

Day 5 : MongoDB Assignment

Create Database

Query:

```
test> use insuranceDB
```

Output:

```
switched to db insuranceDB
```

Create Collections

Query:

```
insuranceDB> db.createCollection("agents")
```

Output:

```
{ ok: 1 }
```

Query:

```
insuranceDB> show collections
```

Output:

```
agents
claims
customers
policies
policyAssignments
```

Insertion

InsertOne()

Query:

```
insuranceDB> db.agents.insertOne(
... { agentId: 200, agentName: "suman", phone: "9440132609", city: "hyd" }
... )
```

Output:

```
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('6957560010bbb88a911e2621')
  }
}
```

InsertMany()

Query:

```
insuranceDB> db.customers.insertMany([
... { customerId: 10, firstName: "Thanmai", lastName: "Danda", dateOfBirth: "2005-06-01",
phone: "6281332238", email: "thanmai@gmail.com" },
... { customerId: 13, firstName: "Pranay", lastName: "Danda", dateOfBirth: "2007-11-05",
phone: "6489209384", email: "pranay@yahoo.com" },
... { customerId: 16, firstName: "Triveni", lastName: "sripati", dateOfBirth: "2005-04-03", phone:
"7463829209", email: "triveni@gmail.com" },
... { customerId: 19, firstName: "Murali", lastName: "Koppa", dateOfBirth: "2006-12-05",
phone: "8393029337", email: "mur@gmail.com" }
... ])
```

Output:

```
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('6957625310bbb88a911e2629'),
    '1': ObjectId('6957625310bbb88a911e262a'),
    '2': ObjectId('6957625310bbb88a911e262b'),
    '3': ObjectId('6957625310bbb88a911e262c')
  }
}
```

Find

Query:

```
insuranceDB> db.agents.find()
```

Output:

```
[
  {
    _id: ObjectId('6957560010bbb88a911e2621'),
    agentId: 200,
    agentName: 'suman',
    phone: '9440132609',
    city: 'hyd'
  },
  {
    _id: ObjectId('6957560010bbb88a911e2622'),
    agentId: 201,
    agentName: 'amit',
    phone: '9441124719',
    city: 'bng'
  },
]
```

```
{
  _id: ObjectId('6957560010bbb88a911e2623'),
  agentId: 202,
  agentName: 'ram',
  phone: '9441132609',
  city: 'bng'
},
{
  _id: ObjectId('6957560010bbb88a911e2624'),
  agentId: 203,
  agentName: 'syam',
  phone: '6389202918',
  city: 'hyd'
}
]
```

Query:

```
insuranceDB> db.customers.find(
... { customerId: 10 }
... )
```

Output:

```
[
  {
    _id: ObjectId('6957625310bbb88a911e2629'),
    customerId: 10,
    firstName: 'Thanmai',
    lastName: 'Danda',
    dateOfBirth: '2005-06-01',
    phone: '6281332238',
    email: 'thanmai123@example.com'
  }
]
```

Update

UpdateOne()

-\$set

Query:

```
insuranceDB> db.claims.updateOne(  
... { claimId: 153 },  
... { $set: { claimStatus: "yes" } }  
... )
```

Output:

```
{  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 1,  
  modifiedCount: 1,  
  upsertedCount: 0  
}
```

-\$mul

Query:

```
insuranceDB> db.policies.updateOne(  
... { policyId: 101 },  
... { $mul: { premiumAmount: 1.10 } }  
... )
```

Output:

```
{  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 1,  
  modifiedCount: 1,  
  upsertedCount: 0  
}
```

UpdateMany()

-\$inc

Query:

```
insuranceDB> db.agents.updateMany(  
... { city: "bng" },  
... { $inc: { bonus: 1000 } }  
... )
```

Output:

```
{  
  acknowledged: true,
```

```
insertedId: null,  
matchedCount: 2,  
modifiedCount: 2,  
upsertedCount: 0  
}
```

-\$rename

Query:

```
insuranceDB> db.policyAssignments.updateMany(  
... {},  
... { $rename: { "startDstartDate": "startDate" } }  
... )
```

Output:

```
{  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 4,  
  modifiedCount: 0,  
  upsertedCount: 0  
}
```

ReplaceOne()

Query:

```
insuranceDB> db.customers.replaceOne(  
... { customerId: 10 },  
... {  
...   customerId: 10,  
...   firstName: "Thanmai",  
...   lastName: "Danda",  
...   dateOfBirth: "2005-06-01",  
...   phone: "1111111111",  
...   email: "thanmai_new@example.com"  
... }  
... )
```

Output:

```
{  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 1,  
  modifiedCount: 1,  
  upsertedCount: 0  
}
```

Delete

DeleteOne()

Query:

```
insuranceDB> db.policies.deleteOne(  
... { policyId: 101 }  
... )
```

Output:

```
{ acknowledged: true, deletedCount: 1 }
```

DeleteMany()

Query:

```
insuranceDB> db.claims.deleteMany(  
... { assignmentId: 1 }  
... )
```

Output:

```
{ acknowledged: true, deletedCount: 2 }
```

Query Operators

Comparision

-\$gt()

Query:

```
insuranceDB> db.policies.find(  
... { premiumAmount: { $gt: 20000 } }  
... )
```

Output:

```
[  
  {  
    _id: ObjectId('6957624310bbb88a911e2626'),  
    policyId: 102,  
    policyName: 'LIC',  
    policyType: 'personal',  
    premiumAmount: 25000,  
    durationYears: 2  
  },  
  {  
    _id: ObjectId('6957624310bbb88a911e2627'),  
    policyId: 103,  
    policyName: 'Bhima',  
    policyType: 'Health',  
    premiumAmount: 24000,
```

```
    durationYears: 3
  }
]
```

-\$eq()

Query:

```
insuranceDB> db.customers.find(
... { customerId: { $eq: 13 } }
... )
```

Output:

```
[
  {
    _id: ObjectId('6957625310bbb88a911e262a'),
    customerId: 13,
    firstName: 'Pranay',
    lastName: 'Danda',
    dateOfBirth: '2007-11-05',
    phone: '6489209384',
    email: 'pranay@yahoo.com'
  }
]
```

Logical

-\$and

Query:

```
insuranceDB> db.agents.find(
... {
...   $and: [
...     { city: "bng" },
...     { agentName: "ram" }
...   ]
... }
... )
```

Output:

```
[
  {
    _id: ObjectId('6957560010bbb88a911e2623'),
    agentId: 202,
    agentName: 'ram',
    phone: '9441132609',
    city: 'bng',
    bonus: 1000
  }
]
```

```
]
```

-\$or

Query:

```
insuranceDB> db.agents.find(  
... {  
...   $or: [  
...     { agentName: "amit" },  
...     { city: "bng" }  
...   ]  
... }  
... )
```

Output:

```
[  
  {  
    _id: ObjectId('6957560010bbb88a911e2622'),  
    agentId: 201,  
    agentName: 'amit',  
    phone: '9441124719',  
    city: 'bng',  
    bonus: 1000  
  },  
  {  
    _id: ObjectId('6957560010bbb88a911e2623'),  
    agentId: 202,  
    agentName: 'ram',  
    phone: '9441132609',  
    city: 'bng',  
    bonus: 1000  
  }  
]
```

Validation

-\$regex

Query:

```
insuranceDB> db.policyAssignments.find(  
  { startDate: { $regex: /^2010/ } }  
)
```

Output:

```
[  
  {  
    _id: ObjectId('6957626210bbb88a911e2631'),  
    assignmentId: 1,  
  }  
]
```



```

    customerId: 10,
    policyId: 101,
    agentId: 200,
    startDate: '2010-01-01',
    endDate: '2020-01-01'
  },
  {
    _id: ObjectId('6957626210bbb88a911e2634'),
    assignmentId: 4,
    customerId: 10,
    policyId: 103,
    agentId: 200,
    startDate: '2010-03-01',
    endDate: '2026-02-02'
  }
]

```

Aggregate

-\$match

Query:

```

insuranceDB> db.customers.aggregate([
... {
...   $match: { lastName: "Danda" }
... }
... ])

```

Output:

```

[
  {
    _id: ObjectId('6957625310bbb88a911e2629'),
    customerId: 10,
    firstName: 'Thanmai',
    lastName: 'Danda',
    dateOfBirth: '2005-06-01',
    phone: '1111111111',
    email: 'thanmai_new@example.com'
  },
  {
    _id: ObjectId('6957625310bbb88a911e262a'),
    customerId: 13,
    firstName: 'Pranay',
    lastName: 'Danda',
    dateOfBirth: '2007-11-05',
    phone: '6489209384',
  }
]

```

```
    email: 'pranay@yahoo.com'
  }
]
```

-\$group,\$sum

Query:

```
insuranceDB> db.agents.aggregate([
... {
...   $group: {
...     _id: "$city",
...     totalAgents: { $sum: 1 }
...   }
... }
... ])
```

Output:

```
[ { _id: 'hyd', totalAgents: 2 }, { _id: 'bng', totalAgents: 2 } ]
```

-\$project

Query:

```
insuranceDB> db.policies.aggregate([
... {
...   $project: {
...     _id: 0,
...     policyName: 1,
...     premiumAmount: 1
...   }
... }
... ])
```

Output:

```
[
  { policyName: 'LIC', premiumAmount: 25000 },
  { policyName: 'Bhima', premiumAmount: 24000 },
  { policyName: 'Life', premiumAmount: 15000 }
]
```

-\$sort

Query:

```
insuranceDB> db.policyAssignments.aggregate([
... {
...   $sort: { startDate: 1 }
... }
... ])
```

Output:

```
[
  {
    _id: ObjectId('6957626210bbb88a911e2632'),
    assignmentId: 2,
    customerId: 10,
    policyId: 102,
    agentId: 203,
    startDate: '2007-02-01',
    endDate: '2007-05-01'
  },
  {
    _id: ObjectId('6957626210bbb88a911e2633'),
    assignmentId: 3,
    customerId: 13,
    policyId: 101,
    agentId: 202,
    startDate: '2008-03-01',
    endDate: '2009-01-01'
  },
  {
    _id: ObjectId('6957626210bbb88a911e2631'),
    assignmentId: 1,
    customerId: 10,
    policyId: 101,
    agentId: 200,
    startDate: '2010-01-01',
    endDate: '2020-01-01'
  },
  {
    _id: ObjectId('6957626210bbb88a911e2634'),
    assignmentId: 4,
    customerId: 10,
    policyId: 103,
    agentId: 200,
    startDate: '2010-03-01',
    endDate: '2026-02-02'
  }
]
```

-\$group,\$avg

Query:

```
insuranceDB> db.claims.aggregate([
... {
...   $group: {
...     _id: "$claimStatus",
...     avgClaimAmount: { $avg: "$claimAmount" }
...   }
... }
... ])
```

Output:

```
[ { _id: 'yes', avgClaimAmount: 25000 } ]
```

Creation of primary key - Indexing

createIndex()

Query:

```
insuranceDB> db.agents.createIndex({ agentId: 1 }, { unique: true })
```

Output:

```
agentId_1
```

Query:

```
insuranceDB> db.agents.getIndexes()
```

Output:

```
[
  { v: 2, key: { _id: 1 }, name: '_id_' },
  { v: 2, key: { agentId: 1 }, name: 'agentId_1', unique: true }
]
```