Assignments Group B

1.Aim: Design and develop MongoDB queries using CRUD operations;

Problem Statement: Design and Develop Database using MongoDB client - MongoDB Data srver to implement all basic CRUD operations and administration commands using two Tier architecture.(Command Prompt)

$ **mongo**
MongoDB shell version v3.6.8
connecting to: mongodb://127.0.0.1:27017
Implicit session: session { "id" : UUID("0ea4be2c-c497-4f8a-9fbc-c2bbadfc7413") }
MongoDB server version: 3.6.8
Server has startup warnings:
2023-10-23T08:36:14.055+0530 I STORAGE [initandlisten]
2023-10-23T08:36:14.055+0530 I STORAGE [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine
2023-10-23T08:36:14.055+0530 I STORAGE [initandlisten] **   See http://dochub.mongodb.org/core/prodnotes-filesystem
2023-10-23T08:36:18.417+0530 I CONTROL [initandlisten]
2023-10-23T08:36:18.417+0530 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
2023-10-23T08:36:18.417+0530 I CONTROL [initandlisten] **   Read and write access to data and configuration is unrestricted.
2023-10-23T08:36:18.417+0530 I CONTROL [initandlisten]
> use library
switched to db library
> db.book
insert({book_isbn:100,title:"DBMS",publisher_name:"ABC",author:{name:"korth",address:"pune", phone_no:[{landline:1111},{mobile:2222}]},publisher_city:"mumbai",price:1500,copies:50});
2023-10-23T09:23:54.653+0530 E QUERY   [thread1] SyntaxError: missing ; before statement
@(shell):1:8

a. Create a collection named Book. Add 5 documents in the collection with keys (book_isbn, title, punlisher_name, author(Name, Address, Phone No[landline, mobile]), publisher_city, price,copies)
--insert five records

>db.book.insert({book_isbn:100,title:"DBMS",publisher_name:"ABC",author:{name:"korth",address:"pune",phone_no:[{landline:1111},{mobile:2222}]},publisher_city:"mumbai",price:1500,copies:50});
WriteResult({ "nInserted" : 1 })

> db.book.find();
{ "_id" : ObjectId("6535ee8d352e54c27af32ab1"), "book_isbn" : 100, "title" : "DBMS", "publisher_name" : "ABC", "author" : { "name" : "korth", "address" : "pune", "phone_no" : [{ "landline" : 1111 }, { "mobile" : 2222 }] }, "publisher_city" : "mumbai", "price" : 1500, "copies" : 50 }

> db.book.find().pretty();
{

```
        "_id" : ObjectId("6535ee8d352e54c27af32ab1"),
        "book_isbn" : 100,
        "title" : "DBMS",
        "publisher_name" : "ABC",
        "author" : {
                "name" : "korth",
                "address" : "pune",
                "phone_no" : [
                        {
                                "landline" : 1111
                        },
                        {
                                "mobile" : 2222
                        }
                ]
        },
        "publisher_city" : "mumbai",
        "price" : 1500,
        "copies" : 50
}

>
db.book.insert({book_isbn:200,title:"TOC",publisher_name:"XYZ",author:{name:"Albert",address:
"Baramati",phone_no:[{landline:5555},{mobile:6666}]},publisher_city:"Delhi",price:2000,copies:
10});
WriteResult({ "nInserted" : 1 })

> db.book.find().pretty();
{
        "_id" : ObjectId("6535ee8d352e54c27af32ab1"),
        "book_isbn" : 100,
        "title" : "DBMS",
        "publisher_name" : "ABC",
        "author" : {
                "name" : "korth",
                "address" : "pune",
                "phone_no" : [
                        {
                                "landline" : 1111
                        },
                        {
                                "mobile" : 2222
                        }
                ]
        },
        "publisher_city" : "mumbai",
        "price" : 1500,
        "copies" : 50
}
{
        "_id" : ObjectId("6535f004352e54c27af32ab2"),
        "book_isbn" : 200,
```

```
                "title" : "TOC",
                "publisher_name" : "XYZ",
                "author" : {
                        "name" : "Albert",
                        "address" : "Baramati",
                        "phone_no" : [
                                {
                                        "landline" : 5555
                                },
                                {
                                        "mobile" : 6666
                                }
                        ]
                },
                "publisher_city" : "Delhi",
                "price" : 2000,
                "copies" : 10
}

 >
db.book.insert({book_isbn:300,title:"CNS",publisher_name:"DEF",author:{name:"Aeinstein",addre
ss:"Thane",phone_no:[{landline:3333},{mobile:4444}]},publisher_city:"Dhule",price:3000,copies:
20});
WriteResult({ "nInserted" : 1 })


> db.book.find().pretty();
{
        "_id" : ObjectId("6535ee8d352e54c27af32ab1"),
        "book_isbn" : 100,
        "title" : "DBMS",
        "publisher_name" : "ABC",
        "author" : {
                "name" : "korth",
                "address" : "pune",
                "phone_no" : [
                        {
                                "landline" : 1111
                        },
                        {
                                "mobile" : 2222
                        }
                ]
        },
        "publisher_city" : "mumbai",
        "price" : 1500,
        "copies" : 50
}
{
        "_id" : ObjectId("6535f004352e54c27af32ab2"),
        "book_isbn" : 200,
        "title" : "TOC",
```

```
        "publisher_name" : "XYZ",
        "author" : {
                "name" : "Albert",
                "address" : "Baramati",
                "phone_no" : [
                        {
                                "landline" : 5555
                        },
                        {
                                "mobile" : 6666
                        }
                ]
        },
        "publisher_city" : "Delhi",
        "price" : 2000,
        "copies" : 10
}
{
        "_id" : ObjectId("6535f3c8352e54c27af32ab3"),
        "book_isbn" : 300,
        "title" : "CNS",
        "publisher_name" : "DEF",
        "author" : {
                "name" : "Aeinstein",
                "address" : "Thane",
                "phone_no" : [
                        {
                                "landline" : 3333
                        },
                        {
                                "mobile" : 4444
                        }
                ]
        },
        "publisher_city" : "Dhule",
        "price" : 3000,
        "copies" : 20
}


>db.book.insert({book_isbn:300,title:"spos",publisher_name:"lmn",author:{name:"sunmicosystem"
,address:"delhi",phone_no:[{landline:6666},{mobile:7777}]},publisher_city:"Daund",price:4000,co
pies:30});
WriteResult({ "nInserted" : 1 })


> db.book.find().pretty();
{
        "_id" : ObjectId("6535ee8d352e54c27af32ab1"),
        "book_isbn" : 100,
        "title" : "DBMS",
```

```
                "publisher_name" : "ABC",
                "author" : {
                        "name" : "korth",
                        "address" : "pune",
                        "phone_no" : [
                                {
                                        "landline" : 1111
                                },
                                {
                                        "mobile" : 2222
                                }
                        ]
                },
                "publisher_city" : "mumbai",
                "price" : 1500,
                "copies" : 50
        }
        {
                "_id" : ObjectId("6535f004352e54c27af32ab2"),
                "book_isbn" : 200,
                "title" : "TOC",
                "publisher_name" : "XYZ",
                "author" : {
                        "name" : "Albert",
                        "address" : "Baramati",
                        "phone_no" : [
                                {
                                        "landline" : 5555
                                },
                                {
                                        "mobile" : 6666
                                }
                        ]
                },
                "publisher_city" : "Delhi",
                "price" : 2000,
                "copies" : 10
        }
        {
                "_id" : ObjectId("6535f3c8352e54c27af32ab3"),
                "book_isbn" : 300,
                "title" : "CNS",
                "publisher_name" : "DEF",
                "author" : {
                        "name" : "Aeinstein",
                        "address" : "Thane",
                        "phone_no" : [
                                {
                                        "landline" : 3333
                                },
                                {
                                        "mobile" : 4444
```

```
                    }
                ]
        },
        "publisher_city" : "Dhule",
        "price" : 3000,
        "copies" : 20
}

{
        "_id" : ObjectId("6535f61c352e54c27af32ab5"),
        "book_isbn" : 300,
        "title" : "spos",
        "publisher_name" : "lmn",
        "author" : {
                "name" : "sunmicosystem",
                "address" : "delhi",
                "phone_no" : [
                        {
                                "landline" : 6666
                        },
                        {
                                "mobile" : 7777
                        }
                ]
        },
        "publisher_city" : "Daund",
        "price" : 4000,
        "copies" : 30
}

>db.book.insert({book_isbn:300,title:"IOT",publisher_name:"OPQ",author:{name:"Albert",address
:"baramati",phone_no:[{landline:8888},{mobile:9999}]},publisher_city:"Delhi",price:5000,copies:
60});
WriteResult({ "nInserted" : 1 })


> db.book.find().pretty();
{
        "_id" : ObjectId("6535ee8d352e54c27af32ab1"),
        "book_isbn" : 100,
        "title" : "DBMS",
        "publisher_name" : "ABC",
        "author" : {
                "name" : "korth",
                "address" : "pune",
                "phone_no" : [
                        {
                                "landline" : 1111
                        },
                        {
                                "mobile" : 2222
                        }
```

```
                ]
        },
        "publisher_city" : "mumbai",
        "price" : 1500,
        "copies" : 50
}
{
        "_id" : ObjectId("6535f004352e54c27af32ab2"),
        "book_isbn" : 200,
        "title" : "TOC",
        "publisher_name" : "XYZ",
        "author" : {
                "name" : "Albert",
                "address" : "Baramati",
                "phone_no" : [
                        {
                                "landline" : 5555
                        },
                        {
                                "mobile" : 6666
                        }
                ]
        },
        "publisher_city" : "Delhi",
        "price" : 2000,
        "copies" : 10
}
{
        "_id" : ObjectId("6535f3c8352e54c27af32ab3"),
        "book_isbn" : 300,
        "title" : "CNS",
        "publisher_name" : "DEF",
        "author" : {
                "name" : "Aeinstein",
                "address" : "Thane",
                "phone_no" : [
                        {
                                "landline" : 3333
                        },
                        {
                                "mobile" : 4444
                        }
                ]
        },
        "publisher_city" : "Dhule",
        "price" : 3000,
        "copies" : 20
}

{
        "_id" : ObjectId("6535f61c352e54c27af32ab5"),
        "book_isbn" : 300,
```

```
                "title" : "spos",
                "publisher_name" : "lmn",
                "author" : {
                        "name" : "sunmicosystem",
                        "address" : "delhi",
                        "phone_no" : [
                                {
                                        "landline" : 6666
                                },
                                {
                                        "mobile" : 7777
                                }
                        ]
                },
                "publisher_city" : "Daund",
                "price" : 4000,
                "copies" : 30
}
{
                "_id" : ObjectId("6535f6b3352e54c27af32ab6"),
                "book_isbn" : 300,
                "title" : "IOT",
                "publisher_name" : "OPQ",
                "author" : {
                        "name" : "Albert",
                        "address" : "baramati",
                        "phone_no" : [
                                {
                                        "landline" : 8888
                                },
                                {
                                        "mobile" : 9999
                                }
                        ]
                },
                "publisher_city" : "Delhi",
                "price" : 5000,
                "copies" : 60
}
```

b. Give details of Books whose Publisher lives in "baramati".

```
> db.book.find({"author.address":"baramati"});
{ "_id" : ObjectId("6535f6b3352e54c27af32ab6"), "book_isbn" : 300, "title" : "Biology",
"publisher_name" : "OPQ", "author" : { "name" : "Albert", "address" : "baramati", "phone_no" :
[ { "landline" : 8888 }, { "mobile" : 9999 } ] }, "publisher_city" : "Delhi", "price" : 5000, "copies" :
70 }
```

c. Delete name Book from Book whose name start with "D"

```
> db.book.find({title:/^D/})
{ "_id" : ObjectId("6535ee8d352e54c27af32ab1"), "book_isbn" : 100, "title" : "DBMS",
"publisher_name" : "ABC", "author" : { "name" : "korth", "address" : "pune", "phone_no" :
[ { "landline" : 1111 }, { "mobile" : 2222 } ] }, "publisher_city" : "mumbai", "price" : 1500,
"copies" : 50 }
```

--remove the title starting with D

```
> db.book.remove({title:/^D/})
WriteResult({ "nRemoved" : 1 })
```

--find the title ending with S

```
> db.book.find({title:{$regex:/S/}})
{ "_id" : ObjectId("6535f3c8352e54c27af32ab3"), "book_isbn" : 300, "title" : "CNS",
"publisher_name" : "DEF", "author" : { "name" : "Aeinstein", "address" : "Thane", "phone_no" :
[ { "landline" : 3333 }, { "mobile" : 4444 } ] }, "publisher_city" : "Dhule", "price" : 3000, "copies" :
20 }
```

d. Change the copies of book

```
> db.book.update({publisher_name:"OPQ"},{$set:{copies:70}});
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.book.find().pretty();
{ "_id" : ObjectId("6535f004352e54c27af32ab2"), "title" : "JAVA" }
{
        "_id" : ObjectId("6535f3c8352e54c27af32ab3"),
        "book_isbn" : 300,
        "title" : "CNS",
        "publisher_name" : "DEF",
        "author" : {
                "name" : "Aeinstein",
                "address" : "Thane",
                "phone_no" : [
                        {
                                "landline" : 3333
                        },
                        {
                                "mobile" : 4444
                        }
                ]
        },
        "publisher_city" : "Dhule",
        "price" : 3000,
```

```
        "copies" : 20
}
{
        "_id" : ObjectId("6535f5b7352e54c27af32ab4"),
        "book_isbn" : 300,
        "title" : "CNS",
        "publisher_name" : "DEF",
        "author" : {
                "name" : "Aeinstein",
                "address" : "Thane",
                "phone_no" : [
                        {
                                "landline" : 3333
                        },
                        {
                                "mobile" : 4444
                        }
                ]
        },
        "publisher_city" : "Dhule",
        "price" : 3000,
        "copies" : 20
}
{
        "_id" : ObjectId("6535f6b3352e54c27af32ab6"),
        "book_isbn" : 300,
        "title" : "IOT",
        "publisher_name" : "OPQ",
        "author" : {
                "name" : "Albert",
                "address" : "baramati",
                "phone_no" : [
                        {
                                "landline" : 8888
                        },
                        {
                                "mobile" : 9999
                        }
                ]
        },
        "publisher_city" : "Delhi",
        "price" : 5000,
        "copies" : 70
}
```

Change the title of book

```
> db.book.update({publisher_name:"OPQ"},{$set:{title:"Biology"}});
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.book.find().pretty();
{ "_id" : ObjectId("6535f004352e54c27af32ab2"), "title" : "JAVA" }
{
```

```
		"_id" : ObjectId("6535f3c8352e54c27af32ab3"),
		"book_isbn" : 300,
		"title" : "CNS",
		"publisher_name" : "DEF",
		"author" : {
			"name" : "Aeinstein",
			"address" : "Thane",
			"phone_no" : [
				{
					"landline" : 3333
				},
				{
					"mobile" : 4444
				}
			]
		},
		"publisher_city" : "Dhule",
		"price" : 3000,
		"copies" : 20
}
{
		"_id" : ObjectId("6535f5b7352e54c27af32ab4"),
		"book_isbn" : 300,
		"title" : "CNS",
		"publisher_name" : "DEF",
		"author" : {
			"name" : "Aeinstein",
			"address" : "Thane",
			"phone_no" : [
				{
					"landline" : 3333
				},
				{
					"mobile" : 4444
				}
			]
		},
		"publisher_city" : "Dhule",
		"price" : 3000,
		"copies" : 20
}
{
		"_id" : ObjectId("6535f6b3352e54c27af32ab6"),
		"book_isbn" : 300,
		"title" : "Biology",
		"publisher_name" : "OPQ",
		"author" : {
			"name" : "Albert",
			"address" : "baramati",
			"phone_no" : [
				{
					"landline" : 8888
```

```
                },
                {
                        "mobile" : 9999
                }
            ]
    },
    "publisher_city" : "Delhi",
    "price" : 5000,
    "copies" : 70
}
```

e. Find the details of title named "CNS".

```
> db.book.find({title:"CNS"});
{ "_id" : ObjectId("6535f3c8352e54c27af32ab3"), "book_isbn" : 300, "title" : "CNS",
"publisher_name" : "DEF", "author" : { "name" : "Aeinstein", "address" : "Thane", "phone_no" :
[ { "landline" : 3333 }, { "mobile" : 4444 } ] }, "publisher_city" : "Dhule", "price" : 3000, "copies" :
20 }

-- sort

b.book.find().sort({book_isbn:-1});
{ "_id" : ObjectId("6535f3c8352e54c27af32ab3"), "book_isbn" : 300, "title" : "CNS",
"publisher_name" : "DEF", "author" : { "name" : "Aeinstein", "address" : "Thane", "phone_no" :
[ { "landline" : 3333 }, { "mobile" : 4444 } ] }, "publisher_city" : "Dhule", "price" : 3000, "copies" :
20 }

{ "_id" : ObjectId("6535f61c352e54c27af32ab5"), "book_isbn" : 300, "title" : "spos",
"publisher_name" : "lmn", "author" : { "name" : "sunmicosystem", "address" : "delhi",
"phone_no" : [ { "landline" : 6666 }, { "mobile" : 7777 } ] }, "publisher_city" : "Daund", "price" :
4000, "copies" : 30 }
{ "_id" : ObjectId("6535f6b3352e54c27af32ab6"), "book_isbn" : 300, "title" : "IOT",
"publisher_name" : "OPQ", "author" : { "name" : "Albert", "address" : "baramati", "phone_no" :
[ { "landline" : 8888 }, { "mobile" : 9999 } ] }, "publisher_city" : "Delhi", "price" : 5000, "copies" :
60 }


> db.book.find({title:"CNS"},{title:1,_id:0});
{ "title" : "CNS" }

{ "_id" : ObjectId("6535f61c352e54c27af32ab5"), "book_isbn" : 300, "title" : "spos",
"publisher_name" : "lmn", "author" : { "name" : "sunmicosystem", "address" : "delhi",
"phone_no" : [ { "landline" : 6666 }, { "mobile" : 7777 } ] }, "publisher_city" : "Daund", "price" :
4000, "copies" : 30 }

> db.book.remove({"author.name":"sunmicosystem"});
WriteResult({ "nRemoved" : 1 })

> db.book.find().pretty();
{ "_id" : ObjectId("6535f004352e54c27af32ab2"), "title" : "JAVA" }
{
```

```
        "_id" : ObjectId("6535f3c8352e54c27af32ab3"),
        "book_isbn" : 300,
        "title" : "CNS",
        "publisher_name" : "DEF",
        "author" : {
                "name" : "Aeinstein",
                "address" : "Thane",
                "phone_no" : [
                        {
                                "landline" : 3333
                        },
                        {
                                "mobile" : 4444
                        }
                ]
        },
        "publisher_city" : "Dhule",
        "price" : 3000,
        "copies" : 20
}

{
        "_id" : ObjectId("6535f6b3352e54c27af32ab6"),
        "book_isbn" : 300,
        "title" : "IOT",
        "publisher_name" : "OPQ",
        "author" : {
                "name" : "Albert",
                "address" : "baramati",
                "phone_no" : [
                        {
                                "landline" : 8888
                        },
                        {
                                "mobile" : 9999
                        }
                ]
        },
        "publisher_city" : "Delhi",
        "price" : 5000,
        "copies" : 60
}
```