Modifying Data in MongoDB

CREATING DOCUMENTS IN MONGODB



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Creating Documents



Create new documents with language agnostic API

No special purpose language needed

This course will use JavaScript

- MongoDB shell
- Visual Studio Code

Methods for creating documents

- insertOne()
- insertMany()
- insert()

Return values of the methods

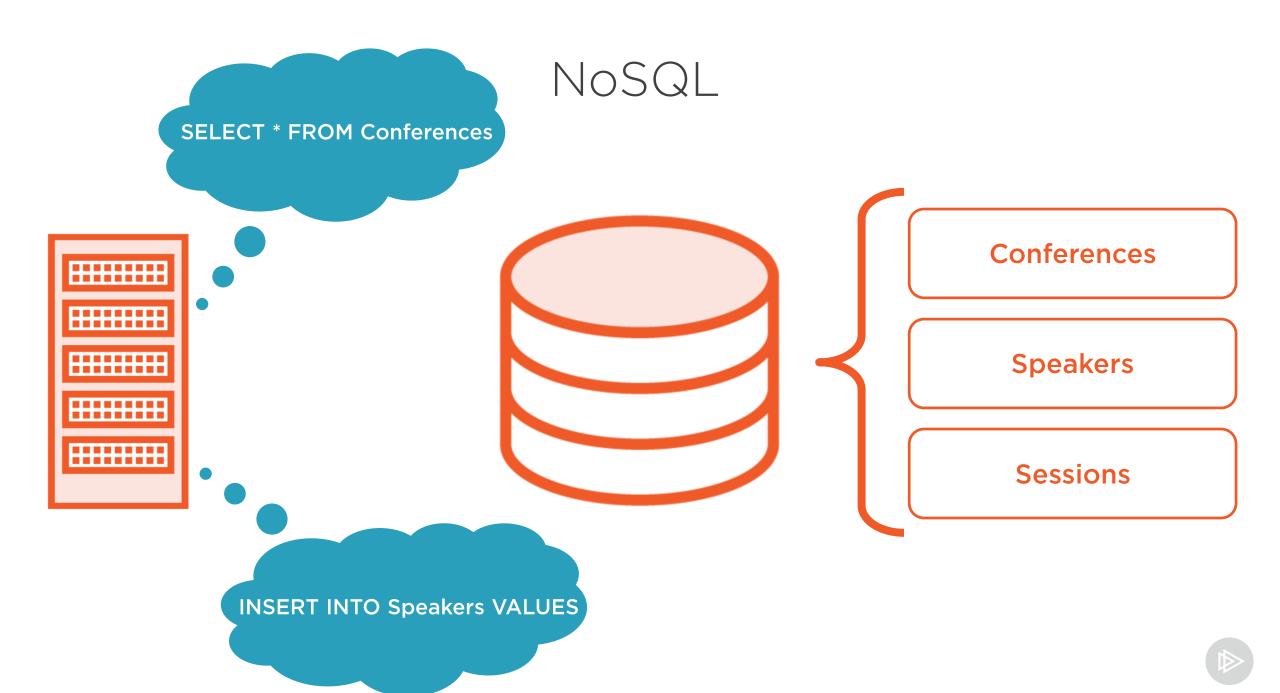
Atomicity

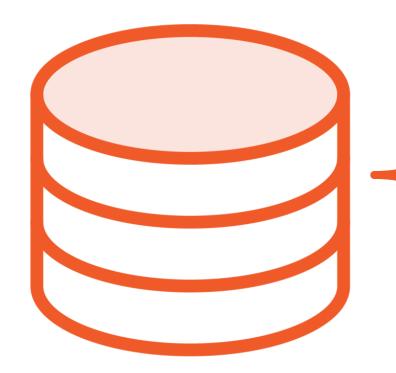


MongoDB Structure









```
{
    "speaker": "John Doe"
    "topic": "MongoDB",
    "materials":
    "https://github.com"
}

Lecture

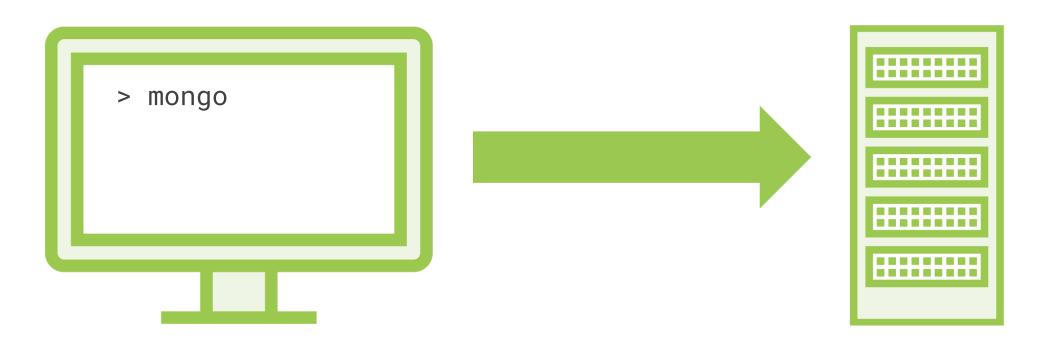
Workshop

{
    "speaker": "Jane Doe",
    "topic": "Python",
    "panelMemebers": [
    "Bob Green",
    "Zach Thomas"
    ]
}
```





Mongo Shell



mongodb://localhost:27107



insertOne()

Mongo Shell

```
> use conference_barrel
> var conference = {"name": "Python Conference"}
> db.conferences.insertOne(conference)
  "acknowledged" : true,
  "insertedId" : ObjectId("123abc")
> db.conferences.find({})
{"_id": ObjectId("123abc"), "name": "Python Conference"}
```



Demo



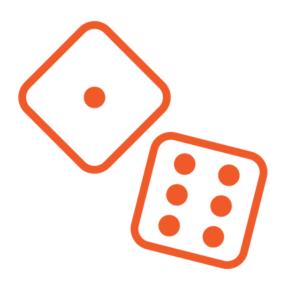
Creating documents



What About That ObjectId?



4-byte timestamp



5-byte random value



3-byte incrementing value

ObjectId("507f1f77bcf86cd799439011")



```
> db.conferences.insertOne({
        "name": "Python Conference"
        "_id": "my_custom_id1029384756"
})
```

Overriding the _id

Make sure the _id is guaranteed to be a unique value!



Write Concern



w - The number of instances the operation has propagated to



j – Whether the operation wrote to disk or memory



wtimeout - Duration to wait for operation to complete



Using a WriteConcern

This write concern requests an acknowledgement when

- Two instances have been written
- On disk
- Within 5 seconds



insertMany()

Mongo Shell

```
> use conference_barrel
> var conferences = [{"name": "Python Conference"}, {"name": "C# Conference"}]
> db.conferences.insertMany(conferences)
  "acknowledged" : true,
  "insertedIds" : [ObjectId("123abc"), ObjectId("987zyx")]
> db.conferences.insertMany(conferences, {"ordered": true}) // default
```



insertMany() != bulk import



Demo



Document identifiers



Atomicity



ACID (Atomicity, Consistency, Isolation, Durability)



Atomic operations completely succeed or fail



Only single document operations are atomic in MongoDB



In a multi-document operation, each individual document is atomic



Single document operations with embedded documents are atomic

Summary



Methods for inserting documents in MongoDB

- insertOne()
- insertMany()

The _id key is used to uniquely identify a document

- MongoDB will assign ObjectIds with automatically generated values
- You can override the _id

Write concern

Atomicity

 All single document write operations in MongoDB are atomic

