

MEAN STACK LAB

PROGRAM 1:

Aim : Create a Database related to Hospital Management System and perform CRUD operations using MongoDB:

Please enter a MongoDB connection string (Default: mongodb://localhost/):

Current Mongosh Log ID: 63e9b8a171f49fbdf26ee7eb

Connecting to:

`mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+1.6.2`

Using MongoDB: 6.0.3

Using Mongosh: 1.6.2

For mongosh info see: <https://docs.mongodb.com/mongosh-shell/>

The server generated these startup warnings when booting 2023-01-19T15:30:28.420+05:30:
Access control is not enabled for the database. Read and write access to data and configuration is unrestricted.

Enable MongoDB's free cloud-based monitoring service, which will then receive and display metrics about your deployment (disk utilization, CPU, operation statistics, etc).

The monitoring data will be available on a MongoDB website with a unique URL accessible to you and anyone you share the URL with. MongoDB may use this information to make product improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: `db.enableFreeMonitoring()`

To permanently disable this reminder, run the following command: `db.disableFreeMonitoring()`

Hospital Management System:

Creation of Database:

```
test> use Hospital_Management_System
```

```
OUTPUT:switched to db Hospital_Management_System
```

Creation of Doctor Collection:

```
Hospital_Management_System> db.createCollection("Doctor")
```

```
{ ok: 1 }
```

Inserting Documents:

```
Hospital_Management_System>  
db.Doctor.insertOne({'Did':1,'Dname':'raju','Qualification':'MBBS','Specalization':'Cardiologist','Experience':10,'Patient_count':10})
```

OUTPUT: {

acknowledged: true,

insertedId: ObjectId("63f09fc5a269eed02afb1e0f")

}

```
Hospital_Management_System>  
db.Doctor.insertOne({'Did':2,'Dname':'ravi','Qualification':'MBBS','Specalization':'Nephrologist','Experience':10,'Patient_count':10})
```

{

acknowledged: true,

insertedId: ObjectId("63f0a041a269eed02afb1e10")

}

```
Hospital_Management_System>  
db.Doctor.insertMany([{'Did':4,'Dname':'Srinu','Qualification':'MBBS','Specalization':'Pulmologist','Experience':10,'Patient_count':10},{ 'Did':5,'Dname':'radha','Qualification':'MBBS','Specalization':'Gynacologist','Experience':10,'Patient_count':10}])
```

{

acknowledged: true,

insertedIds: {

'0': ObjectId("63f0a39ba269eed02afb1e12"),

'1': ObjectId("63f0a39ba269eed02afb1e13")

}

}

Retrieving Documents:

```
Hospital_Management_System> db.Doctor.find({})
```

[

```
{
  _id: ObjectId("63f09fc5a269eed02afb1e0f"),
  Did: 1,
  Dname: 'raju',
  Qualification: 'MBBS',
  Specalization: 'Cardiologist',
  Experience: 10,
  Patient_count: 10
},
{
  _id: ObjectId("63f0a041a269eed02afb1e10"),
  Did: 2,
  Dname: 'ravi',
  Qualification: 'MBBS',
  Specalization: 'Nephrologist',
  Experience: 10,
  Patient_count: 10
},
{
  _id: ObjectId("63f0a2fba269eed02afb1e11"),
  Did: 3,
  Dname: 'gopi',
  Qualification: 'MBBS',
  Specalization: 'Neurologist',
  Experience: 10,
  Patient_count: 10
},
```

```
{
  _id: ObjectId("63f0a39ba269eed02afb1e12"),
  Did: 4,
  Dname: 'Srinu',
  Qualification: 'MBBS',
  Specalization: 'Pulmologist',
  Experience: 10,
  Patient_count: 10
},
{
  _id: ObjectId("63f0a39ba269eed02afb1e13"),
  Did: 5,
  Dname: 'radha',
  Qualification: 'MBBS',
  Specalization: 'Gynacologist',
  Experience: 10,
  Patient_count: 10
}]
```

Limit fuction:

```
Hospital_Management_System> db.Doctor.find({'Dname':'gopi'})
```

```
[
  {
    _id: ObjectId("63f0a2fba269eed02afb1e11"),
    Did: 3,
    Dname: 'gopi',
    Qualification: 'MBBS',
    Specalization: 'Neurologist',
```

```

    Experience: 10,
    Patient_count: 10
  }
]
Hospital_Management_System> db.Doctor.find({}).limit(2)
[
  {
    _id: ObjectId("63f09fc5a269eed02afb1e0f"),
    Did: 1,
    Dname: 'raju',
    Qualification: 'MBBS',
    Specalization: 'Cardiologist',
    Experience: 10
    Patient_count: 10
  },
  {
    _id: ObjectId("63f0a041a269eed02afb1e10"),
    Did: 2,
    Dname: 'ravi',
    Qualification: 'MBBS',
    Specalization: 'Nephrologist',
    Experience: 10,
    Patient_count: 10
  }
]

```

Updating Documents:

```

Hospital_Management_System>db.Doctor.updateOne({'Specalization':'Nephrologist'},{$set: {'Specalization':'opthamologist'}}

```

```
})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
Hospital_Management_System> db.Doctor.find({'Did':2})
[
  {
    _id: ObjectId("63f0a041a269eed02afb1e10"),
    Did: 2,
    Dname: 'ravi',
    Qualification: 'MBBS',
    Specalization: 'opthamologist',
    Experience: 10,
    Patient_count: 10
  }
]
```

Deleting Documents:

```
Hospital_Management_System> db.Doctor.deleteOne({'Did':5})
{ acknowledged: true, deletedCount: 1 }
```

Deleting many Documents:

```
{ acknowledged: true, deletedCount: 1 }
Hospital_Management_System> db.Doctor.deleteMany({'Patient_count':10})
{ acknowledged: true, deletedCount: 4 }
```

```
Hospital_Management_System> db.Doctor.find({})
```

List of Databases:

```
Hospital_Management_System> show dbs
```

```
Hospital_Management_System 60.00 KiB
```

```
admin          40.00 KiB
```

```
config        108.00 KiB
```

```
local         72.00 KiB
```

```
local         72.00 KiB
```

List of collections:

```
Hospital_Management_System> show collections
```

```
Doctor
```

Creation of Database:

```
test> use hmsc2
```

```
switched to db hmsc2
```

Creation of Doctor Collection:

```
hmsc2> db.createCollection("Doctor")
```

```
{ ok: 1 }
```

Inserting Documents:

```
hmsc2> db.Doctor.insertOne({'id':'d1','name':'ravi','specialization':'cardio','designation':'mbbs'})
```

```
{
```

```
  acknowledged: true,
```

```
  insertedId: ObjectId("63e9bb405b630ef3b047bf83")
```

```
}
```

```
hmsc2>
```

```
db.Doctor.insertOne({'id':'d2','name':'raju','specialization':'physio','designation':'chemist'})
```

```
{
```

```
acknowledged: true,
insertedId: ObjectId("63e9bbdd5b630ef3b047bf84")
}

hmsc2>
db.Doctor.insertOne({'id':'d3','name':'ramesh','specialization':'gynecologist','designation':'mbbs'
})

{
  acknowledged: true,
  insertedId: ObjectId("63e9bc3c5b630ef3b047bf85")
}
```

Creation of Patient Collection:

```
hmsc2> db.createCollection("patient")

{ ok: 1 }
```

Inserting Documents:

```
hmsc2>
db.patient.insertOne({'id':101,'name':'ramana','mobile':1234,'wardnumber':45,'visits':5,'OP
date':11/2/22,'disease':'heartstroke'})

{
  acknowledged: true,
  insertedId: ObjectId("63e9c00f5b630ef3b047bf86")
}

hmsc2>
db.patient.insertOne({'id':102,'name':'max','mobile':3456,'wardnumber':45,'visits':3,'OP
date':5/2/23,'disease':'tumor'})

{
  acknowledged: true,
  insertedId: ObjectId("63e9c0c45b630ef3b047bf87")
}
```



```
hmsc2>
db.patient.insertOne({'id':103,'name': 'max','mobile':98765,'wardnumber':45,'visits':1,'OP
date':15/2/23,'disease':'tooth ache'})

{
  acknowledged: true,
  insertedId: ObjectId("63e9c1385b630ef3b047bf88")
}
```

Creation of Nurse Collection:

```
hmsc2> db.createCollection("nurse")

{ ok: 1 }
```

Inserting Documents:

```
hmsc2> db.nurse.insertOne({'id':501,'name':'celena','docid':'d1','specilization':'nursing'})

{
  acknowledged: true,
  insertedId: ObjectId("63e9c40e5b630ef3b047bf89")
}

hmsc2> db.nurse.insertOne({'id':502,'name':'taylor','docid':'d2','specilization':'nursing'})

{
  acknowledged: true,
  insertedId: ObjectId("63e9c4785b630ef3b047bf8a")
}

hmsc2> db.nurse.insertOne({'id':503,'name':'andrea','docid':'d2','specilization':'bpharm'})

{
  acknowledged: true,
  insertedId: ObjectId("63e9c4c35b630ef3b047bf8b")
}
```

CREATION OF OPERATION THEATRE COLLECTION:

```
hmsc2> db.createCollection("operation theatre")
```

```
{ ok: 1 }
```

INSERTING DOCUMENTS:

```
hmsc2>
```

```
db.operationtheatre.insertOne({'pid':304,'did':'d1','surgerytype':'heart','surgerydate':'21/3/22','cost':5000000})
```

```
{
  acknowledged: true,
  insertedId: ObjectId("63e9ca295b630ef3b047bf8c")
}
```

```
hmsc2>
```

```
db.operationtheatre.insertOne({'pid':304,'did':'d1','surgerytype':'heart','surgerydate':'21/3/22','cost':5000000})
```

```
{
  acknowledged: true,
  insertedId: ObjectId("63e9cae55b630ef3b047bf8d")
}
```

```
hmsc2>
```

```
db.operationtheatre.insertOne({'pid':303,'did':'d2','surgerytype':'bypass','surgerydate':'21/3/22','cost':600000})
```

```
{
  acknowledged: true,
  insertedId: ObjectId("63e9cb435b630ef3b047bf8e")
}
```

```
hmsc2>
```

```
db.operationtheatre.insertOne({'pid':302,'did':'d3','surgerytype':'apendisitis','surgerydate':'23/3/22','cost':6000})
```

```
{
  acknowledged: true,
```

```
insertedId: ObjectId("63e9cb8a5b630ef3b047bf8f")
}
```

CREATION OF OPERATOR COLLECTION:

```
hmsc2> db.createCollection("operator")
{ ok: 1 }
```

INSERTING DOCUMENTS :

```
hmsc2> db.operator.insertOne({'did':'d1','dname':'ravi','nurseid':501})
{
  acknowledged: true,
  insertedId: ObjectId("63e9cebf5b630ef3b047bf90")
}
```

```
hmsc2> db.operator.insertOne({'did':'d2','dname':'raju','nurseid':502})
{
  acknowledged: true,
  insertedId: ObjectId("63e9cef05b630ef3b047bf91")
}
```

```
hmsc2> db.operator.insertOne({'did':'d3','dname':'ramesh','nurseid':503})
{
  acknowledged: true,
  insertedId: ObjectId("63e9cf0c5b630ef3b047bf92")
}
```

CREATE COLLECTION MEDICALCENTER:

```
hmsc2> db.createCollection("medicalcenter")
{ ok: 1 }
```

INSERTING DOCUMENTS :

```
hmsc2>
db.medicalcenter.insertOne({'mid':901,'mname':'reddypharma','prid':801,'quantity':'500mg'})
```

```

{
  acknowledged: true,
  insertedId: ObjectId("63e9d4a05b630ef3b047bf93")
}

hmsc2> db.medicalcenter.insertOne({'mid':902,'mname':'appolo','prid':802,'quantity':'50mg'})

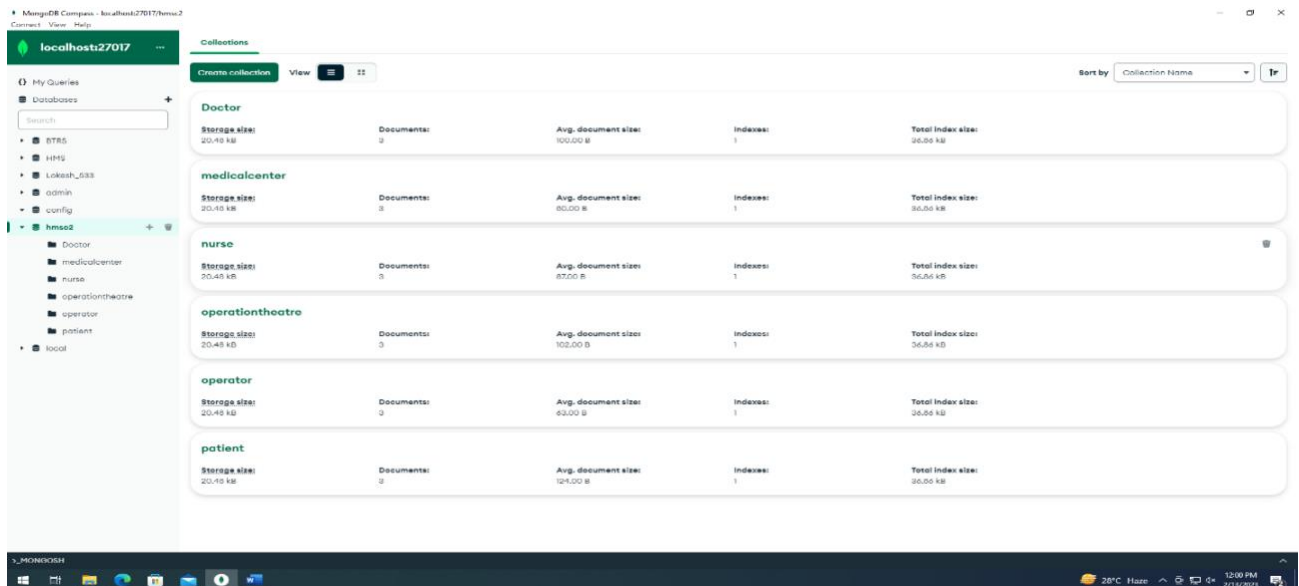
{
  acknowledged: true,
  insertedId: ObjectId("63e9d4d45b630ef3b047bf94")
}

hmsc2> db.medicalcenter.insertOne({'mid':903,'mname':'medplus','prid':803,'quantity':'60mg'})

{
  acknowledged: true,
  insertedId: ObjectId("63e9d4f65b630ef3b047bf95")
}

```

OUTPUT IN MONGODB: COLLECTIONS IN HTMC2



The screenshot shows the MongoDB Compass interface. On the left, the 'Databases' sidebar lists 'hmsc2' as the selected database. The main panel displays a table of collections for 'hmsc2'. The table has columns for 'Storage size', 'Documents', 'Avg. document size', 'Indexes', and 'Total index size'.

Collection Name	Storage size	Documents	Avg. document size	Indexes	Total index size
Doctor	20.49 KB	3	100.00 B	1	26.06 KB
medicalcenter	20.49 KB	3	80.00 B	1	36.06 KB
nurse	20.49 KB	3	80.00 B	1	36.06 KB
operationtheatre	20.49 KB	3	100.00 B	1	36.06 KB
operator	20.49 KB	3	80.00 B	1	36.06 KB
patient	20.49 KB	3	120.00 B	1	36.06 KB

DOCTOR COLLECTION:

MongoDB Compass - localhost:27017/hmsc2.Doctor
Connect View Collection Help

localhost:27017 ... Documents hmsc2.Doctor +

My Queries
Databases
Search

- BTRS
- HMS
- Lokesh_533
- admin
- config
- hmsc2
 - Doctor ...
 - medicalcenter
 - nurse
 - operationtheatre
 - operator
 - patient
- local

hmsc2.Doctor

Documents Aggregations Schema Explain Plan Indexes Validation

Filter Type a query: { field: 'value' }

ADD DATA EXPORT COLLECTION

```
{
  "_id": ObjectId('63e9bb405b630ef3b047bf83'),
  "id": "d1",
  "name": "ravi",
  "specialization": "cardio",
  "designation": "mbbs"
}
```

```
{
  "_id": ObjectId('63e9bbdd5b630ef3b047bf84'),
  "id": "d2",
  "name": "raju",
  "specialization": "physio",
  "designation": "chemist"
}
```

```
{
  "_id": ObjectId('63e9bc3c5b630ef3b047bf85'),
  "id": "d3",
  "name": "ramesh",
  "specialization": "gynocologist",
  "designation": "mbbs"
}
```

MEDICALCENTER COLLECTION:

MongoDB Compass - localhost:27017/hmsc2.medicalcenter
Connect View Collection Help

localhost:27017 ... Documents hmsc2.medicalce... +

My Queries
Databases
Search

- BTRS
- HMS
- Lokesh_533
- admin
- config
- hmsc2
 - Doctor
 - medicalcenter ...
 - nurse
 - operationtheatre
 - operator
 - patient
- local

hmsc2.medicalcenter

Documents Aggregations Schema Explain Plan Indexes Validation

Filter Type a query: { field: 'value' }

ADD DATA EXPORT COLLECTION

```
{
  "_id": ObjectId('63e9d4a05b630ef3b047bf93'),
  "mid": 901,
  "mname": "reddypharma",
  "prid": 801,
  "quantity": "500mg"
}
```

```
{
  "_id": ObjectId('63e9d4d45b630ef3b047bf94'),
  "mid": 902,
  "mname": "appolo",
  "prid": 802,
  "quantity": "50mg"
}
```

```
{
  "_id": ObjectId('63e9d4f65b630ef3b047bf95'),
  "mid": 903,
  "mname": "medplus",
  "prid": 803,
  "quantity": "60mg"
}
```

NURSE COLLECTION:

The screenshot shows the MongoDB Compass interface for the `hmsc2.nurse` collection. The left sidebar displays the database structure, with `hmsc2` expanded to show the `nurse` collection. The main panel shows three documents in the `nurse` collection:

- Document 1: `{ "_id": ObjectId("63e9c48b5b38ef3b047bf89"), "id": 501, "name": "celena", "docId": "d1", "specilization": "nursing" }`
- Document 2: `{ "_id": ObjectId("63e9c4785b38ef3b047bf8a"), "id": 502, "name": "taylor", "docId": "d2", "specilization": "nursing" }`
- Document 3: `{ "_id": ObjectId("63e9c435b38ef3b047bf8b"), "id": 503, "name": "andrea", "docId": "d2", "specilization": "bpharm" }`

The interface includes a search bar, a filter button, and a "Type a query" field. The bottom status bar shows the system time as 12:07 PM on 2/13/2023.

OPERATIONTHEATRE COLLECTION:

The screenshot shows the MongoDB Compass interface for the `hmsc2.operationtheatre` collection. The left sidebar displays the database structure, with `hmsc2` expanded to show the `operationtheatre` collection. The main panel shows three documents in the `operationtheatre` collection:

- Document 1: `{ "_id": ObjectId("63e9ca295b38ef3b047bf8c"), "pid": 304, "did": "d1", "surgerytype": "heart", "surgerydate": "6.31818181818182", "cost": 5000000 }`
- Document 2: `{ "_id": ObjectId("63e9cb435b38ef3b047bf8e"), "pid": 303, "did": "d2", "surgerytype": "bypass", "surgerydate": "21/3/22", "cost": 60000 }`
- Document 3: `{ "_id": ObjectId("63e9cb8ab38ef3b047bf8f"), "pid": 302, "did": "d3", "surgerytype": "spend15tita", "surgerydate": "23/3/22", "cost": 6000 }`

The interface includes a search bar, a filter button, and a "Type a query" field. The bottom status bar shows the system time as 12:07 PM on 2/13/2023.

PATIENT COLLECTION:

MongoDB Compass - localhost:27017/hmsc2.patient

Connect View Collection Help

localhost:27017Documentshmsc2.patient

My Queries

Databases

Search

BTRS

HMS

Lokesh_533

admin

config

hmsc2

- Doctor
- medicalcenter
- nurse
- operationtheatre
- operator
- patient

local

hmsc2.patient

DocumentsAggregationsSchemaExplain PlanIndexesValidation

FilterType a query: { Field: 'value' }

ADD DATAEXPORT COLLECTION

1 - 3 of 3

_id: ObjectId('63e9c8f95b38ef3b047bf86')

Id: 101

name: "ramana"

mobile: 1234

wardnumber: 45

visits: 5

OP date: 8.25

disease: "heartstroke"

_id: ObjectId('63e9c8c45b38ef3b047bf87')

Id: 102

name: "raja"

mobile: 3456

wardnumber: 45

visits: 3

OP date: 0.18669565217391384

disease: "tumor"

_id: ObjectId('63e9c1385b38ef3b047bf88')

Id: 103

name: "raja"

mobile: 98765

wardnumber: 45

visits: 1

OP date: 0.32688695652173914

disease: "tooth ache"

28°C Haze12:07 PM2/13/2023