# Basic MongoDB Commands

### show databases

Show All Databases-Displays all existing databases.

### use unidb

Switch to a Database-If unidb exists, it switches to it. If not, MongoDB creates it when you insert data.

### Show Collections

Lists all collections (like tables) in the current database.

## MongoDB Compass Commands (GUI)

| Command | Meaning |
|---|---|
| { age: { "$gt": 25 } } | Finds people older than 25. |
| { age: { "$lt": 25 } } | Finds people younger than 25. |
| { age: 25 } | Finds people whose age is 25. |
| { name: 1 } | Shows only name (with _id). |
| { name: 1, _id: 0 } | Shows name, hides _id field. |
| { skills: { "$in": ["NoSql"] } } | Finds if skills include "NoSql". |
| { skills: { "$in": ["NoSql", "JS"] } } | Finds if skills have either value. |
| { skills: { "$nin": ["NoSql"] } } | Finds if skills do not include "NoSql". |
| { gender: "female" } | Finds documents where gender is female. |
| { age: 1 } | Sorts by age ascending. |
| { age: -1 } | Sorts by age descending. |

## MongoDB Console (mongosh) Commands

These are typed in the terminal or shell.

| Command | Meaning |
|---|---|
| db.students.insertMany([...]) | Adds multiple documents. |
| db.students.find() | Shows all documents. |
| db.students.findOne() | Shows one document. |
| db.students.find({ regno: "2021ict126" }) | Finds document where regno matches. |
| db.students.find({}, { name: 1 }) | Show only the name field. |
| db. students .find({}, { name: 1, _id: 0 }) | Show name only, hide _id. |
| db. students. find().sort({ age: 1 }) | Sorts documents by age ascending. |
| db.students.find().sort({ age: -1 }) | Sorts documents by age descending. |
| db.students.find({ age: { "$gt": 25 } }) | Finds people with age greater than 25. |
| db.students.find({ age: { "$lt": 25 } }) | Finds people with age less than 25. |
| db.students.find({ age: 25 }) | Finds people with age equal to 25. |
| db.students.find({ skills: { "$in": ["NoSql"] } }) | Finds those with "NoSql" in skills. |
| db.students.find({ skills: { "$nin": ["NoSql"] } }) | Finds those without "NoSql" skill. |
| db.students.find({ degree: "CSC", gender: "male" }).sort({ age: -1 }) | Find CSC male students, sort by age descending. |

# Create a database and collection

## Create Database    ✖

**Database Name**

```
unidb
```

**Collection Name**

```
students
```

☐ **Time-Series**

    Time-series collections efficiently store sequences of measurements over a period of time. Learn More ⧉

❯ **Additional preferences** (e.g. Custom collation, Clustered collections)

Cancel    **Create Database**

## Show databases

```
>_MONGOSH                                                          ⓘ
> show databases
< StudentDB   72.00 KiB
  admin       40.00 KiB
  config     108.00 KiB
  local       72.00 KiB
  unidb        8.00 KiB
test >
```

## use unidb

```
> use unidb
< switched to db unidb
unidb >
```

## show collections

```
> show collections
< students
unidb >
```

## Insert document-Using Compass

## Insert Document

To collection unidb.students

VIEW {} ≡

```
1    /**
2     * Paste one or more documents here
3     */
4  ▾ {
5        "regno": "2021ict126",
6        "name": "Shahla",
7        "age": 25,
8        "degree": "IT",
9        "gpa": 3.7,
10       "skills": ["JS", "MathLab", "NoSql"]
11   }
```

Cancel     Insert

**Insert document-Using Console -------> "insertOne"**

```
> db.students.insertOne(
  {
  "regno": "2021ict001",
    "name": "Bandara",
    "age": 26,
    "degree": "CSC",
    "gpa": 3.1,
    "skills": [
      "JS",
      "MathLab",
      "NoSql"
    ],
    "gender": "male"


  }
  )
< {
    acknowledged: true,
    insertedId: ObjectId('680bbd7541e98ef3f45b1203')
  }
```

**Insert document-Using Console -------> "insertMany"**

```
> db.students.insertMany(
  [

    {
    "regno": "2021ict002",
      "name": "Shashi",
      "age": 23,
      "degree": "CSC",
      "gpa": 2.8,
      "skills": [
        "JS",
        "MathLab",

      ],
      "gender": "female"
    },

    {
    "regno": "2021ict003",
      "name": "Raween",
      "age": 20,
      "degree": "CSC",
      "gpa": 3.9,
      "skills": [
        "JS",
        "MathLab",
        "NoSql"
      ],
      "gender": "male"


    }

  ]
  )
< {
    acknowledged: true,
    insertedIds: {
      '0': ObjectId('680bbdd641e98ef3f45b1204'),
      '1': ObjectId('680bbdd641e98ef3f45b1205')
    }
  }
```

## Display all documents - Click the button find

Open MongoDB shell

Documents 1    Aggregations    Schema    Indexes 1    Validation

Type a query: { field: 'value' } or Generate query ✦    Explain   Reset   Find   </>   Options ▾

**Project**    { field: 0 }

**Sort**    { field: -1 } or [['field', -1]]      **Max Time MS**   60000

**Collation**    { locale: 'simple' }      **Skip** 0    **Limit** 0

**Index Hint**    { field: -1 }

⊕ ADD DATA ▾   ✎ EXPORT DATA ▾   ✎ UPDATE   🗑 DELETE     25 ▾   1 – 4 of 4   ⟳   ‹ › ▾   ☰ {} ⊞

```
_id: ObjectId('680bbbacb2334dba91ceaa39')
regno : "2021ict126"
name : "Shahla"
age : 25
degree : "IT"
gpa : 3.7
▸ skills : Array (3)
```

```
_id: ObjectId('680bbd7541e98ef3f45b1203')
regno : "2021ict001"
name : "Bandara"
age : 26
degree : "CSC"
gpa : 3.1
▸ skills : Array (3)
gender : "male"
```

```
_id: ObjectId('680bbdd641e98ef3f45b1204')
regno : "2021ict002"
name : "Shashi"
age : 23
degree : "CSC"
gpa : 2.8
▸ skills : Array (2)
gender : "female"
```

```
_id: ObjectId('680bbdd641e98ef3f45b1205')
regno : "2021ict003"
name : "Raween"
age : 20
degree : "CSC"
gpa : 3.9
▸ skills : Array (3)
gender : "male"
```

## Retrieve specific fields only

# 1.Shows  name,age (with _id

| ⏱ ▾ | Type a query: { field: 'value' } or **Generate query** ✦ |  |  | Explain | Reset | Find | </> | Options ▾ |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

**Project** `{name:1,age:1}`

**Sort** `{ field: -1 } or [['field', -1]]`     **Max Time MS** `60000`

**Collation** `{ locale: 'simple' }`     **Skip** `0`     **Limit** `0`

**Index Hint** `{ field: -1 }`

⬆ EXPORT DATA ▾                                      25 ▾   1 – 4 of 4  ↻  ‹  ›  ▾  ☰ {} ⊞

▸   **_id**: ObjectId('680bbbacb2334dba91ceaa39')
    **name** : "Shahla"
    **age** : 25

    **_id**: ObjectId('680bbd7541e98ef3f45b1203')
    **name** : "Bandara"
    **age** : 26

    **_id**: ObjectId('680bbdd641e98ef3f45b1204')
    **name** : "Shashi"
    **age** : 23

    **_id**: ObjectId('680bbdd641e98ef3f45b1205')
    **name** : "Raween"
    **age** : 20

# 2.Shows name,age  hides _id field.

localhost:27017 › **unidb** › **students**                    >_ **Open MongoDB shell**

**Documents** 1    Aggregations    Schema    Indexes 1    Validation

| ⏱ ▾ | Type a query: { field: 'value' } or **Generate query** ✦ |  | Explain | Reset | Find | </> | Options ▾ |
| --- | --- | --- | --- | --- | --- | --- | --- |

**Project** `{name:1,age:1,_id:0}`

**Sort** `{ field: -1 } or [['field', -1]]`     **Max Time MS** `60000`

**Collation** `{ locale: 'simple' }`     **Skip** `0`     **Limit** `0`

**Index Hint** `{ field: -1 }`

⬆ EXPORT DATA ▾                                      25 ▾   1 – 4 of 4  ↻  ‹  ›  ▾  ☰ {} ⊞

    **name** : "Shahla"
    **age** : 25

▸   **name** : "Bandara"
    **age** : 26

    **name** : "Shashi"
    **age** : 23

    **name** : "Raween"
    **age** : 20

# Retrieve documents  using specific value

## 1.Shows documents which regno "2021ict126" .

localhost:27017 > unidb > students

Open MongoDB shell

Documents 1    Aggregations    Schema    Indexes 1    Validation

🕐 ▾    { regno: "2021ict126" }    Generate query +    Explain    Reset    Find    </>    Options ▾

Project    {}

Sort    { field: -1 } or [['field', -1]]    Max Time MS    60000

Collation    { locale: 'simple' }    Skip    0    Limit    0

Index Hint    { field: -1 }

⊕ ADD DATA ▾    ☰ EXPORT DATA ▾    ✎ UPDATE    🗑 DELETE    💡 INSIGHT    25 ▾    1–1of1    ⟳    ‹  ›    ▾    ☰    {}    ⊞

```
_id: ObjectId('680bbbacb2334dba91ceaa39')
regno : "2021ict126"
name : "Shahla"
age : 25
degree : "IT"
gpa : 3.7
▸ skills : Array (3)
```

## 2.Shows documents those are female.

localhost:27017 > unidb > students

[> Open MongoDB shell]

Documents 1    Aggregations    Schema    Indexes 1    Validation

🕐 ▾    `{ gender: "female" }`      Generate query ✦   [Explain]   [Reset]   [Find]   [</>]   Options ▾

**Project**    `{ field: 0 }`

**Sort**    `{ field: -1 } or [['field', -1]]`        **Max Time MS**   `60000`

**Collation**    `{ locale: 'simple' }`      **Skip** `0`    **Limit** `0`

**Index Hint**    `{ field: -1 }`

[⊕ ADD DATA ▾]   [🖉 EXPORT DATA ▾]   [✏ UPDATE]   [🗑 DELETE]   [💡 INSIGHT]       25 ▾   1–1 of 1   ⟳   ‹ ›   ▾   ☰ {} ⊞

```
_id: ObjectId('680bbdd641e98ef3f45b1204')
regno : "2021ict002"
name : "Shashi"
age : 23
degree : "CSC"
gpa : 2.8
▸ skills : Array (2)
gender : "female"
```

## Retrieve documents  using specific value------>    using console

## 1.Shows documents those are male

```
>_MONGOSH                                                                    ⓘ
> db.students.find({"gender":"male"})
< {
    _id: ObjectId('680bbd7541e98ef3f45b1203'),
    regno: '2021ict001',
    name: 'Bandara',
    age: 26,
    degree: 'CSC',
    gpa: 3.1,
    skills: [
      'JS',
      'MathLab',
      'NoSql'
    ],
    gender: 'male'
  }
  {
    _id: ObjectId('680bbdd641e98ef3f45b1205'),
    regno: '2021ict003',
    name: 'Raween',
    age: 20,
    degree: 'CSC',
    gpa: 3.9,
    skills: [
      'JS',
      'MathLab',
      'NoSql'
    ],
    gender: 'male'
```

## 2.Shows documents those are male--------> "findOne"

```
> db.students.findOne({"gender":"male"})
< {
    _id: ObjectId('680bbd7541e98ef3f45b1203'),
    regno: '2021ict001',
    name: 'Bandara',
    age: 26,
    degree: 'CSC',
    gpa: 3.1,
    skills: [
      'JS',
      'MathLab',
      'NoSql'
    ],
    gender: 'male'
  }
```

# Sort in ascending Order

Open MongoDB shell

Documents 1    Aggregations    Schema    Indexes 1    Validation

Type a query: { field: 'value' } or **Generate query** ✦

Explain    Reset    Find    </>    Options ▾

**Project**    { field: 0 }

**Sort**    {age:1}                                                    Max Time MS    60000

**Collation**    {}                              Skip    0              Limit    0

**Index Hint**    { field: -1 }

⊕ ADD DATA ▾    ⬆ EXPORT DATA ▾    ✎ UPDATE    🗑 DELETE    💡 INSIGHT          25 ▾    1 – 4 of 4    ↻    ‹    ›    ▾    ☰ {} ⊞

```
    _id: ObjectId('680bbdd641e98ef3f45b1205')
    regno : "2021ict003"
    name : "Raween"
    age : 20
    degree : "CSC"
    gpa : 3.9
  ▸ skills : Array (3)
    gender : "male"
```

```
▶    _id: ObjectId('680bbdd641e98ef3f45b1204')                    ✎  ⧉  ⎘  🗑
    regno : "2021ict002"
    name : "Shashi"
    age : 23
    degree : "CSC"
    gpa : 2.8
  ▸ skills : Array (2)
    gender : "female"
```

```
    _id: ObjectId('680bbbacb2334dba91ceaa39')
    regno : "2021ict126"
    name : "Shahla"
    age : 25
    degree : "IT"
    gpa : 3.7
  ▸ skills : Array (3)
```

```
    _id: ObjectId('680bbd7541e98ef3f45b1203')
    regno : "2021ict001"
    name : "Bandara"
    age : 26
    degree : "CSC"
    gpa : 3.1
  ▸ skills : Array (3)
    gender : "male"
```

## Sort in descending order

>_ Open MongoDB shell

Documents **1**    Aggregations    Schema    Indexes **1**    Validation

🕐 ▾    Type a query: { field: 'value' } or **Generate query** ✦⁺    Explain    Reset    Find    </>    Options ▾

**Project**    { field: 0 }

**Sort**    {gpa:-1}    **Max Time MS** 60000

**Collation**    {}    **Skip** 0    **Limit** 0

**Index Hint**    { field: -1 }

⊕ ADD DATA ▾    ⬈ EXPORT DATA ▾    ✎ UPDATE    🗑 DELETE    💡 INSIGHT    25 ▾    1–4 of 4    ↻    ‹ ›    ▾    ≡    { }    ⊞

▶    _id: ObjectId('680bbdd641e98ef3f45b1205')
      regno : "2021ict003"
      name : "Raween"
      age : 20
      degree : "CSC"
      gpa : 3.9
    ▸ skills : Array (3)
      gender : "male"

      _id: ObjectId('680bbbacb2334dba91ceaa39')
      regno : "2021ict126"
      name : "Shahla"
      age : 25
      degree : "IT"
      gpa : 3.7
    ▸ skills : Array (3)

## Find the documents with comparision

## 1.Finds people with age greater than 25

>_ Open MongoDB shell

Documents **1**    Aggregations    Schema    Indexes **1**    Validation

🕐 ▾    {"age":{"$gt":25}}    **Generate query** ✦⁺    Explain    Reset    Find    </>    Options ▾

**Project**    { field: 0 }

**Sort**    {}    **Max Time MS** 60000

**Collation**    {}    **Skip** 0    **Limit** 0

**Index Hint**    { field: -1 }

⊕ ADD DATA ▾    ⬈ EXPORT DATA ▾    ✎ UPDATE    🗑 DELETE    💡 INSIGHT    25 ▾    1–1 of 1    ↻    ‹ ›    ▾    ≡    { }    ⊞

      _id: ObjectId('680bbd7541e98ef3f45b1203')
      regno : "2021ict001"
      name : "Bandara"
      age : 26
      degree : "CSC"
      gpa : 3.1
    ▸ skills : Array (3)
      gender : "male"

## 2.Finds people with age less than 25.

Documents 1    Aggregations    Schema    Indexes 1    Validation

{"age":{"$lt":25}}

Generate query    Explain    Reset    Find    Options ▾

Project    { field: 0 }

Sort    {}    Max Time MS    60000

Collation    {}    Skip    0    Limit    0

Index Hint    { field: -1 }

⊕ ADD DATA ▾    EXPORT DATA ▾    ✎ UPDATE    🗑 DELETE    💡 INSIGHT    25 ▾    1-2 of 2

```
_id: ObjectId('680bbdd641e98ef3f45b1204')
    regno : "2021ict002"
    name : "Shashi"
    age : 23
    degree : "CSC"
    gpa : 2.8
  ▸ skills : Array (2)
    gender : "female"
```

```
_id: ObjectId('680bbdd641e98ef3f45b1205')
    regno : "2021ict003"
    name : "Raween"
    age : 20
    degree : "CSC"
    gpa : 3.9
  ▸ skills : Array (3)
    gender : "male"
```

## 3.Finds people with age equal to 25.

Open MongoDB shell

Documents 1    Aggregations    Schema    Indexes 1    Validation

{"age":{"$eq":25}}    Generate query ✦    Explain    Reset    Find    </>    Options ▾

Project    { field: 0 }

Sort    {}                                    Max Time MS    60000

Collation    {}                        Skip    0        Limit    0

Index Hint    { field: -1 }

⊕ ADD DATA ▾    ⧉ EXPORT DATA ▾    ✎ UPDATE    🗑 DELETE    💡 INSIGHT        25 ▾    1-1 of 1    ⟳    ‹    ›    ▾    ☰    {}    ⊞

▶    _id: ObjectId('680bbbacb2334dba91ceaa39')    ✎ ⧉ ⧉ 🗑
        regno : "2021ict126"
        name : "Shahla"
        age : 25
        degree : "IT"
        gpa : 3.7
    ▸ skills : Array (3)

**Find  the  documents  using $in,$nin**

**1.Finds those with "NoSql" skills.**

Open MongoDB shell

Documents 1    Aggregations    Schema    Indexes 1    Validation

🕐 ▾    {skills:"NoSql"}    Generate query ✦    Explain    Reset    Find    </>    Options ▾

Project    { field: 0 }

Sort    {}    Max Time MS    60000

Collation    {}    Skip    0    Limit    0

Index Hint    { field: -1 }

⊕ ADD DATA ▾    📤 EXPORT DATA ▾    ✏ UPDATE    🗑 DELETE    💡 INSIGHT    25 ▾    1 – 3 of 3    ↻    ‹ ›    ▾    ☰ {} ⊞

```
_id: ObjectId('680bbbacb2334dba91ceaa39')
regno : "2021ict126"
name : "Shahla"
age : 25
degree : "IT"
gpa : 3.7
▾ skills : Array (3)
    0: "JS"
    1: "MathLab"
    2: "NoSql"
```

```
_id: ObjectId('680bbd7541e98ef3f45b1203')
regno : "2021ict001"
name : "Bandara"
age : 26
degree : "CSC"
gpa : 3.1
▾ skills : Array (3)
    0: "JS"
    1: "MathLab"
```

```
    2: "NoSql"
gender : "male"
```

```
_id: ObjectId('680bbdd641e98ef3f45b1205')
regno : "2021ict003"
name : "Raween"
age : 20
degree : "CSC"
gpa : 3.9
▸ skills : Array (3)
gender : "male"
```

## 2.Finds those with "NoSql" OR JS  skills.

Open MongoDB shell

Documents 1    Aggregations    Schema    Indexes 1    Validation

```
{skills:{$in:["NoSql","JS"]}}
```

Generate query    Explain    Reset    Find    Options ▾

Project    { field: 0 }

Sort    {}                                                    Max Time MS    60000

Collation    {}                              Skip    0         Limit    0

Index Hint    { field: -1 }

⊕ ADD DATA ▾   ⌐ EXPORT DATA ▾   ✎ UPDATE   🗑 DELETE   💡 INSIGHT        25 ▾   1 – 4 of 4

```
_id: ObjectId('680bbbacb2334dba91ceaa39')
  regno : "2021ict126"
  name : "Shahla"
  age : 25
  degree : "IT"
  gpa : 3.7
▾ skills : Array (3)
      0: "JS"
      1: "MathLab"
      2: "NoSql"
```

```
_id: ObjectId('680bbd7541e98ef3f45b1203')
  regno : "2021ict001"
  name : "Bandara"
  age : 26
  degree : "CSC"
  gpa : 3.1
▾ skills : Array (3)
      0: "JS"
      1: "MathLab"
      2: "NoSql"
```

```
_id: ObjectId('680bbdd641e98ef3f45b1204')
  regno : "2021ict002"
  name : "Shashi"
  age : 23
  degree : "CSC"
  gpa : 2.8
▸ skills : Array (2)
  gender : "female"
```

```
_id: ObjectId('680bbdd641e98ef3f45b1205')
  regno : "2021ict003"
  name : "Raween"
  age : 20
  degree : "CSC"
  gpa : 3.9
▸ skills : Array (3)
  gender : "male"
```

## 3.Finds those without "NoSql" skill.

localhost:27017 > unidb > students

`> Open MongoDB shell`

Documents **1**     Aggregations     Schema     Indexes **1**     Validation

🕐 ▾     `{skills:{$nin:["NoSql"]}}`     Generate query ✦     Explain     Reset     Find     </>     Options ▾

**Project**     `{ field: 0 }`

**Sort**     `{}`     **Max Time MS**     `60000`

**Collation**     `{}`     **Skip** `0`     **Limit** `0`

**Index Hint**     `{ field: -1 }`

⊕ ADD DATA ▾     ⬈ EXPORT DATA ▾     ✎ UPDATE     🗑 DELETE     💡 INSIGHT          25 ▾  1-1of1  ⟳   ‹ ›   ▾   ☰ {} ⊞

```
▶  _id: ObjectId('680bbdd641e98ef3f45b1204')
       regno : "2021ict002"
       name : "Shashi"
       age : 23
       degree : "CSC"
       gpa : 2.8
   ▸ skills : Array (2)
       gender : "female"
```

## Sort in descending Order ----->using console

```
>_MONGOSH                                                              ⓘ
> db.students.find().sort({"gpa":-1})
< {
      _id: ObjectId('680bbdd641e98ef3f45b1205'),
      regno: '2021ict003',
      name: 'Raween',
      age: 20,
      degree: 'CSC',
      gpa: 3.9,
      skills: [
        'JS',
        'MathLab',
        'NoSql'
      ],
      gender: 'male'
  }
  {
      _id: ObjectId('680bbbacb2334dba91ceaa39'),
      regno: '2021ict126',
      name: 'Shahla',
      age: 25,
      degree: 'IT',
      gpa: 3.7,
      skills: [
        'JS',
        'MathLab',
        'NoSql'
      ]
  }
  {
```

```
{
  _id: ObjectId('680bbd7541e98ef3f45b1203'),
  regno: '2021ict001',
  name: 'Bandara',
  age: 26,
  degree: 'CSC',
  gpa: 3.1,
  skills: [
    'JS',
    'MathLab',
    'NoSql'
  ],
  gender: 'male'
}
{
  _id: ObjectId('680bbdd641e98ef3f45b1204'),
  regno: '2021ict002',
  name: 'Shashi',
  age: 23,
  degree: 'CSC',
  gpa: 2.8,
  skills: [
    'JS',
    'MathLab'
  ],
  gender: 'female'
}
```

## Find who follow csc dgree,sort their gpa in ascending order

```
>_MONGOSH
> db.students.find({ "degree": "CSC" }).sort({ "gpa": 1 })
< {
    _id: ObjectId('680bbdd641e98ef3f45b1204'),
    regno: '2021ict002',
    name: 'Shashi',
    age: 23,
    degree: 'CSC',
    gpa: 2.8,
    skills: [
      'JS',
      'MathLab'
    ],
    gender: 'female'
  }
  {
    _id: ObjectId('680bbd7541e98ef3f45b1203'),
    regno: '2021ict001',
    name: 'Bandara',
    age: 26,
    degree: 'CSC',
    gpa: 3.1,
    skills: [
      'JS',
      'MathLab',
      'NoSql'
    ],
    gender: 'male'
  }
  {
```

## Find CSC male students, sort their age in descending.

```
>_MONGOSH
> db.students.find({"degree":"CSC","gender":"male"}).sort({"age":-1})
< {
    _id: ObjectId('680bbd7541e98ef3f45b1203'),
    regno: '2021ict001',
    name: 'Bandara',
    age: 26,
    degree: 'CSC',
    gpa: 3.1,
    skills: [
      'JS',
      'MathLab',
      'NoSql'
    ],
    gender: 'male'
  }
  {
    _id: ObjectId('680bbdd641e98ef3f45b1205'),
    regno: '2021ict003',
    name: 'Raween',
    age: 20,
    degree: 'CSC',
    gpa: 3.9,
    skills: [
      'JS',
      'MathLab',
      'NoSql'
    ],
    gender: 'male'
  }
```

## Find the details with comparision---->using console

```
> db.students.find({"age":{"$gt":25}})
< {
    _id: ObjectId('680bbd7541e98ef3f45b1203'),
    regno: '2021ict001',
    name: 'Bandara',
    age: 26,
    degree: 'CSC',
    gpa: 3.1,
    skills: [
      'JS',
      'MathLab',
      'NoSql'
    ],
    gender: 'male'
  }
```