

# MongoDB

DB Creation | Collections | CRUD | Queries

## Key Terms

Database → Holds collections

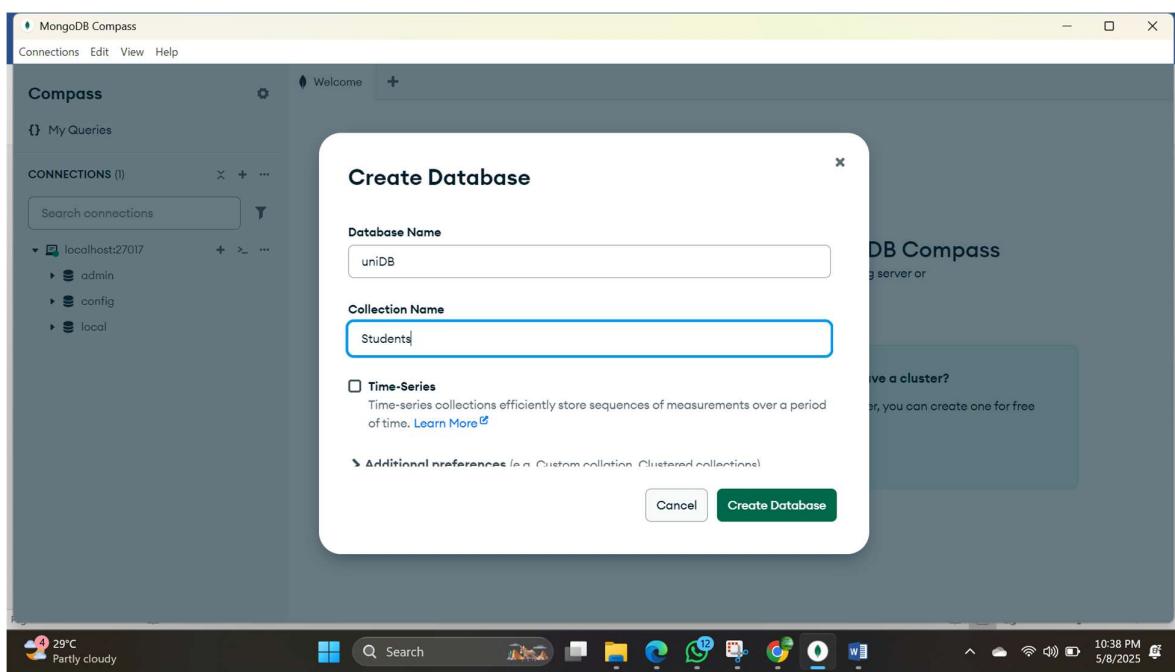
Collection → like a table (stores documents)

Document → BSON-style object

(K) \_id → Auto-generated, unique identifier

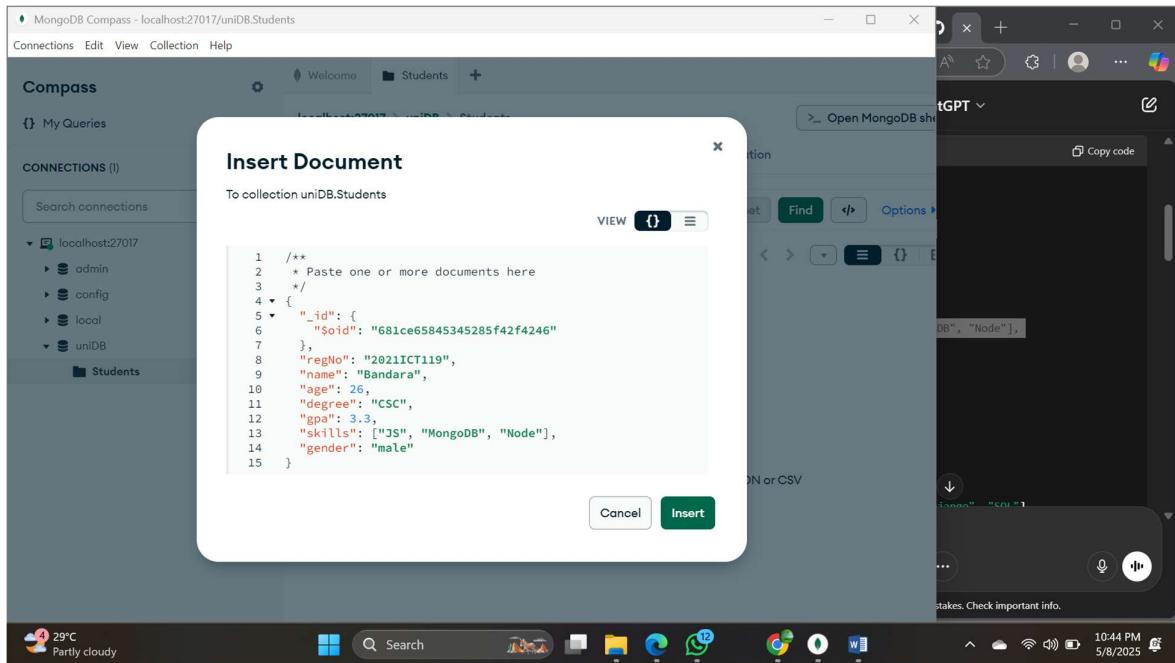
## Create a Database & Collection Using Compass

Create Database -> Database Name -> Collection Name -> Create Database



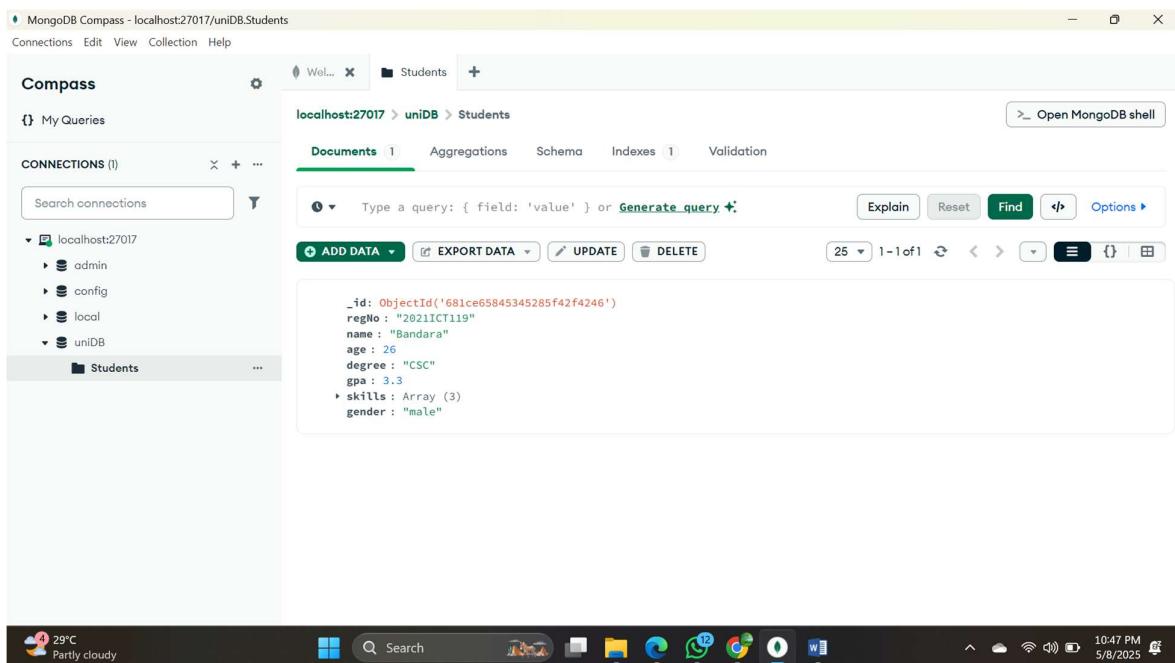
## Insert Documents Using Compass

Insert Document -> insert keys and values.



Use format button to make the document permitted.

Inserted Document.



## Edit Documents Using Compass

Edit -> Make changes -> Update

MongoDB Compass - localhost:27017/uniDB.Students

Connections Edit View Collection Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017

- admin
- config
- local
- uniDB

Students

Welcome Students +

localhost:27017 > uniDB > Students

Documents 10 Aggregations Schema Indexes 1 Validation

Type a query: { field: 'value' } or [Generate query](#) Explain Reset Find Options

[ADD DATA](#) [EXPORT DATA](#) [UPDATE](#) [DELETE](#)

#	_id	ObjectId	regNo	String	name	String	age	Int32
1	ObjectId('681ce7f64534528...')	2021ICT120	"Perera"	24				
2	ObjectId('681ce81b4534528...')	2021ICT121	"Wijesinghe"	23				
3	ObjectId('681ce8324534528...')	2021ICT122	"Fernando"	25				
4	ObjectId('681ce8494534528...')	2021ICT123	"Gunasekara"	22				
5	ObjectId('681ce85d4534528...')	2021ICT124	"Ratnayake"	24				
6	ObjectId('681ce8724534528...')	2021ICT125	"Jayasinghe"	23				
7	ObjectId('681ce8864534528...')	2021ICT126	"Kumara"	26				
8	ObjectId('681ce8984534528...')	2021ICT127	"Silva"	22				
9	ObjectId('681ce8ae4534528...')	2021ICT128	Abeywickram	String				
10	ObjectId('681ce8864534528...')	2021ICT128						

Document modified.

CANCEL UPDATE

DEN - OKC Game score Search 11:12 PM 5/8/2025

## Insert Documents Using MongoDB Shell

Change database and display available databases and collections.

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017

- admin
- config
- local
- uniDB

Students

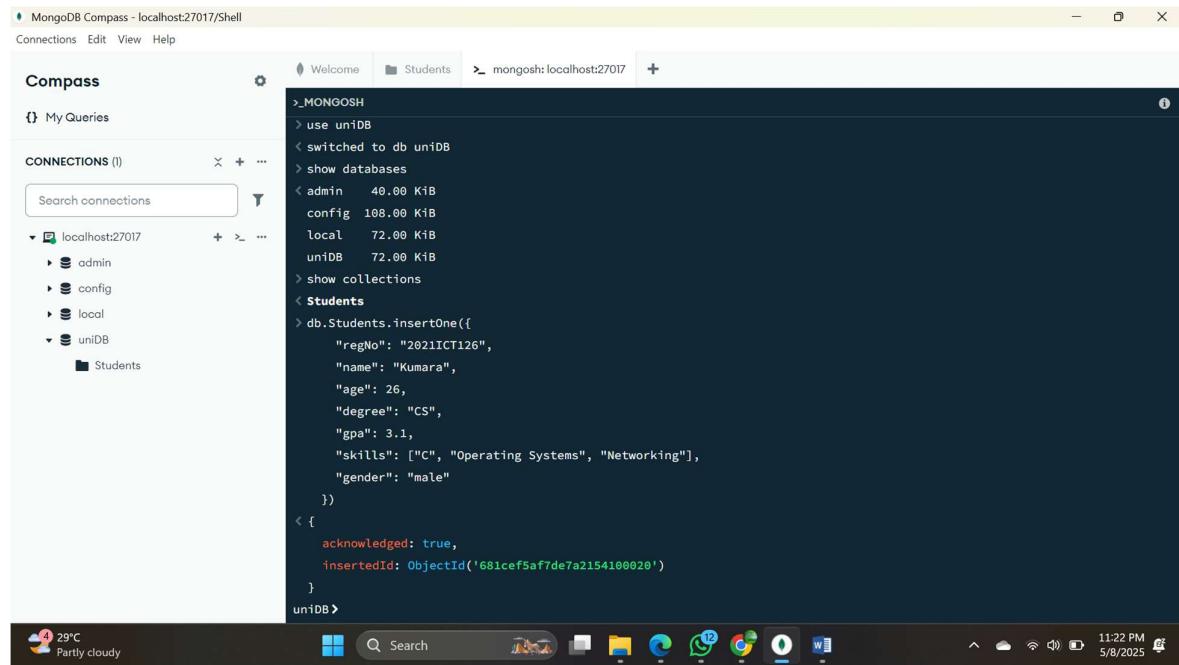
Welcome Students +

localhost:27017 > mongosh: localhost:27017

```
_>_MONGOSH
> use uniDB
< switched to db uniDB
> show databases
< admin    40.00 KiB
 config   108.00 KiB
 local     72.00 KiB
 uniDB    72.00 KiB
> show collections
< Students
uniDB>
```

29°C Partly cloudy Search 11:12 PM 5/8/2025

## Enter one document - insertOne()

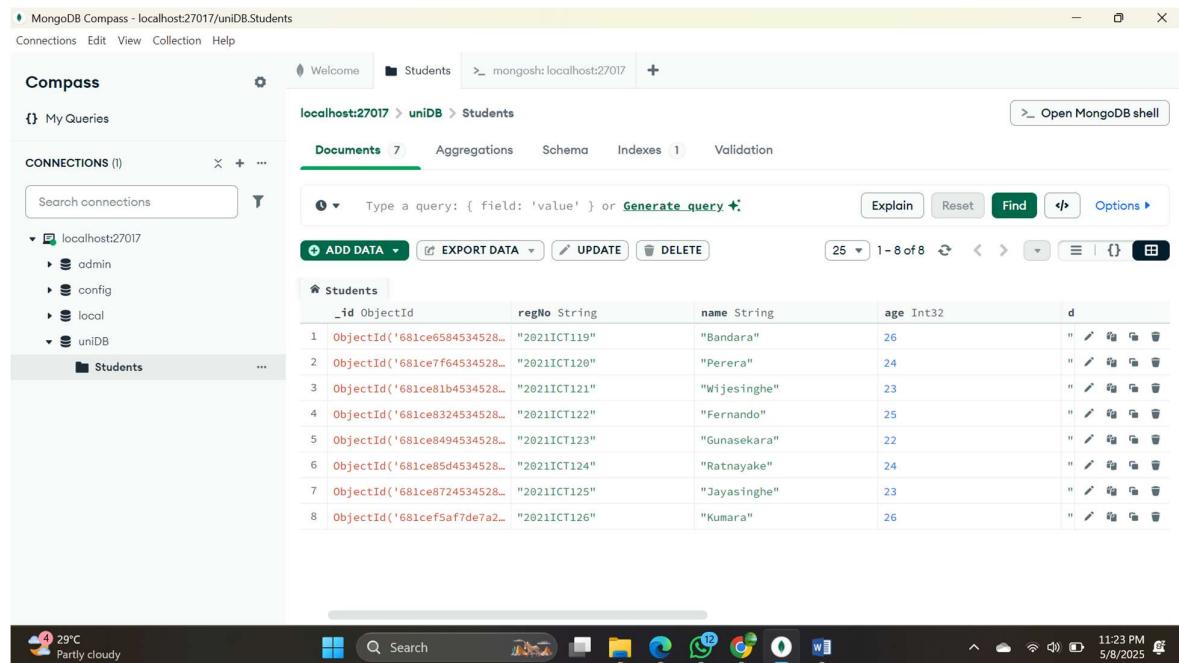


The screenshot shows the MongoDB Compass interface. On the left, the 'Connections' sidebar lists a connection to 'localhost:27017'. Under this connection, the 'uniDB' database is selected, and within it, the 'Students' collection. The main area displays the MongoDB shell command history. The last command shown is:

```
> db.Students.insertOne({  
    "regNo": "2021ICT126",  
    "name": "Kumara",  
    "age": 26,  
    "degree": "CS",  
    "gpa": 3.1,  
    "skills": ["C", "Operating Systems", "Networking"],  
    "gender": "male"  
})  
< {  
    acknowledged: true,  
    insertedId: ObjectId('681cef5af7de7a2154100020')  
}
```

The status bar at the bottom right indicates the date and time as 5/8/2025 11:22 PM.

## Inserted data

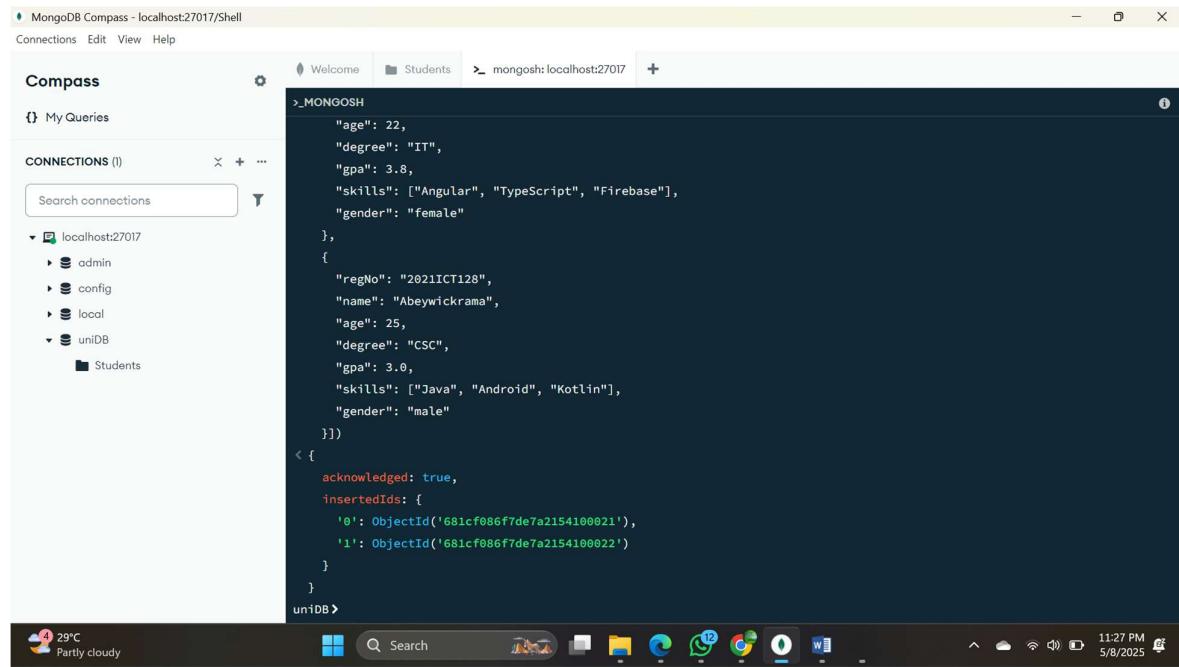


The screenshot shows the MongoDB Compass interface after the insertion. The 'Students' collection now contains 7 documents. The table below shows the data for each document:

	_id	regNo	name	age	d
1	ObjectId('681ce6584534528')	"2021ICT119"	"Bandara"	26	" edit delete
2	ObjectId('681ce7fe4534528')	"2021ICT120"	"Perera"	24	" edit delete
3	ObjectId('681ce81b4534528')	"2021ICT121"	"Wijesinghe"	23	" edit delete
4	ObjectId('681ce8324534528')	"2021ICT122"	"Fernando"	25	" edit delete
5	ObjectId('681ce8494534528')	"2021ICT123"	"Gunasekara"	22	" edit delete
6	ObjectId('681ce85d4534528')	"2021ICT124"	"Ratnayake"	24	" edit delete
7	ObjectId('681ce8724534528')	"2021ICT125"	"Jayasinghe"	23	" edit delete
8	ObjectId('681cef5af7de7a2...')	"2021ICT126"	"Kumara"	26	" edit delete

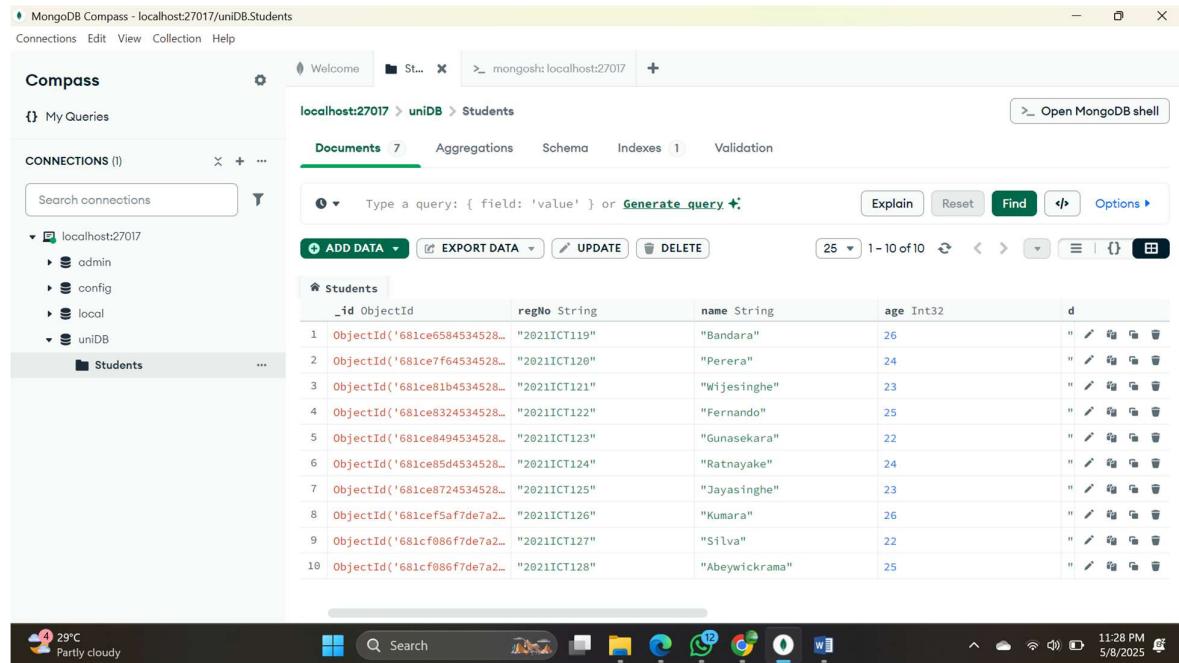
The status bar at the bottom right indicates the date and time as 5/8/2025 11:23 PM.

## Enter multiple documents - insertMany()



```
< MongoDB Compass - localhost:27017/Shell
Connections Edit View Help
Compass
CONNECTIONS (1)
localhost:27017
  admin
  config
  local
  uniDB
    Students
>_MONGOOSH
{
  "age": 22,
  "degree": "IT",
  "gpa": 3.8,
  "skills": ["Angular", "TypeScript", "Firebase"],
  "gender": "female"
},
{
  "regNo": "2021ICT128",
  "name": "Abeywickrama",
  "age": 25,
  "degree": "CSC",
  "gpa": 3.0,
  "skills": ["Java", "Android", "Kotlin"],
  "gender": "male"
})
< {
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('681cf086f7de7a2154100021'),
    '1': ObjectId('681cf086f7de7a2154100022')
  }
}
uniDB >
```

## Inserted data



MongoDB Compass - localhost:27017/uniDB.Students

Connections Edit View Collection Help

localhost:27017 > uniDB > Students

Documents 7 Aggregations Schema Indexes 1 Validation

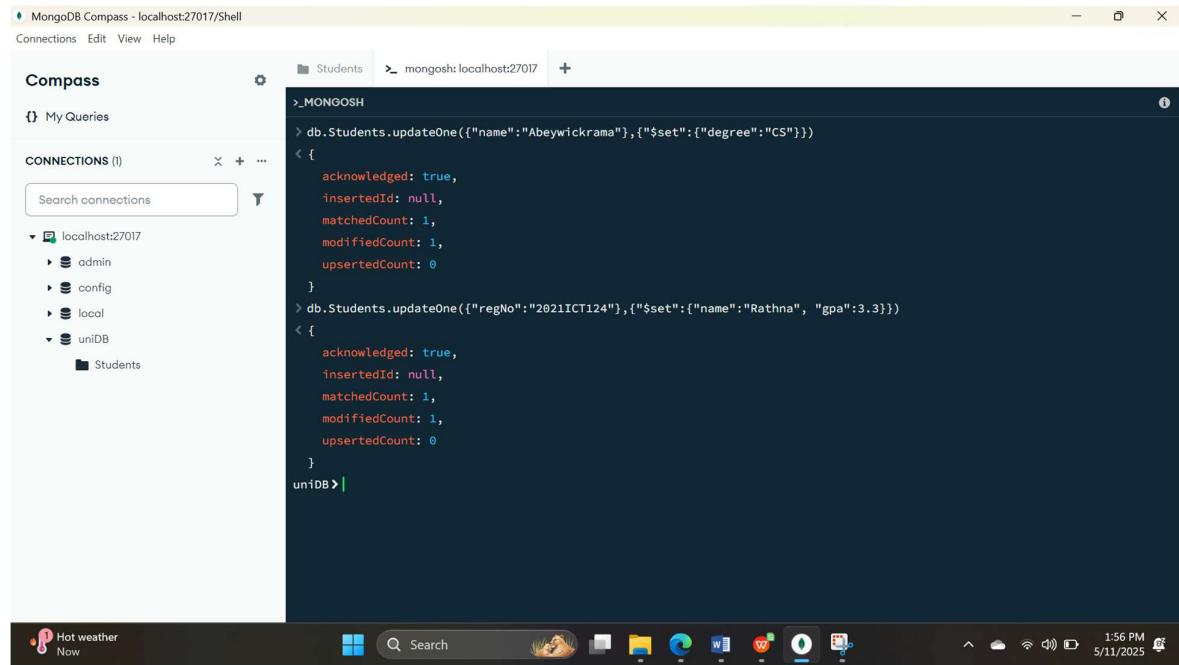
Type a query: { field: 'value' } or [Generate query](#)

[ADD DATA](#) [EXPORT DATA](#) [UPDATE](#) [DELETE](#)

	_id	regNo	name	age	d
1	ObjectId('681ce6584534528')	"2021ICT119"	"Bandara"	26	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Preview</a> <a href="#">Copy</a>
2	ObjectId('681ce7f64534528')	"2021ICT120"	"Perera"	24	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Preview</a> <a href="#">Copy</a>
3	ObjectId('681ce81b4534528')	"2021ICT121"	"Wijesinghe"	23	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Preview</a> <a href="#">Copy</a>
4	ObjectId('681ce8324534528')	"2021ICT122"	"Fernando"	25	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Preview</a> <a href="#">Copy</a>
5	ObjectId('681ce8494534528')	"2021ICT123"	"Gunasekara"	22	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Preview</a> <a href="#">Copy</a>
6	ObjectId('681ce85d4534528')	"2021ICT124"	"Ratnayake"	24	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Preview</a> <a href="#">Copy</a>
7	ObjectId('681ce8724534528')	"2021ICT125"	"Jayasinghe"	23	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Preview</a> <a href="#">Copy</a>
8	ObjectId('681ce5af7de7a2...')	"2021ICT126"	"Kumara"	26	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Preview</a> <a href="#">Copy</a>
9	ObjectId('681cf086f7de7a2...')	"2021ICT127"	"Silva"	22	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Preview</a> <a href="#">Copy</a>
10	ObjectId('681cf086f7de7a2...')	"2021ICT128"	"Abeywickrama"	25	<a href="#">Edit</a> <a href="#">Delete</a> <a href="#">Preview</a> <a href="#">Copy</a>

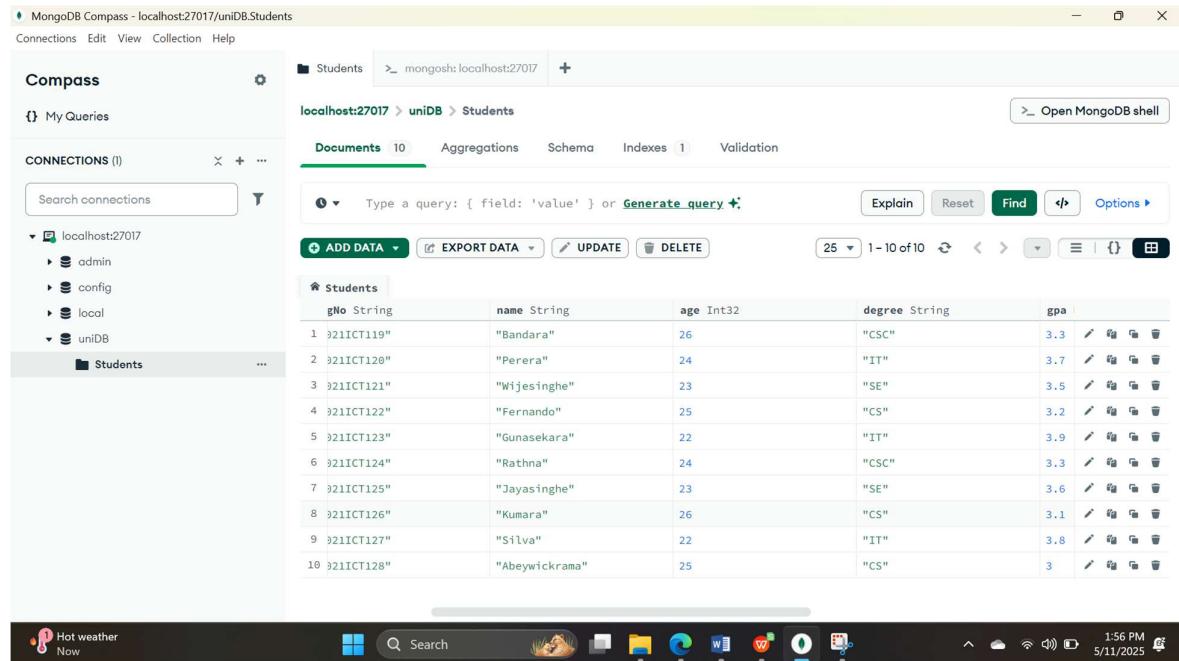
# Update Documents Using MongoDB Shell

## Update one document - updateOne()



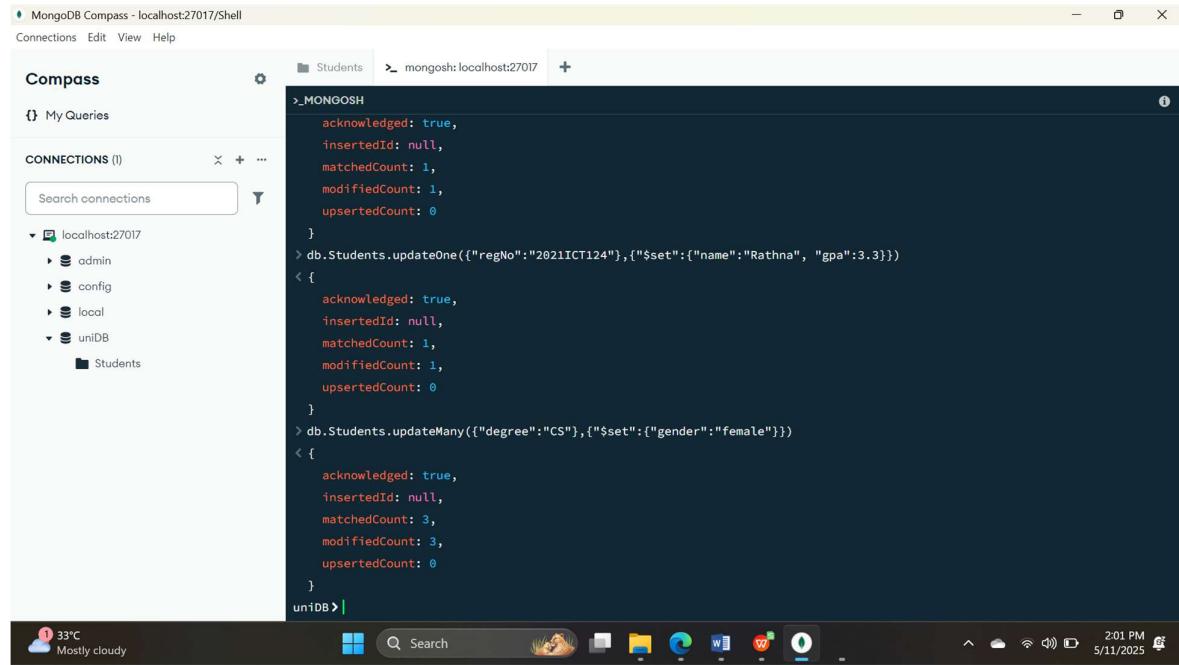
```
> db.Students.updateOne({name:"Abeywickrama"}, {"$set": {"degree": "CS"}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
> db.Students.updateOne({regNo:"2021ICT124"}, {"$set": {"name": "Rathna", "gpa": 3.3}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
uniDB >
```

## Updated document



gNo	name	age	degree	gpa
1 2021ICT119"	"Bandara"	26	"CSC"	3.3
2 2021ICT120"	"Perera"	24	"IT"	3.7
3 2021ICT121"	"Wijesinghe"	23	"SE"	3.5
4 2021ICT122"	"Fernando"	25	"CS"	3.2
5 2021ICT123"	"Gunasekara"	22	"IT"	3.9
6 2021ICT124"	"Rathna"	24	"CSC"	3.3
7 2021ICT125"	"Jayasinghe"	23	"SE"	3.6
8 2021ICT126"	"Kumara"	26	"CS"	3.1
9 2021ICT127"	"Silva"	22	"IT"	3.8
10 2021ICT128"	"Abeywickrama"	25	"CS"	3

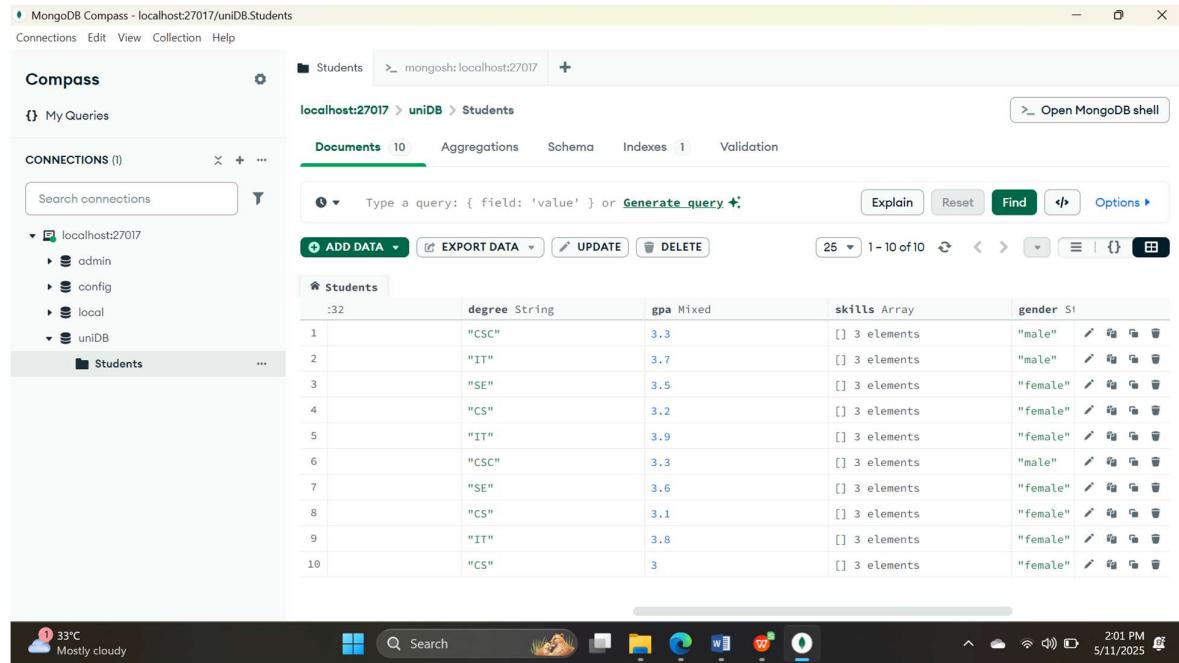
## Update many documents - updateMany()



The screenshot shows the MongoDB Compass interface. On the left, the 'Connections' sidebar lists 'localhost:27017' with 'Students' selected. In the main pane, the 'MONGOSH' shell is open, displaying the execution of the `updateMany()` command. The command updates students with degree 'CS' to set gender to 'female'. The output shows the result with 3 matched and modified documents.

```
>_MONGOSH
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
> db.Students.updateOne({"regNo":"2021ICT124"}, {"$set": {"name": "Rathna", "gpa": 3.3}})
< {
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
> db.Students.updateMany({"degree": "CS"}, {"$set": {"gender": "female"}})
< {
  acknowledged: true,
  insertedId: null,
  matchedCount: 3,
  modifiedCount: 3,
  upsertedCount: 0
}
uniDB>
```

## Updated document



The screenshot shows the MongoDB Compass interface with 'localhost:27017' and 'uniDB' selected. The 'Students' collection is displayed in a table format. The table has columns: \_id, degree, gpa, skills, and gender. The data shows 10 documents, each with a unique ID, degree ('CSC', 'IT', 'SE', 'CS'), gpa (3.3, 3.7, 3.5, 3.2, 3.9, 3.3, 3.6, 3.1, 3.8, 3), skills (an array of 3 elements), and gender ('male' or 'female').

_id	degree	gpa	skills	gender
1	"CSC"	3.3	[] 3 elements	"male"
2	"IT"	3.7	[] 3 elements	"male"
3	"SE"	3.5	[] 3 elements	"female"
4	"CS"	3.2	[] 3 elements	"female"
5	"IT"	3.9	[] 3 elements	"female"
6	"CSC"	3.3	[] 3 elements	"male"
7	"SE"	3.6	[] 3 elements	"female"
8	"CS"	3.1	[] 3 elements	"female"
9	"IT"	3.8	[] 3 elements	"female"
10	"CS"	3	[] 3 elements	"female"

## Delete Records using MongoDB Shell

Delete one record – deleteOne()

The screenshot shows the MongoDB Compass interface. The left sidebar displays connections, with 'localhost:27017' selected. Under 'localhost:27017', the 'Students' collection is chosen. The main pane shows the results of a query. The query consists of three commands: an updateOne operation to change a student's name and GPA, an updateMany operation to change the gender of students in the CS degree, and a deleteOne operation to remove a specific student record.

```
>_MONGOSH
}
> db.Students.updateOne({"regNo":"2021ICT124"}, {"$set":{"name":"Rathna", "gpa":3.3}})
< {
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
> db.Students.updateMany({"degree":"CS"}, {"$set":{"gender":"female"}})
< {
  acknowledged: true,
  insertedId: null,
  matchedCount: 3,
  modifiedCount: 3,
  upsertedCount: 0
}
> db.Students.deleteOne({regNo:"2021ICT122"})
< {
  acknowledged: true,
  deletedCount: 1
}
uniDB >
```

## Updated table

The screenshot shows the MongoDB Compass interface connected to a MongoDB instance at localhost:27017. The left sidebar displays connections, with 'localhost:27017' expanded to show 'admin', 'config', 'local', and 'uniDB'. 'uniDB' is also expanded to show the 'Students' collection. The main area shows the 'Documents' tab for the 'Students' collection, which contains 10 documents. Each document has fields: \_id, regNo, name, age, and d. The 'name' field contains values like "Bandara", "Perera", "Wijesinghe", etc. The 'age' field contains values like 26, 24, 23, etc. The 'd' field contains values represented as icons. A search bar at the top is empty, and a status bar at the bottom indicates it's mostly cloudy with a temperature of 33°C.

	_id	regNo	name	age	d
1	ObjectId('681ce6584534528...')	"2021ICT119"	"Bandara"	26	[Edit, Find, Delete]
2	ObjectId('681ce7f64534528...')	"2021ICT120"	"Perera"	24	[Edit, Find, Delete]
3	ObjectId('681ce81b4534528...')	"2021ICT121"	"Wijesinghe"	23	[Edit, Find, Delete]
4	ObjectId('681ce8494534528...')	"2021ICT123"	"Gunasekara"	22	[Edit, Find, Delete]
5	ObjectId('681ce85d4534528...')	"2021ICT124"	"Rathna"	24	[Edit, Find, Delete]
6	ObjectId('681ce8724534528...')	"2021ICT125"	"Jayasinghe"	23	[Edit, Find, Delete]
7	ObjectId('681cef5af7de7a2...')	"2021ICT126"	"Kumara"	26	[Edit, Find, Delete]
8	ObjectId('681cf086f7de7a2...')	"2021ICT127"	"Silva"	22	[Edit, Find, Delete]
9	ObjectId('681cf086f7de7a2...')	"2021ICT128"	"Abeywickrama"	25	[Edit, Find, Delete]

#### Delete many records – deleteMany()

The screenshot shows the MongoDB Compass interface with the title "MongoDB Compass - localhost:27017/Shell". The left sidebar displays connections, with "localhost:27017" expanded to show databases: admin, config, local, and uniDB, with "Students" selected. The main pane shows a query session for the "Students" collection. The session history includes:

```
>_MONGOOSH
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
}
> db.Students.updateMany({degree:"CS"}, {"$set": {"gender": "female"}})
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 3,
    modifiedCount: 3,
    upsertedCount: 0
}
> db.Students.deleteOne({regNo:"2021ICT122"})
< {
    acknowledged: true,
    deletedCount: 1
}
> db.Students.deleteMany({degree:"CS"})
< {
    acknowledged: true,
    deletedCount: 2
}
uniDB > |
```

## Updated document

MongoDB Compass - localhost:27017/uniDB.Students

Connections Edit View Collection Help

**Compass**

My Queries

CONNECTIONS ()

Search connections

localhost:27017 admin config local uniDB Students

mongosh: localhost:27017 +

localhost:27017 > uniDB > Students

Open MongoDB shell

Documents 10 Aggregations Schema Indexes 1 Validation

Type a query: { field: 'value' } or [Generate query](#)

ADD DATA EXPORT DATA UPDATE DELETE

25 1-7 of 7 Explain Reset Find Options

#	Students	_id	ObjectId	regNo	String	name	String	age	Int32	d
1	Students	ObjectId('681ce6584534528...')	"2021ICT119"			"Bandara"		26		"
2	Students	ObjectId('681ce7f64534528...')	"2021ICT120"			"Perera"		24		"
3	Students	ObjectId('681ce81b4534528...')	"2021ICT121"			"Wijesinghe"		23		"
4	Students	ObjectId('681ce8494534528...')	"2021ICT123"			"Gunasekara"		22		"
5	Students	ObjectId('681ce85d4534528...')	"2021ICT124"			"Rathna"		24		"
6	Students	ObjectId('681ce8724534528...')	"2021ICT125"			"Jayasinghe"		23		"
7	Students	ObjectId('681cf8086f7de7a2...')	"2021ICT127"			"Silva"		22		"

Hot weather Now

Search

212 PM 5/11/2025

# Query Operators

## 1. Find()

Find data using compass

The screenshot shows the MongoDB Compass interface. On the left, the 'Connections' sidebar lists 'localhost:27017' and 'uniDB'. Under 'uniDB', the 'Students' collection is selected. In the main pane, a query is run with the condition `{regNo: "2021ICT120"}`. The results show one document:

```
_id: ObjectId('681ce7f645345285f42f4247')
regNo : "2021ICT120"
name : "Perera"
age : 24
degree : "IT"
gpa : 3.7
skills : Array (3)
gender : "male"
```

The operating system taskbar at the bottom shows the date as 5/11/2025 and the time as 2:17 PM.

Find data using MongoDB Shell

The screenshot shows the MongoDB Compass interface with the 'Shell' connection selected. The 'Students' collection is chosen. In the main pane, a `find` command is run with the condition `{regNo: "2021ICT120"}`. The results show one document:

```
_id: ObjectId('681ce7f645345285f42f4247')
regNo : '2021ICT120'
name : 'Perera'
age: 24,
degree: 'IT',
gpa: 3.7,
skills: [
  'Python',
  'Django',
  'SQL'
],
gender: 'male'
```

The operating system taskbar at the bottom shows the date as 5/11/2025 and the time as 2:19 PM.

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

{} My Queries

CONNECTIONS ()

localhost:27017

+ Search connections

\_MONGOSH

```
>_MONGOSH
skills: [
  'Python',
  'Django',
  'SQL'
],
gender: 'male'
}
> db.Students.findOne({gender:"female"})
< {
  _id: ObjectId('681ce81b45345285f42f4248'),
  regNo: '2021ICT121',
  name: 'Wijesinghe',
  age: 23,
  degree: 'SE',
  gpa: 3.5,
  skills: [
    'Java',
    'Spring Boot',
    'MySQL'
  ],
  gender: 'female'
}
uniDB >
```

33°C Mostly cloudy

Search

2:22 PM 5/11/2025

## 2. Projecting Data using Compass

MongoDB Compass - localhost:27017/uniDB.Students

Connections Edit View Collection Help

Compass

{} My Queries

CONNECTIONS ()

localhost:27017

+ Search connections

localhost:27017 > uniDB > Students

Documents 10 Aggregations Schema Indexes 1 Validation

> Open MongoDB shell

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}]]

MaxTime MS 60000

Collation { locale: 'simple' }

Skip 0 Limit 0

Index Hint { field: -1 }

EXPORT DATA

25 1-7 of 7

	Students	
	name String	age Int32
2	"Perera"	24
3	"Wijesinghe"	23
4	"Gunasekara"	22
5	"Rathna"	24
6	"Jayasinghe"	23
7	"Silva"	22

33°C Mostly cloudy

Search

2:26 PM 5/11/2025

### 3. Sort

Sorting data using Compass

The screenshot shows the MongoDB Compass interface. The left sidebar lists connections, with 'localhost:27017' selected. Under 'localhost:27017', 'uniDB' is expanded, and 'Students' is selected. The main area shows the 'Documents' tab with 10 results. A query builder is at the top, set to sort by age in descending order. Below it is a table with student data:

	_id	ObjectId	regNo	String	name	String	age	Int32
1		ObjectId('681ce6584534528...')	"2021ICT119"		"Bandara"		26	
2		ObjectId('681ce7f64534528...')	"2021ICT120"		"Perera"		24	
3		ObjectId('681ce85d4534528...')	"2021ICT124"		"Rathna"		24	
4		ObjectId('681ce81b4534528...')	"2021ICT121"		"Wijesinghe"		23	
5		ObjectId('681ce8724534528...')	"2021ICT125"		"Jayasinghe"		23	
6		ObjectId('681ce8494534528...')	"2021ICT123"		"Gunasekara"		22	

At the bottom, there are buttons for ADD DATA, EXPORT DATA, UPDATE, and DELETE.

Sorting data using MongoDB Shell

The screenshot shows the MongoDB Shell interface. The left sidebar lists connections, with 'localhost:27017' selected. Under 'localhost:27017', 'uniDB' is expanded, and 'Students' is selected. The main area shows the command line with a sorted query:

```
> db.Students.find().sort({age:1})
```

```
< [
  {
    _id: ObjectId('681ce84945345285f42f424a'),
    regNo: '2021ICT123',
    name: 'Gunasekara',
    age: 22,
    degree: 'IT',
    gpa: 3.9,
    skills: [
      'HTML',
      'CSS',
      'React'
    ],
    gender: 'female'
  },
  {
    _id: ObjectId('681cf086f7de7a2154100021'),
    regNo: '2021ICT127',
    name: 'Silva',
    age: 22,
    degree: 'IT',
    gpa: 3.8,
    skills: [

```

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017

admin config local uniDB Students

mongosh:localhost:27017 Students +

```
>_MONGOSH
{
  "age": 23,
  "degree": "SE",
  "gpa": 3.5,
  "skills": [
    "Java",
    "Spring Boot",
    "MySQL"
  ],
  "gender": "female"
}
{
  "_id": ObjectId('681ce87245345285f42f424c'),
  "regNo": "2021ICT125",
  "name": "Jayasinghe",
  "age": 23,
  "degree": "SE",
  "gpa": 3.6,
  "skills": [
    "Python",
    "Flask",
    "PostgreSQL"
  ],
  "gender": "female"
}
```

32°C Partly sunny

2:45 PM 5/11/2025

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017

admin config local uniDB Students

mongosh:localhost:27017 Students +

```
>_MONGOSH
{
  "age": 24,
  "degree": "IT",
  "gpa": 3.7,
  "skills": [
    "Python",
    "Django",
    "SQL"
  ],
  "gender": "male"
}
{
  "_id": ObjectId('681ce85d45345285f42f424b'),
  "regNo": "2021ICT124",
  "name": "Rathna",
  "age": 24,
  "degree": "CSC",
  "gpa": 3.3,
  "skills": [
    "PHP",
    "Laravel",
    "MySQL"
  ],
  "gender": "male"
}
```

32°C Partly sunny

2:46 PM 5/11/2025

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017

admin config local uniDB Students

mongosh:localhost:27017 Students +

```
>_MONGOSH
{
  "gpa": 3.3,
  "skills": [
    "PHP",
    "Laravel",
    "MySQL"
  ],
  "gender": "male"
}
{
  "_id": ObjectId('681ce65845345285f42f4246'),
  "regNo": "2021ICT119",
  "name": "Bandara",
  "age": 26,
  "degree": "CSC",
  "gpa": 3.3,
  "skills": [
    "JS",
    "MongoDB",
    "Node"
  ],
  "gender": "male"
}
```

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2:47 PM 5/11/2025

#### 4. \$gt → greater than

**Compass**

MongoDB Compass - localhost:27017/unidB.Students

Connections Edit View Collection Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017 admin config local uniDB Students

localhost:27017 > uniDB > Students

Documents 10 Aggregations Schema Indexes 1 Validation

Search connections

age:{\$gt:23}

Generate query Explain Reset Find Options

ADD DATA EXPORT DATA UPDATE DELETE INSIGHT 25 1-3 of 3

	_id	ObjectID	regNo	String	name	String	age	Int32	d
1		ObjectId('681ce65845345285f42f4246')	'2021ICT119'		"Bandara"		26		
2		ObjectId('681ce7f645345285f42f4247')	'2021ICT120'		"Perera"		24		
3		ObjectId('681ce85d45345285f42f424b')	'2021ICT124'		"Rathna"		24		

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**MongoDB Shell**

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017 admin config local uniDB Students

\_MONGOSH

```
> db.Students.find({age:{$gt:23}})
< [
  {
    _id: ObjectId('681ce65845345285f42f4246'),
    regNo: '2021ICT119',
    name: 'Bandara',
    age: 26,
    degree: 'CSC',
    gpa: 3.3,
    skills: [
      'OS',
      'MongoDB',
      'Node'
    ],
    gender: 'male'
  },
  {
    _id: ObjectId('681ce7f645345285f42f4247'),
    regNo: '2021ICT120',
    name: 'Perera',
    age: 24,
    degree: 'IT',
    gpa: 3.7,
    skills: [

```

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MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017 admin config local uniDB Students

\_MONGOSH

```
gpa: 3.7,
skills: [
  'Python',
  'Django',
  'SQL'
],
gender: 'male'
}
{
  _id: ObjectId('681ce85d45345285f42f424b'),
  regNo: '2021ICT124',
  name: 'Rathna',
  age: 24,
  degree: 'CSC',
  gpa: 3.3,
  skills: [
    'PHP',
    'Laravel',
    'MySQL'
  ],
  gender: 'male'
}
uniDB
```

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## 5. $\$lt \rightarrow$ less than

**Compass**

MongoDB Compass - localhost:27017/uniDB.Students

Connections Edit View Collection Help

**Documents** 10 Aggregations Schema Indexes 1 Validation

`{age:{$lt:23}}`

**Students**

_id	regNo	name	age	d
ObjectId('681ce84945345285f42f424a')	"2021ICT123"	"Gunasekara"	22	"
ObjectId('681cf086f7de7a2154100021')	"2021ICT127"	"Silva"	22	"

**MongoDB Shell**

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

```
> db.Students.find({age:{$lt:23}})
< [
  {
    "_id": ObjectId('681ce84945345285f42f424a'),
    "regNo": '2021ICT123',
    "name": 'Gunasekara',
    "age": 22,
    "degree": 'IT',
    "gpa": 3.9,
    "skills": [
      'HTML',
      'CSS',
      'React'
    ],
    "gender": 'female'
  },
  {
    "_id": ObjectId('681cf086f7de7a2154100021'),
    "regNo": '2021ICT127',
    "name": 'Silva',
    "age": 22,
    "degree": 'IT',
    "gpa": 3.8,
    "skills": [

```

## 6. \$eq → equal

Compass

MongoDB Compass - localhost:27017/uniDB.Students

Connections Edit View Collection Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017

- admin
- config
- local
- uniDB

Students

Documents 10 Aggregations Schema Indexes 1 Validation

localhost:27017 > uniDB > Students

Open MongoDB shell

Documents 10 Aggregations Schema Indexes 1 Validation

Find Options

ADD DATA EXPORT DATA UPDATE DELETE INSIGHT

Students

_id	ObjectID	regNo	String	name	String	age	Int32	d
1	ObjectId('681ce7f645345285f42f4247')	"2021ICT120"		"Perera"		24		"
2	ObjectId('681ce85d45345285f42f424b')	"2021ICT124"		"Rathna"		24		"

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MongoDB Shell

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017

- admin
- config
- local
- uniDB

Students

\_MONGOSH

```
> db.Students.find({age:{$eq:24}})
< [
  {
    _id: ObjectId('681ce7f645345285f42f4247'),
    regNo: '2021ICT120',
    name: 'Perera',
    age: 24,
    degree: 'IT',
    gpa: 3.7,
    skills: [
      'Python',
      'Django',
      'SQL'
    ],
    gender: 'male'
  },
  {
    _id: ObjectId('681ce85d45345285f42f424b'),
    regNo: '2021ICT124',
    name: 'Rathna',
    age: 24,
    degree: 'CSC',
    gpa: 3.3,
    skills: [

```

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## 7. \$ne → not equal

**Compass**

MongoDB Compass - localhost:27017/uniDB.Students

Connections Edit View Collection Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017 Students

Documents 10 Aggregations Schema Indexes 1 Validation

localhost:27017 > uniDB > Students

Open MongoDB shell

Documents 10 Aggregations Schema Indexes 1 Validation

age: { \$ne: 24 }

Generate query Explain Reset Find Options

ADD DATA EXPORT DATA UPDATE DELETE INSIGHT 25 1-5 of 5

#	Students	_id	ObjectId	regNo	String	name	String	age	Int32	d
1	Students	1	ObjectId('681ce6584534528...')	"2021ICT119"		"Bandara"		26		"
2	Students	2	ObjectId('681ce81b4534528...')	"2021ICT121"		"Wijesinghe"		23		"
3	Students	3	ObjectId('681ce8494534528...')	"2021ICT123"		"Gunasekara"		22		"
4	Students	4	ObjectId('681ce8724534528...')	"2021ICT125"		"Jayasinghe"		23		"
5	Students	5	ObjectId('681cf086f7de7a2...')	"2021ICT127"		"Silva"		22		"

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**MongoDB Shell**

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

My Queries

CONNECTIONS (1)

localhost:27017 Students

\_MONGOOSH

```
> db.Students.find({age:{'$ne':24}})
```

```
< [
  {
    "_id": ObjectId('681ce65845345285f42f4246'),
    "regNo": '2021ICT119',
    "name": 'Bandara',
    "age": 26,
    "degree": 'CSC',
    "gpa": 3.3,
    "skills": [
      'JS',
      'MongoDB',
      'Node'
    ],
    "gender": 'male'
  },
  {
    "_id": ObjectId('681ce81b45345285f42f4248'),
    "regNo": '2021ICT121',
    "name": 'Wijesinghe',
    "age": 23,
    "degree": 'SE',
    "gpa": 3.5,
    "skills": [

```

32°C Partly sunny Search 3:00 PM 5/11/2025

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

{} My Queries

CONNECTIONS ()

localhost:27017

+ ...

Search connections

\_MONGOSH

```
regNo: '2021ICT123',
name: 'Gunasekara',
age: 22,
degree: 'IT',
gpa: 3.9,
skills: [
  'HTML',
  'CSS',
  'React'
],
gender: 'female'

{
  _id: ObjectId('681ce87245345285f42f424c'),
  regNo: '2021ICT125',
  name: 'Jayasinghe',
  age: 23,
  degree: 'SE',
  gpa: 3.6,
  skills: [
    'Python',
    'Flask',
    'PostgreSQL'
  ],
  gender: 'female'

}
{
  _id: ObjectId('681cf086f7de7a2154100021'),
  regNo: '2021ICT127',
  name: 'Silva',
  age: 22,
  degree: 'IT',
  gpa: 3.8,
  skills: [
    'Angular',
    'TypeScript',
    'Firebase'
  ],
  gender: 'female'
}
```

Students

mongosh: localhost:27017 Students +

32°C Partly sunny

Search

3:01 PM 5/11/2025

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

{} My Queries

CONNECTIONS ()

localhost:27017

+ ...

Search connections

\_MONGOSH

```
gpa: 3.6,
skills: [
  'Python',
  'Flask',
  'PostgreSQL'
],
gender: 'female'

{
  _id: ObjectId('681cf086f7de7a2154100021'),
  regNo: '2021ICT127',
  name: 'Silva',
  age: 22,
  degree: 'IT',
  gpa: 3.8,
  skills: [
    'Angular',
    'TypeScript',
    'Firebase'
  ],
  gender: 'female'
}
```

Students

mongosh: localhost:27017 Students +

32°C Partly sunny

Search

3:01 PM 5/11/2025

## 8. \$in → matches any in array

**Compass**

MongoDB Compass - localhost:27017/uniDB.Students

Connections Edit View Collection Help

Compass

My Queries

CONNECTIONS ()

localhost:27017 admin config local uniDB Students

localhost:27017 > uniDB > Students

Documents 10 Aggregations Schema Indexes 1 Validation

{skills:\$in:["MongoDB"]}

Generate query Explain Reset Find Options ↗

ADD DATA EXPORT DATA UPDATE DELETE INSIGHT 25 1-1 of 1

```
_id: ObjectId('681ce65845345285f42f4246')
regNo : "2021ICT119"
name : "Bandara"
age : 26
degree : "CSC"
gpa : 3.3
skills : Array (3)
  0: "JS"
  1: "MongoDB"
  2: "Node"
gender : "male"
```

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**MongoDB Shell**

MongoDB Compass - localhost:27017/Shell

Connections Edit View Help

Compass

My Queries

CONNECTIONS ()

localhost:27017 admin config local uniDB Students

\_MONGOSH

```
skills: [
  'Angular',
  'TypeScript',
  'Firebase'
],
gender: 'female'
}
> db.Students.find({skills:{'$in':["Java"]}})
< {
  _id: ObjectId('681ce81b45345285f42f4248'),
  regNo: '2021ICT121',
  name: 'Wijesinghe',
  age: 23,
  degree: 'SE',
  gpa: 3.5,
  skills: [
    'Java',
    'Spring Boot',
    'MySQL'
  ],
  gender: 'female'
}
```

Hot weather Now Search 3:07 PM 5/11/2025

## 9. \$nin → doesn't matches any in array

**Compass**

MongoDB Compass - localhost:27017/uniDB.Students

Connections Edit View Collection Help

localhost:27017 > uniDB > Students

Documents 10 Aggregations Schema Indexes 1 Validation

Find Options

ADD DATA EXPORT DATA UPDATE DELETE INSIGHT 25 1–5 of 5

Skills: { \$nin: ["MySQL"] }

Generate query Explain Reset Find Options

regNo : "202111C119" name : "Bandara" age : 26 degree : "CSC" gpa : 3.8 skills : Array (3) 0: "Python" 1: "MongoDB" 2: "Node" gender : "male"

\_id: ObjectId('681ceff645345285f42f4247') regNo : "20211CT128" name : "Perera" age : 24 degree : "IT" gpa : 3.7 skills : Array (3) 0: "Python" 1: "Django" 2: "SQL"

Feels hotter Now

3:10 PM 5/11/2025

MongoDB Compass - localhost:27017/uniDB.Students

Connections Edit View Collection Help

localhost:27017 > uniDB > Students

Documents 10 Aggregations Schema Indexes 1 Validation

Find Options

ADD DATA EXPORT DATA UPDATE DELETE INSIGHT 25 1–5 of 5

Skills: { \$nin: ["MySQL"] }

Generate query Explain Reset Find Options

regNo : "20211CT123" name : "Gunasekara" age : 22 degree : "IT" gpa : 3.9 skills : Array (3) 0: "HTML" 1: "CSS" 2: "React" gender : "female"

\_id: ObjectId('681ceff67245345285f42f424c') regNo : "20211CT125" name : "Jayasinghe" age : 23 degree : "SE" gpa : 3.6 skills : Array (3) 0: "Python" 1: "Flask" 2: "PostgreSQL"

Feels hotter Now

3:10 PM 5/11/2025

MongoDB Compass - localhost:27017/uniDB.Students

Connections Edit View Collection Help

localhost:27017 > uniDB > Students

Documents 10 Aggregations Schema Indexes 1 Validation

Find Options

ADD DATA EXPORT DATA UPDATE DELETE INSIGHT 25 1–5 of 5

Skills: { \$nin: ["MySQL"] }

Generate query Explain Reset Find Options

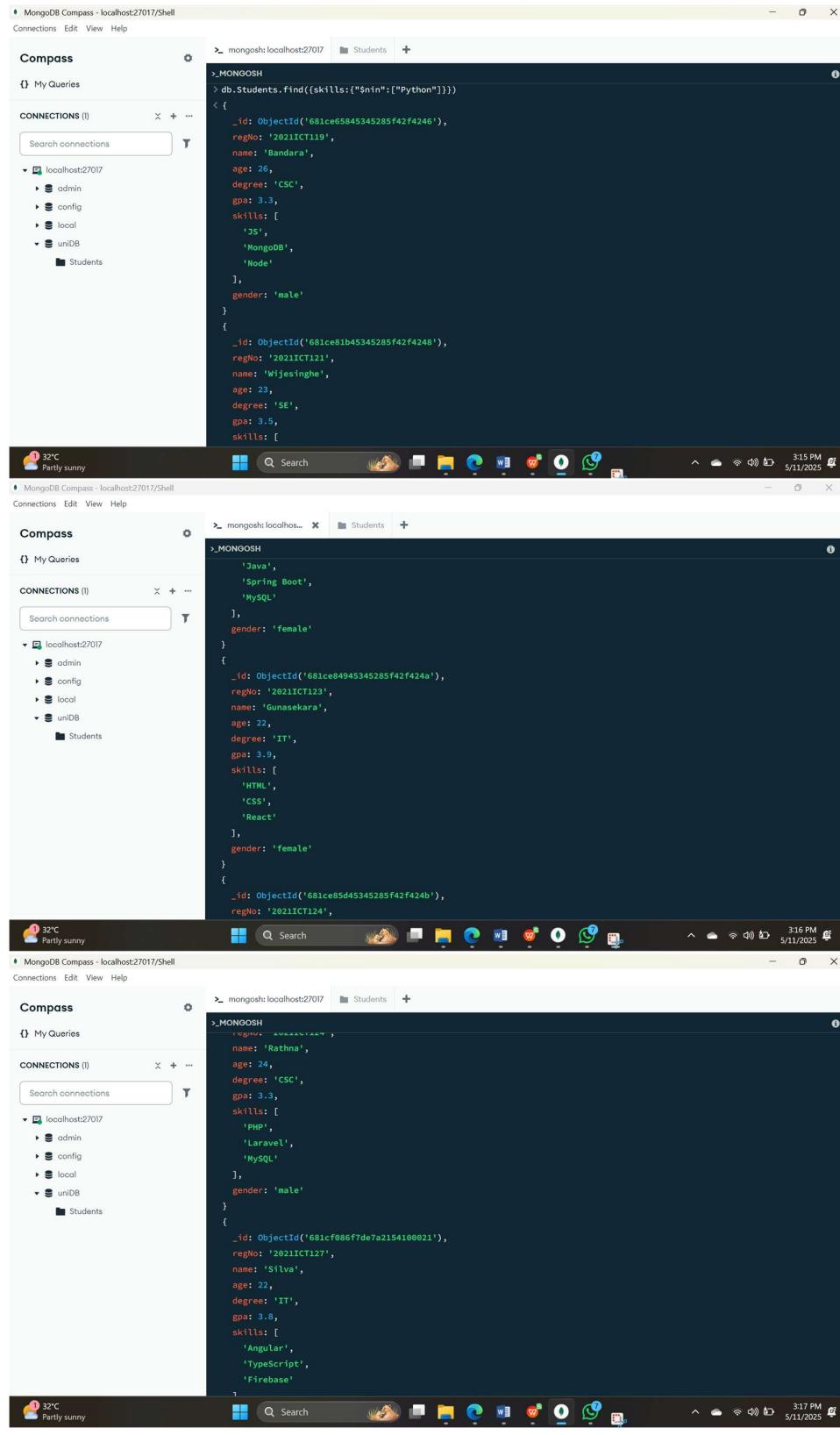
degree : "SE" gpa : 3.6 skills : Array (3) 0: "Python" 1: "Flask" 2: "PostgreSQL" gender : "female"

\_id: ObjectId('681ceff686f7de7a2154100021') regNo : "20211CT127" name : "Silva" age : 22 degree : "IT" gpa : 3.8 skills : Array (3) 0: "Angular" 1: "TypeScript" 2: "Firebase" gender : "female"

Feels hotter Now

3:12 PM 5/11/2025

## MongoDB Shell



The screenshots show the MongoDB Compass interface with the 'Students' collection selected. The left pane displays the connection list, and the right pane shows the MongoDB shell with the following code and results:

```
_>_MONGOSH
> db.Students.find({skills:["$nin":["Python"]])
< [
  {
    _id: ObjectId('681ce65845345285f42f4246'),
    regNo: '2021ICT119',
    name: 'Bandara',
    age: 26,
    degree: 'CSC',
    gpa: 3.3,
    skills: [
      'JS',
      'MongoDB',
      'Node'
    ],
    gender: 'male'
  },
  {
    _id: ObjectId('681ce81b45345285f42f4248'),
    regNo: '2021ICT121',
    name: 'Wijesinghe',
    age: 23,
    degree: 'SE',
    gpa: 3.5,
    skills: [
      'Java',
      'Spring Boot',
      'MySQL'
    ],
    gender: 'female'
  },
  {
    _id: ObjectId('681ce84945345285f42f424a'),
    regNo: '2021ICT123',
    name: 'Gunasekara',
    age: 22,
    degree: 'IT',
    gpa: 3.9,
    skills: [
      'HTML',
      'CSS',
      'React'
    ],
    gender: 'female'
  },
  {
    _id: ObjectId('681ce85d45345285f42f424b'),
    regNo: '2021ICT124',
    name: 'Rathna',
    age: 24,
    degree: 'CSC',
    gpa: 3.3,
    skills: [
      'PHP',
      'Laravel',
      'MySQL'
    ],
    gender: 'male'
  },
  {
    _id: ObjectId('681cf086f7de7a2154100021'),
    regNo: '2021ICT127',
    name: 'Silva',
    age: 22,
    degree: 'IT',
    gpa: 3.8,
    skills: [
      'Angular',
      'TypeScript',
      'Firebase'
    ]
  }
]
```

\*\*\*\*\*