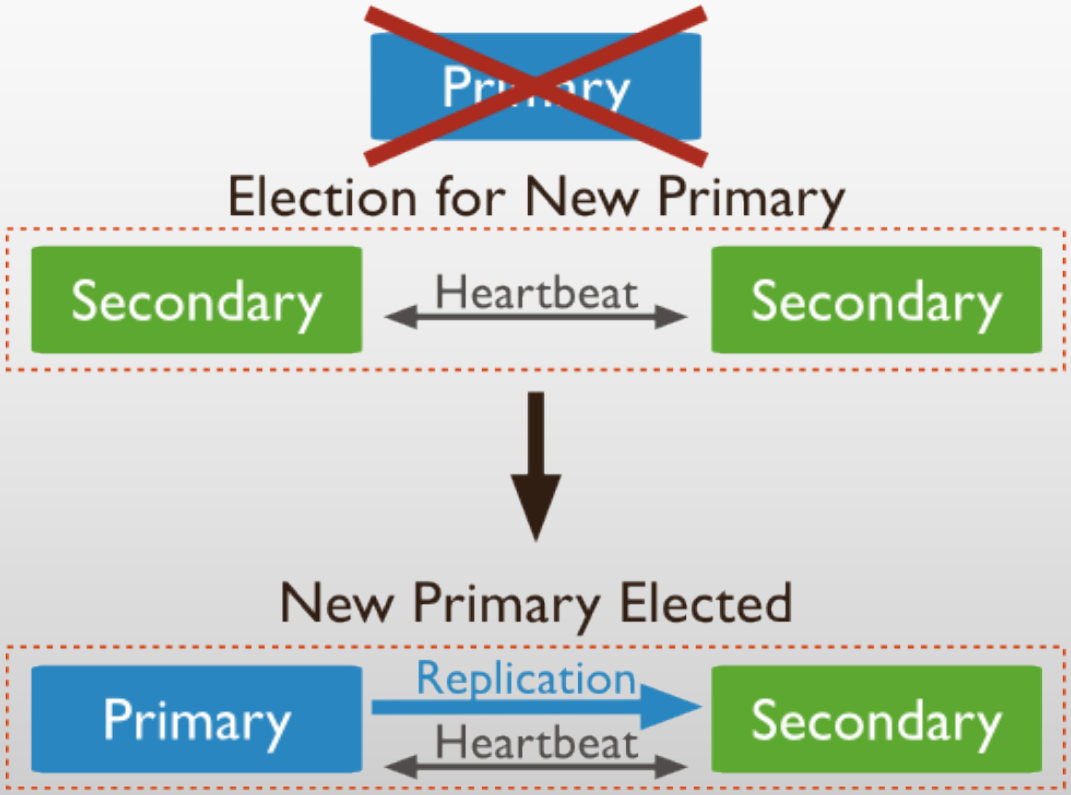
Replica Set Primary

The primary is the only member in the replica set that receives write operations. MongoDB applies write operations on the primary and then records the operations on the primary's oplog. Secondary members replicate this log and apply the operations to their data sets

All members of the replica set can accept read operations. However, by default, an application directs its read operations to the primary member. See Read Preference for details on changing the default read behavior.

The replica set can have at most one primary. If the current primary becomes unavailable, an election determines the new primary

Automatic Failover



Replica Set Demo

Demo Time

Thank You

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