

EX.NO.11**SIMPLE AND JOIN QUERIES IN MONGODB****Aim:**

To perform simple queries and join operations using MongoDB.

Procedure:

- INSERT:

Single Record:

```
db.collection_name.insert({key:value,...})
```

Multiple Records:

```
db.collection_name.insertMany([ {key:value,...}, {key:value,...}, {key:value,...} ])
```

```
vehicle> db.employee.insertOne({"Emp_id": 1, "Emp_Name": "Rithi", "Phone_no": 9345542103, "salary": 50000})
{
  acknowledged: true,
  insertedId: ObjectId('661268dcef8f645d016c9b5')
}
vehicle> db.employee.insertMany([{"Emp_id": 2, "emp_name": "Harini", "phone_no": 9003402381, "salary": 48000}, {"Emp_id": 3, "emp_name": "Raji", "Phone_no": 7335201253, "salary": 45000}, {"emp_id": 4, "emp_name": "Nivas", "Phone_no": 8907654321, "salary": 55000}])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('66126e34efc8f645d016c9b6'),
    '1': ObjectId('66126e34efc8f645d016c9b7'),
    '2': ObjectId('66126e34efc8f645d016c9b8')
  }
}
```

- FIND: (Select in SQL):

```
vehicle> db.employee.find({}, {"Emp_id": 1})
[
  { _id: ObjectId('66127395efc8f645d016c9b9'), Emp_id: 1 },
  { _id: ObjectId('6612740befc8f645d016c9ba'), Emp_id: 2 },
  { _id: ObjectId('6612740befc8f645d016c9bb'), Emp_id: 3 },
  { _id: ObjectId('6612740befc8f645d016c9bc'), Emp_id: 4 }
]
```

```
vehicle> db.employee.find({})
[
  {
    _id: ObjectId('661268dcef8f645d016c9b5'),
    Emp_id: 1,
    Emp_Name: 'Rithi',
    Phone_no: 9345542103,
    salary: 50000
  },
  {
    _id: ObjectId('66126e34efc8f645d016c9b6'),
    Emp_id: 2,
    emp_name: 'Harini',
    phone_no: 9003402381,
    salary: 48000
  },
  {
    _id: ObjectId('66126e34efc8f645d016c9b7'),
    Emp_id: 3,
    emp_name: 'Raji',
    Phone_no: 7335201253,
    salary: 45000
  },
  {
    _id: ObjectId('66126e34efc8f645d016c9b8'),
    emp_id: 4,
    emp_name: 'Nivas',
    Phone_no: 8907654321,
    salary: 55000
  }
]
```

```
[
  {
    _id: ObjectId('66126e34efc8f645d016c9b7'),
    Emp_id: 3,
    emp_name: 'Raji',
    Phone_no: 7335201253,
    salary: 45000
  },
  {
    _id: ObjectId('66126e34efc8f645d016c9b8'),
    emp_id: 4,
    emp_name: 'Nivas',
    Phone_no: 8907654321,
    salary: 55000
  }
]
```

- Update:

Single record: db.collection_name.update({"Identifier":value},{ \$set: {"updating coloumn":value}}) --updateOne:

```
vehicle> db.employee.updateOne( { "Emp_id": 1 }, { $set: { "salary": 65000 } } )
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
```

Multiple records: db.collection_name.updateMany({"identifier":val},{ \$set: {"updating coloumn":val}}) ---updateMany

```
vehicle> db.employee.updateMany( { "Emp_id": { $gt: 2 } }, { $set: { "salary": 75000 } } )
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 2,
  modifiedCount: 0,
  upsertedCount: 0
}
```

- Count: db.collection_name.count()

```
vehicle> db.employee.count()
DeprecationWarning: Collection.count() is deprecated. Use countDocuments or estimatedDocumentCount.
4
vehicle> db.employee.countDocuments()
4
```

- SORT:

Ascending: db.collection_name.find().sort({key:1})

```
vehicle> db.employee.find().sort({"salary":1})
[
  {
    _id: ObjectId('6612799befc8f645d016c9c7'),
    Emp_id: 3,
    Emp_name: 'Raji',
    Phone_no: 7335201253,
    salary: 45000,
    dept_id: 1
  },
  {
    _id: ObjectId('661282fbefc8f645d016c9ca'),
    Emp_id: 2,
    Emp_name: 'Harini',
    Phone_no: 9003402381,
    salary: 45000
  },
  {
    _id: ObjectId('66128339efc8f645d016c9cb'),
    Emp_id: 1,
    Emp_name: 'Rithi',
    Phone_no: 9345542103,
    salary: 50000
  },
  {
    _id: ObjectId('6612799befc8f645d016c9c8'),
    Emp_id: 4,
    Emp_name: 'Niva',
    Phone_no: 8901234567,
    salary: 60000,
    dept_id: 4
  }
]
```

Descending: db.collection_name.find().sort({key:-1})

```
vehicle> db.employee.find().sort({"salary":-1})
[
  {
    _id: ObjectId('6612799befc8f645d016c9c8'),
    Emp_id: 4,
    Emp_name: 'Niva',
    Phone_no: 8901234567,
    salary: 60000,
    dept_id: 4
  },
  {
    _id: ObjectId('66128339efc8f645d016c9cb'),
    Emp_id: 1,
    Emp_name: 'Rithi',
    Phone_no: 9345542103,
    salary: 50000
  },
  {
    _id: ObjectId('6612799befc8f645d016c9c7'),
    Emp_id: 3,
    Emp_name: 'Raji',
    Phone_no: 7335201253,
    salary: 45000,
    dept_id: 1
  },
  {
    _id: ObjectId('661282fbefc8f645d016c9ca'),
    Emp_id: 2,
    Emp_name: 'Harini',
    Phone_no: 9003402381,
    salary: 45000
  }
]
```

```
vehicle> db.employee.find({}, {"Emp_name":1, _id:0}).sort({"Emp_name":-1})
[
  { Emp_name: 'Rithi' },
  { Emp_name: 'Raji' },
  { Emp_name: 'Niva' },
  { Emp_name: 'Harini' }
]
```

- DELETE:

Single Record: `db.collection_name.remove({"key":value})`

```
vehicle> db.employee.remove({"Emp_id":2})
DeprecationWarning: Collection.remove() is deprecated. Use deleteOne, deleteMany, findOneAndDelete, or bulkWrite.
{ acknowledged: true, deletedCount: 2 }
```

Multiple Records: `db.collection_name.deleteMany({"key":value})`

```
vehicle> db.employee.deleteMany({"salary":75000})
{ acknowledged: true, deletedCount: 2 }
```

- JOIN: `db.collection_name.aggregation([`
 `{`
 `$lookup: { {`
 `from: , localField: ,`
 `foreignField: ,`
 `as: } }`
 `}`

```
vehicle> db.department.find({})
[
  {
    _id: ObjectId('6612797eefc8f645d016c9c1'),
    dept_id: 1,
    dept_name: 'IT'
  },
  {
    _id: ObjectId('6612797eefc8f645d016c9c2'),
    dept_id: 2,
    'dept-name': 'Cse'
  },
  {
    _id: ObjectId('6612797eefc8f645d016c9c3'),
    dept_id: 3,
    dept_name: 'ece'
  },
  {
    _id: ObjectId('6612797eefc8f645d016c9c4'),
    dept_id: 4,
    dept_name: 'eee'
  }
]
```

```
vehicle> db.employee.find({})
[
  {
    _id: ObjectId('66127395efc8f645d016c9b9'),
    Emp_id: 1,
    Emp_Name: 'Rithi',
    Phone_no: 9345542103,
    salary: 65000,
    dept_id: 2
  },
  {
    _id: ObjectId('6612740befc8f645d016c9ba'),
    Emp_id: 2,
    Emp_name: 'Harini',
    Phone_no: 9003402381,
    salary: 48000,
    dept_id: 3
  },
  {
    _id: ObjectId('6612740befc8f645d016c9bb'),
    Emp_id: 3,
    Emp_name: 'Raji',
    Phone_no: 7335201253,
    salary: 75000,
    dept_id: 1
  },
  {
    _id: ObjectId('6612740befc8f645d016c9bc'),
    Emp_id: 4,
    Emp_name: 'Niva',
    Phone_no: 8901234567,
    salary: 75000,
    dept_id: 4
  }
]
```

```
vehicle> db.employee.aggregate([ { $lookup: { from: "department", localField: "dept_id", foreignField: "dept_id", as: "department_info" } } ] )
```

```
[
  {
    _id: ObjectId('66127395efc8f645d016c9b9'),
    Emp_id: 1,
    Emp_Name: 'Rithi',
    Phone_no: 9345542103,
    salary: 65000,
    dept_id: 2,
    department_info: [
      {
        _id: ObjectId('6612797eefc8f645d016c9c2'),
        dept_id: 2,
        'dept-name': 'Cse'
      }
    ]
  },
  {
    _id: ObjectId('6612740befc8f645d016c9ba'),
    Emp_id: 2,
    Emp_name: 'Harini',
    Phone_no: 9003402381,
    salary: 48000,
    dept_id: 3,
    department_info: [
      {
        _id: ObjectId('6612797eefc8f645d016c9c3'),
        dept_id: 3,
        dept_name: 'ece'
      }
    ]
  },
  {
    _id: ObjectId('6612740befc8f645d016c9bb'),
    Emp_id: 3,
    Emp_name: 'Raji',
    Phone_no: 7335201253,
    salary: 75000,
    dept_id: 1,
    department_info: [
      {
        _id: ObjectId('6612797eefc8f645d016c9c1'),
        dept_id: 1,
        dept_name: 'IT'
      }
    ]
  },
  {
    _id: ObjectId('6612740befc8f645d016c9bc'),
    Emp_id: 4,
    Emp_name: 'Niva',
    Phone_no: 8901234567,
    salary: 75000,
    dept_id: 4,
    department_info: [
      {
        _id: ObjectId('6612797eefc8f645d016c9c4'),
        dept_id: 4,
        dept_name: 'eee'
      }
    ]
  }
]
```

Result: Thus, simple queries are executed and join operations are performed successfully.