MongoDB\_Lab1

1 – open mongo shell and view the help

**help**

2 – identify your current working database and show list of available databases

**1-db**

**2-show dbs**

3 – create a new database called Iti and create a collection named “students”. Insert whatever data you want about yourself (include name and age in your details).

**Use iti**

**db.students.insert({name:"nagwa talaat",age:26})**

4– show a list of available databases. What did you notice?

**Show dbs**

**The iti db is added to the databases**

5 – Insert un-structured or semi-structured data for 10 of your friends (include name and age in your details. The documents should have different types of data i.e., arrays, strings, documents, integers).

db.students.insertMany([

    {

      "id": 1006,

      "name": "malak",

          "age":20,

      "skills": [

            {"skill1": "reading"},

            {"skill3": "football"}

      ],

      "email": "malak@ahmed.net",

      "designation": "Director",

      "location": "alex"

    },

{

      "id": 1007,

      "name": "amira",

          "age":19,

          "skills": [

          {"skill1": "reading"},

          {"skill3": "football"}

    ],

      "email": "amira@ahmed.net",

      "designation": "doctor",

      "location": "alex"

    },

{

      "id": 1008,

      "name": "arwa",

          "age":16,

          "skills": [

          {"skill1": "reading"},

          {"skill3": "football"}

    ],

      "email": "arwa@ahmed.net",

      "designation": "teacher",

      "location": "cairo"

    },

{

      "id": 1009,

      "name": "shorouk",

          "age":26,

          "skills": [

          {"skill1": "reading"},

          {"skill3": "football"}

    ],

      "email": "shorouk@shaheen.net",

      "designation": "developer",

      "location": "alex"

    },

{

      "id": 1010,

      "name": "salma",

          "age":25,

          "skills": [

          {"skill1": "reading"},

          {"skill3": "football"}

    ],

      "email": "salma@gamal.net",

      "designation": "engineer",

      "location": "alex"

    },

{

      "id": 1011,

      "name": "essam",

          "age":38,

          "skills": [

          {"skill1": "reading"},

          {"skill3": "football"}

    ],

      "email": "essam@eslam.net",

      "designation": "Director",

      "location": "mansoura"

    },

{

      "id": 1012,

      "name": "esraa",

          "age":23,

          "skills": [

          {"skill1": "reading"},

          {"skill3": "football"}

    ],

      "email": "esraa@ahmed.net",

      "designation": "engineer",

      "location": "mansoura"

    },

{

      "id": 1013,

      "name": "nashwa",

          "age":40,

          "skills": [

          {"skill1": "reading"},

          {"skill3": "football"}

    ],

      "email": "nashwa@fathy.net",

      "designation": "Director",

      "location": "cairo"

    },

    {

        "id": 1014,

        "name": "maher",

            "age":26,

            "skills": [

            {"skill1": "reading"},

            {"skill3": "football"}

      ],

        "email": "maher@mohamed.net",

        "designation": "engineer",

        "location": "mansoura"

      },

{

      "id": 1015,

      "name": "mai",

          "age":26,

          "skills": [

          {"skill1": "reading"},

          {"skill3": "football"}

    ],

      "email": "mai@hossam.net",

      "designation": "Director",

      "location": "alex"

    }]);

6 – Search for your object by name.

db.students.find({name:"mai"})

7– Search for your friend(s) by age.

db.students.find({age:{$gt:22}})

8 – Search for all of your friends whose age is older than yours.

db.students.find({age:{$gt:26}})

**9** – delete any of your friends by id.

db.students.deleteOne( {"\_id": ObjectId("623a73300a769780d2082553")})

10 – view all documents in students' collection in a prettified format.

db.students.find().pretty()  
   
11 – count all documents in students' collection. (self-learning)

db.students.count()

**---------------------------------------------------------**

**part 2**

1. Create database with name ems

Use ems

1. Insert the following data into "faculty" collection

db.faculty.insert([

{"name":"Krish","age":35,"gender":"M","exp":10,subjects:["DS","C","OS"],"type":"Full Time","qualification":"M.Tech" },

{"name":"Manoj", "age":38,"gender":"M","exp":12,subjects:["JAVA","DBMS"],"type":"Full Time", "qualification":"Ph.D"},

{"name":"Anush", "age":32,"gender":"F","exp":8,subjects:["C","CPP"],"type":"Part Time","qualification":"M.Tech" },

{"name":"Suresh", "age":40,"gender":"M","exp":9,subjects:["JAVA","DBMS","NETWORKING"],"type":"Full Time", "qualification":"Ph.D"},

{"name":"Rajesh", "age":35,"gender":"M","exp":7,subjects:["DS","C","OS"],"type":"Full Time","qualification":"M.Tech" },

{"name":"Mani", "age":38,"gender":"F","exp":10,subjects:["JAVA","DBMS","OS"],"type":"Part Time", "qualification":"Ph.D"},

{"name":"Sivani", "age":32,"gender":"F","exp":8,subjects:["C","CPP","MATHS"],"type":"Part Time","qualification":"M.Tech" },

{"name":"Nagesh", "age":39,"gender":"M","exp":11,subjects:["JAVA","DBMS","NETWORKING"],"type":"Full Time", "qualification":"Ph.D"},

{"name":"Nagesh", "age":35,"gender":"M","exp":9,subjects:["JAVA",".Net","NETWORKING"],"type":"Full Time", "qualification":"Ph.D"},

{"name":"Latha", "age":40,"gender":"F","exp":13,subjects:["MATHS"],"type":"Full Time", "qualification":"Ph.D"}])

1. Get the details of all the faculty.

db.faculty.find()

1. Get the count of all faculty members.

db.faculty.count()

>10

3. Get all the faculty members whose qualification is “Ph.D”.

db.faculty.find({qualification:"Ph.D"})

1. Get all the faculty members whose experience is between 8 to 12 years.

db.faculty.find({ exp : { $gt : 8, $lt : 12}});

1. Get all the faculty members who teach “MATHS” or “NETWORKING”.

db.faculty.find({$or:[{"subjects":"MATHS"},{"subjects":"NETWORKING"}]}).pretty();

1. Get all the faculty members who teach “MATHS” and whose age is more than 30 years and qualification must be “Ph.D”.

db.faculty.find({"subjects":"MATHS","age":{$gt:30},"qualification":"Ph.D"})

1. Get all the faculty members who are working part-time or who teach “JAVA”.

db.faculty.find({$or[{"type":"part-time"},{"subjects":"JAVA"}]})

8. Add the following new faculty members:

{"name":"Suresh Babu", "age":55, "gender":"M", "exp":25, subjects: ["MATHS","DE"], "type":"Full Time", "qualification":"Ph.D"}

db.faculty.insertOne({"name":"Suresh Babu", "age":55, "gender":"M", "exp":25, subjects:["MATHS","DE"], "type":"Full Time", "qualification":"Ph.D"});

9. Update the data of all faculty members by incrementing their age and exp by one year.

db.faculty.updateMany({},{$inc :{"age":1,"exp":1}})

10. Update the faculty “Sivani” with the following data: update qualification to “Ph.D” and type to “Full Time”.

db.faculty.updateOne({"name":"Sivani"},{$set:{"qualification":"Ph.D","type":"Full Time"}})

11. Update all faculty members who are teaching “MATHS” such that they should now also teach “PSK”.

db.faculty.updateMany({"subjects":"MATHS"},{$push:{"subjects":"PSK"}})

12. Delete all faculty members whose age is more than 55 years.

db.faculty.deleteMany({"age":{$gt:55}})

13. Get only the name and qualification of all faculty members.

db.faculty.find({},{"name":1,"qualification":1}).pretty();

14. Get the name, qualification and exp of all faculty members and display the same in ascending order of exp.

db.faculty.find({},{"name":1,"qualification":1,"exp":1}).sort({exp:1})

15. Sort the faculty details by their age (descending order) and get the details of the first five faculty members only.

db.faculty.find().sort({age:-1}).limit(5)