

## ASSIGNMENT – 2 (MongoDB)

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### Database and Collection Operations:

```
db> use jisl
switched to db jisl
jisl> show dbs
DemoDB      8.00 KiB
admin       40.00 KiB
config      96.00 KiB
local      120.00 KiB
jisl> db.dropDatabase()
{ ok: 1, dropped: 'jisl' }
```

```
admin> db.MyFirstTable.drop()
true
admin> show collections
system.version
admin> use MyFirstDB
switched to db MyFirstDB
MyFirstDB> db.createCollection("My First Table")
{ ok: 1 }
MyFirstDB> show collections
My First Table
```

### CRUD Operations:

#### Create Operations:

##### 1. db.collection.insertOne()

```
MyFirstDB> db.MyFirstTable.insertOne({
... name : "Swathi", age: "22", gender: "Female" })
{
  acknowledged: true,
  insertedId: ObjectId('687e0cc3ef35f5fe76cb0ce2')
}
```

## 2. db.collection.insertMany()

```
MyFirstDB> db.MyFirstTable.insertMany([{ name: "Chundeli", age: "21", gender: "Female"}, {name: "Bi Unkil", age: "74", gender: "Bi"}])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('687e0d1fef35f5fe76cb0ce3'),
    '1': ObjectId('687e0d1fef35f5fe76cb0ce4')
  }
}
```

## Read Operations:

### 1. db.collection.find()

```
MyFirstDB> db.MyFirstTable.find()
[
  {
    _id: ObjectId('687e0cc3ef35f5fe76cb0ce2'),
    name: 'Swathi',
    age: '22',
    gender: 'Female'
  },
  {
    _id: ObjectId('687e0d1fef35f5fe76cb0ce3'),
    name: 'Chundeli',
    age: '21',
    gender: 'Female'
  },
  {
    _id: ObjectId('687e0d1fef35f5fe76cb0ce4'),
    name: 'Bi Unkil',
    age: '74',
    gender: 'Bi'
  }
]
```

### 2. db.collection.find.limit(5)

```
MyFirstDB> db.MyFirstTable.find().limit(2)
[
  {
    _id: ObjectId('687e0cc3ef35f5fe76cb0ce2'),
    name: 'Swathi',
    age: '22',
    gender: 'Female'
  },
  {
    _id: ObjectId('687e0d1fef35f5fe76cb0ce3'),
    name: 'Chundeli',
    age: '21',
    gender: 'Female'
  }
]
MyFirstDB> db.MyFirstTable.find({name: "Swathi"})
[
  {
    _id: ObjectId('687e0cc3ef35f5fe76cb0ce2'),
    name: 'Swathi',
    age: '22',
    gender: 'Female'
  }
]
```

### 3. db.collection.find({key: "value"})

```
MyFirstDB> db.MyFirstTable.find({name: "Swathi"})
[
  {
    _id: ObjectId('687e0cc3ef35f5fe76cb0ce2'),
    name: 'Swathi',
    age: '22',
    gender: 'Female'
  }
]
```

### 4. IN Operator

```
MyFirstDB> db.MyFirstTable.find({age: {$in: ["21","22"]}})
[
  {
    _id: ObjectId('687e0cc3ef35f5fe76cb0ce2'),
    name: 'Swathi',
    age: '22',
    gender: 'Female'
  },
  {
    _id: ObjectId('687e0d1fef35f5fe76cb0ce3'),
    name: 'Chundeli',
    age: '21',
    gender: 'Female'
  }
]
```

### 5. AND Operator

```
MyFirstDB> db.MyFirstTable.find({gender: "Female", age : {$lt : 30}})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce5'),
    name: 'Swathi',
    age: 22,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce6'),
    name: 'Chundeli',
    age: 21,
    gender: 'Female'
  }
]
```

## 6. OR Operator

```
MyFirstDB> db.MyFirstTable.find({$or: [{age: 21}, {gender: "Female"}]})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce5'),
    name: 'Swathi',
    age: 22,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce6'),
    name: 'Chundeli',
    age: 21,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e1270ef35f5fe76cb0ce8'),
    name: 'Bobin',
    age: 21,
    gender: 'Gey'
  }
]
```

## 7. AND with OR Operator

```
MyFirstDB> db.MyFirstTable.find({age: {$lt: 30}, $or: [{gender: {$in: ["Male", "Female", "Bi"]}}, {name: "Bobin"}]})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce5'),
    name: 'Swathi',
    age: 22,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce6'),
    name: 'Chundeli',
    age: 21,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e1270ef35f5fe76cb0ce8'),
    name: 'Bobin',
    age: 21,
    gender: 'Gey'
  }
]
```

8. `db.people.find( {}, { user_id: 1, status: 1 } )`

```
MyFirstDB> db.MyFirstTable.find({}, {name: 1, age: 1})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce5'),
    name: 'Swathi',
    age: 22
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce6'),
    name: 'Chundeli',
    age: 21
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce7'),
    name: 'Bi Unkil',
    age: 74
  },
  { _id: ObjectId('687e1270ef35f5fe76cb0ce8'), name: 'Bobin', age: 21 }
]
```

9. `db.people.find( {}, { user_id: 1, status: 1, _id: 0 } )`

```
MyFirstDB> db.MyFirstTable.find({}, {_id: 0})
[
  { name: 'Swathi', age: 22, gender: 'Female' },
  { name: 'Chundeli', age: 21, gender: 'Female' },
  { name: 'Bi Unkil', age: 74, gender: 'Bi' },
  { name: 'Bobin', age: 21, gender: 'Gey' }
]
```

10. `db.people.find( { status: "A" } )`

```
MyFirstDB> db.MyFirstTable.find({name: /^B.*1$/})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce7'),
    name: 'Bi Unkil',
    age: 74,
    gender: 'Bi'
  }
]
```

11. db.people.find( { status: "A" }, { user\_id: 1, status: 1, \_id: 0 } )

```
MyFirstDB> db.MyFirstTable.find({age: 21},{name: 1, gender: 1, _id: 0})
[
  { name: 'Chundeli', gender: 'Female' },
  { name: 'Bobin', gender: 'Gey' }
]
```

12. db.people.find( { status: { \$ne: "A" } } )

```
MyFirstDB> db.MyFirstTable.find({age: {$ne: 21}})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce5'),
    name: 'Swathi',
    age: 22,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce7'),
    name: 'Bi Unkil',
    age: 74,
    gender: 'Bi'
  }
]
```

13. db.people.find( { status: "A", age: 50 } )

```
MyFirstDB> db.MyFirstTable.find({age: {$gt: 20, $lte: 30}})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce5'),
    name: 'Swathi',
    age: 22,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce6'),
    name: 'Chundeli',
    age: 21,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e1270ef35f5fe76cb0ce8'),
    name: 'Bobin',
    age: 21,
    gender: 'Gey'
  }
]
```

14. db.people.find({age: {\$gt: 25}})

```
MyFirstDB> db.MyFirstTable.find({age: {$gt: 30}})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce7'),
    name: 'Bi Unkil',
    age: 74,
    gender: 'Bi'
  }
]
```

15. db.people.find({age: {\$gt: 25, \$lte: 50}})

```
MyFirstDB> db.MyFirstTable.find({age: {$gt: 20, $lte: 30}})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce5'),
    name: 'Swathi',
    age: 22,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce6'),
    name: 'Chundeli',
    age: 21,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e1270ef35f5fe76cb0ce8'),
    name: 'Bobin',
    age: 21,
    gender: 'Gey'
  }
]
```

16. db.people.find( { user\_id: /bc/ } )

```
MyFirstDB> db.MyFirstTable.find({name: /at/})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce5'),
    name: 'Swathi',
    age: 22,
    gender: 'Female'
  }
]
```

17. db.people.find( { user\_id: /bc\$/ } )

```
MyFirstDB> db.MyFirstTable.find({name: /il$/})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce7'),
    name: 'Bi Unkil',
    age: 74,
    gender: 'Bi'
  }
]
```

18. db.people.find({name: /^C.\*eli\$/})

```
MyFirstDB> db.MyFirstTable.find({name: /^C.*eli$/})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce6'),
    name: 'Chundeli',
    age: 21,
    gender: 'Female'
  }
]
```

19. db.people.find( { status: "A" } ).sort( { user\_id: 1 } )

```
MyFirstDB> db.MyFirstTable.find({age: {$lt: 30}}).sort({age:1})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce6'),
    name: 'Chundeli',
    age: 21,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e1270ef35f5fe76cb0ce8'),
    name: 'Bobin',
    age: 21,
    gender: 'Gey'
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce5'),
    name: 'Swathi',
    age: 22,
    gender: 'Female'
  }
]
```



20. db.people.find( { status: "A" } ).sort( { user\_id: -1 } )

```
MyFirstDB> db.MyFirstTable.find({age: {$gt: 20}}).sort({age: -1})
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce7'),
    name: 'Bi Unkil',
    age: 74,
    gender: 'Bi'
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce5'),
    name: 'Swathi',
    age: 22,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce6'),
    name: 'Chundeli',
    age: 21,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e1270ef35f5fe76cb0ce8'),
    name: 'Bobin',
    age: 21,
    gender: 'Gey'
  }
]
```

21. db.people.find().count()

```
MyFirstDB> db.MyFirstTable.find().count()
4
```

22. db.people.count( { user\_id: { \$exists: true } } )

```
MyFirstDB> db.MyFirstTable.count({age: {$exists: true}})
4
```

23. db.people.find( { age: { \$gt: 30 } } ).count()

```
MyFirstDB> db.MyFirstTable.find({age: {$gt: 21}}).count()
2
```

#### 24. db.people.distinct( "status" )

```
MyFirstDB> db.MyFirstTable.insertOne({name: "Bobin"})
{
  acknowledged: true,
  insertedId: ObjectId('687e1baeef35f5fe76cb0ce9')
}
MyFirstDB> db.MyFirstTable.distinct("name")
[ 'Bi Unkil', 'Bobin', 'Chundeli', 'Swathi' ]
```

#### 25. db.people.findOne()

```
MyFirstDB> db.MyFirstTable.findOne()
{
  _id: ObjectId('687e121fef35f5fe76cb0ce5'),
  name: 'Swathi',
  age: 22,
  gender: 'Female'
}
```

#### 26. db.people.find().limit(3)

```
MyFirstDB> db.MyFirstTable.find().limit(2)
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce5'),
    name: 'Swathi',
    age: 22,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce6'),
    name: 'Chundeli',
    age: 21,
    gender: 'Female'
  }
]
```

#### 27. db.people.find().limit(5).skip(10)

```
MyFirstDB> db.MyFirstTable.find().limit(2).skip(1)
[
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce6'),
    name: 'Chundeli',
    age: 21,
    gender: 'Female'
  },
  {
    _id: ObjectId('687e121fef35f5fe76cb0ce7'),
    name: 'Bi Unkil',
    age: 74,
    gender: 'Bi'
  }
]
```

## 28. db.people.find( { status: "A" } ).explain()

```
MyFirstDB> db.MyFirstTable.find({gender: "Female"}).explain()
{
  explainVersion: '1',
  queryPlanner: {
    namespace: 'MyFirstDB.MyFirstTable',
    parsedQuery: { gender: { '$eq': 'Female' } },
    indexFilterSet: false,
    planCacheShapeHash: '2FC37AE0',
    planCacheKey: '2240FDC0',
    optimizationTimeMillis: 0,
    maxIndexedOrSolutionsReached: false,
    maxIndexedAndSolutionsReached: false,
    maxScansToExplodeReached: false,
    prunedSimilarIndexes: false,
    winningPlan: {
      isCached: false,
      stage: 'COLLSCAN',
      filter: { gender: { '$eq': 'Female' } },
      direction: 'forward'
    },
    rejectedPlans: []
  },
  queryShapeHash: 'AA9F975C060CBFBAB8726C54D36DB8358BFA0AECBE930D23808CBEF2C479EADE',
  command: {
    find: 'MyFirstTable',
    filter: { gender: 'Female' },
    '$db': 'MyFirstDB'
  },
  serverInfo: {
    host: 'LAPTOP-AFAAUBJ2',
    port: 27017,
    version: '8.0.4',
    gitVersion: 'bc35ab4305d9920d9d0491c1c9ef9b72383d31f9'
  },
  serverParameters: {
    internalQueryFacetBufferSizeBytes: 104857600,
    internalQueryFacetMaxOutputDocSizeBytes: 104857600,
    internalLookupStageIntermediateDocumentMaxSizeBytes: 104857600,
    internalDocumentSourceGroupMaxMemoryBytes: 104857600,
    internalQueryMaxBlockingSortMemoryUsageBytes: 104857600,
    internalQueryProhibitBlockingMergeOnMongoS: 0,
    internalQueryMaxAddToSetBytes: 104857600,
    internalDocumentSourceSetWindowFieldsMaxMemoryBytes: 104857600,
    internalQueryFrameworkControl: 'trySbeRestricted',
    internalQueryPlannerIgnoreIndexWithCollationForRegex: 1
  },
  ok: 1
}
```

## Update Operations:

### 1. db.collection.updateOne()

```
MyFirstDB> db.MyFirstTable.updateOne({name: "Bobin"}, {$set: {gender: "Bi"}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
```

### 2. db.people.updateMany( { status: "A" }, { \$inc: { age: 3 } } )

```
MyFirstDB> db.MyFirstTable.updateMany({name: {$exists: true}}, {$inc: {age: 5}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 4,
  modifiedCount: 4,
  upsertedCount: 0
}
```

```
MyFirstDB> db.MyFirstTable.updateMany({name: {$exists: true}}, {$inc: {age: -5}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 4,
  modifiedCount: 4,
  upsertedCount: 0
}
```

## Delete Operations:

### 1. db.collection.deleteOne()

```
MyFirstDB> db.MyFirstTable.deleteOne({$or: [{city: "Pune"}, {city: "Chennai"}]})
{ acknowledged: true, deletedCount: 1 }
```

### 2. db.people.deleteMany( { status: "D" } )

```
MyFirstDB> db.MyFirstTable.deleteMany({city: "Pune"})
{ acknowledged: true, deletedCount: 1 }
```

### 3. db.people.deleteMany({})

```
tempDB> db.tempCollection.deleteMany({})
{ acknowledged: true, deletedCount: 4 }
```