
MongoDB Overview

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RDBMS vs MongoDB

- ★ Schema Driven (Structured) **vs** Schemaless (Non Structured)
- ★ Tables (rows and columns) **vs** Documents (JSON) (known as Collections)
- ★ SQL **vs** JSON Query
- ★ Stored Procedure **vs** JavaScript Code

What is Document?

```
{  
  "_id" : ObjectId("58037891a04ec7e476b0c037"),  
  "name" : "Sunit Parekh",  
  "dateOfBirth" : ISODate("1977-08-07T00:00:00.000Z"),  
  "email" : "parkeh.sunit@gmail.com"  
}
```

MongoDB Query

```
db.<collection>.find(  
    { "where": "conditions" },           // query  
    { "select" : "fields" }             // projection  
)
```

```
db.customers.find();           // return all records with all fields
```

```
db.customers.findOne();        // return one records with all fields
```

Query options

```
db.customers.find( { "email" : "parkeh.sunit@gmail.com" } )
```

```
db.customers.find( { "storeCredits": { $gt: 500 } } )
```

```
db.customers.find( { "gender" : { $in : [ "Male", "Female" ] } } )
```

```
db.customers.find( { "gender" : { $exists : false } } )
```

```
db.customers.find( { "gender" : { $exists : true, $in : ['Male'] } } )
```

To learn more query options:

<https://docs.mongodb.com/manual/reference/operator/query/>

Query options...

```
db.customers.find( { "gender" : "Male", "storeCredits" : { $gt: 1000 } } )
```

```
db.customers.find( { $or: [ {"gender" : 'Female'}, {"storeCredits" : { $gt: 1000 } } ] })
```

```
db.customers.count( { "email" : "parekh.sunit@gmail.com" } );
```

To learn more query options:

<https://docs.mongodb.com/manual/reference/operator/query/>

Query Selectors

Comparison:

`$eq`, `$gt`, `$gte`, `$lt`, `$lte`, `$ne`, `$in`, `$nin`

Logical:

`$or`, `$and`, `$not`, `$nor`

and many more

To learn more query options:

<https://docs.mongodb.com/manual/reference/operator/query/>

Demo

Single Collection Query Demo

Sub Documents & References like FK

Customers Collections

```
{
  "_id" : ObjectId("58037891a04ec7e476b0c037"),
  "name" : "Sunit Parekh",
  "pictures": [
    {
      "active" : true,
      "pictureId": ObjectId("5803893e2ad718ac46bc6b59")
    },
    {
      "active" : false,
      "pictureId": ObjectId("1233893e2ad718ac46bbcb59")
    }
  ],
  ...
}
```

Pictures Collections

```
{
  "_id" : ObjectId("5803893e2ad718ac46bc6b59"),
  "uploadDate" : ISODate("2015-03-06T00:34:26.949Z"),
  "length" : 380744,
  "md5" : "02fb7cae77c617132f149dfd82ed91c1",
  "filename" : "mypic.jpg",
  "content": "iVBORw0KGgoAAAANSUUEUgAAA08AAAB3..."
}
```

Cursor & JavaScript function

```
db.customers.find({...}).forEach( function(doc) {  
    print(doc.email);  
});
```

```
var cursor = db.customers.find({...})  
cursor.forEach( function(doc) {  
    print(doc.email);  
});
```

Demo

Multiple Collection Query Demo

Cursor & JavaScript function

```
db.customers.find({pictures: { $exists: true }}).forEach( function(doc) {  
    // get active picture id  
    var pictures = doc.pictures.filter(function(pic) { return pic.active == true })  
    if (pictures.length > 0) {  
        printjson(pictures[0]);  
        var pictureId = pictures[0].pictureId;  
        print("pictureId: " + pictureId);  
  
        // get picture name from pictureId  
        var picName = db.pictures.findOne( {_id: pictureId}).filename ;  
        print("picName: " + picName);  
  
        // print final output  
        print('"' + doc.name + '", "' + doc.email + '", "' + picName + '"');  
    }  
});
```

Cursor & JavaScript function

```
db.customers.find({pictures: { $exists: true }, "pictures.active" : true}).forEach(
function(doc) {
    var pictures = doc.pictures.filter(function(pic) { return pic.active == true });
    var pictureId = pictures[0].pictureId;
    var picName = db.pictures.findOne( {_id: pictureId}).filename ;
    print('"' + doc.name + '", "' + doc.email + '", "' + picName + '"');
});
```

Further Resources

- Details Video on MongoDB from installation to advance queries
 - [Video training series on YouTube](#)
- MongoDB University
 - <https://university.mongodb.com/courses/M123/about>
- Udemy Free Course
 - <https://www.udemy.com/mongodb-essentials/>

Thanks!

You can reach out to me,

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