MongoDB is an open-source document database and leading NoSQL database. MongoDB is written in C++.

MongoDB is a cross-platform, document-oriented database that provides, high performance, high availability, and easy scalability. MongoDB works on concept of collection and document.

**Database**

Database is a physical container for collections. Each database gets its own set of files on the file system.

**Collection**

Collection is a group of MongoDB documents. Typically, all documents in a collection are of similar or related purpose.

**Document**

A document is a set of key-value pairs.

**MongoDB Advantages:**

<https://www.tutorialspoint.com/mongodb/mongodb_advantages.htm>

**Auto**-**sharding** allows the automation of horizontal scaling for **MongoDB** across multiple nodes, and Replica sets will automate failover and redundancy so that data existence on any number of servers across multiple datacenters is assured.

Horizontal scaling means that you scale by adding more machines into your pool of resources whereas Vertical scaling means that you scale by adding more power (CPU, RAM) to an existing machine.

* db.createCollection(name, options)

db.createCollection("mycol", { capped : true, size :

6142800, max : 5 } )

It will only create 5 documents after that if you insert more than 5 then it will delete the old ones.  
to use max capped and size is mandatory.

* Projection:  
  In MongoDB, projection means selecting only the necessary data rather than selecting whole of the data of a document. If a document has 5 fields and you need to show only 3, then select only 3 fields from them.

db.COLLECTION\_NAME.find({},{KEY:1})

* Create Index and text searh:  
  <https://www.tutorialspoint.com/mongodb/mongodb_text_search.htm>
* <https://docs.mongodb.com/manual/reference/operator/query/elemMatch/>  
  must see the   
  Since the [$elemMatch](https://docs.mongodb.com/manual/reference/operator/query/elemMatch/#op._S_elemMatch) only specifies a single condition, the [$elemMatch](https://docs.mongodb.com/manual/reference/operator/query/elemMatch/#op._S_elemMatch) expression is not necessary  
  Ex. <https://www.w3resource.com/mongodb-exercises/mongodb-exercise-11.php>  
    
  wrong solution provided in below link: (must see comments)  
  <https://www.w3resource.com/mongodb-exercises/mongodb-exercise-22.php>
* REGEX:  
  <https://www.tutorialspoint.com/mongodb/mongodb_regular_expression.htm>  
    
  Ex. <https://www.w3resource.com/mongodb-exercises/mongodb-exercise-15.php>  
    
  <https://www.w3resource.com/mongodb-exercises/mongodb-exercise-32.php>
* Shortcut for or operator:  
  <https://docs.mongodb.com/manual/reference/operator/query/in/>  
    
  opposite of $in => <https://www.w3resource.com/mongodb-exercises/mongodb-exercise-19.php> ($nin)
* Not greater than  
  <https://www.w3resource.com/mongodb-exercises/mongodb-exercise-20.php>
* $and:  
  It should be used when we perform $and query to same field  
    
  Ex. cuisine for those restaurants which prepared dish except 'American' and 'Chinees'  
  <https://www.w3resource.com/mongodb-exercises/mongodb-exercise-21.php>
* Getting a certain element element:  
  <https://stackoverflow.com/questions/19899299/querying-mongodb-to-match-in-the-first-item-in-an-array>  
    
  <https://www.w3resource.com/mongodb-exercises/mongodb-exercise-23.php>
* Projection:   
  <https://www.w3resource.com/mongodb/mongodb-slice-operators.php>  
    
  <https://stackoverflow.com/questions/7223273/get-n-th-element-of-an-array-in-mongodb>
* $exists:  
  <https://docs.mongodb.com/manual/reference/operator/query/exists/>  
    
  Ex. <https://www.w3resource.com/mongodb-exercises/mongodb-exercise-28.php>
* $type:  
  <https://docs.mongodb.com/manual/reference/operator/query/type/>  
    
  <https://www.w3resource.com/mongodb-exercises/mongodb-exercise-29.php>
* $mod:  
  <https://www.w3resource.com/mongodb-exercises/mongodb-exercise-30.php>
* \_id:  
  It is a combination of timestamp, random values and some counters.  
  It stores value as ObjectId not as string because string consumes more size than objectId almost double(24 instead of 12).

**Important links**

* <https://dzone.com/articles/mongodb-pipelines-with-examples>
* <https://www.w3resource.com/mongodb-exercises/index.php>