IT2234 (p) Web Service and Server Technologies.
University of Vavuniya
Faculty of Applied science
Department of physical science
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Practical   : Introduction of MongoDB

1. Install MongoDB

- Go to https://www.mongodb.com/try/download/community
- Select your OS and download the **MongoDB Community Server**.
- Run the installer and follow these steps:
    - Choose **Complete** installation.
    - Tick **Install MongoDB Compass** (GUI tool – optional but helpful).
    - Click **Install**.
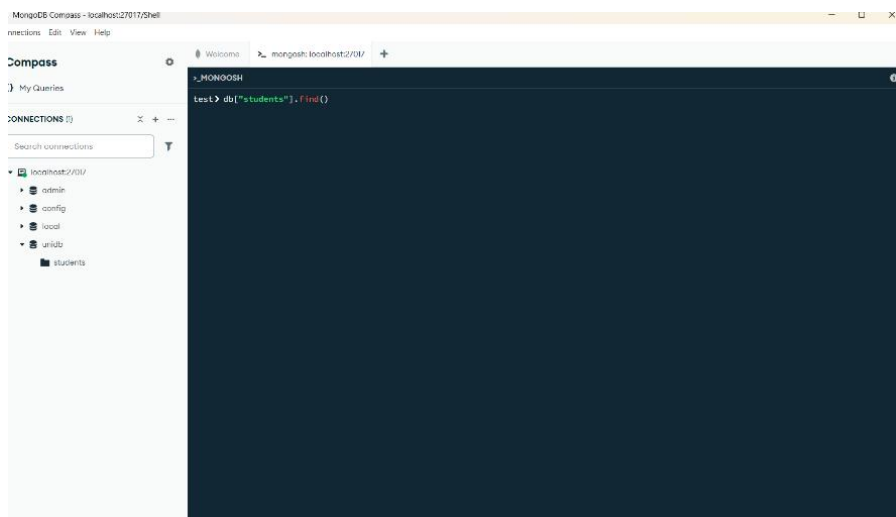
2. Add MongoDB to System Path (Windows)

- During installation, enable the option **"Add MongoDB to PATH environment variable"**.
- If missed, manually add `C:\Program Files\MongoDB\Server\<version>\bin` to system `PATH`.

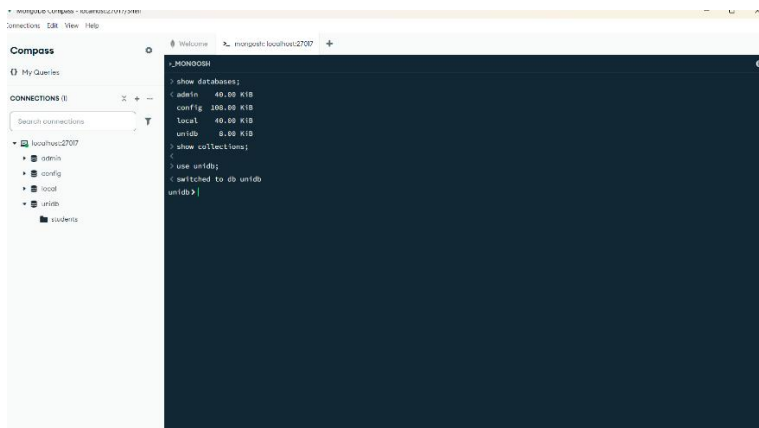
1. Open MongoDB Compass from the Start Menu.

   MongoDB server will start and wait for connections on `mongodb://localhost:27017`.

2. click add new connection, create new database (unidb) and create collection (students)
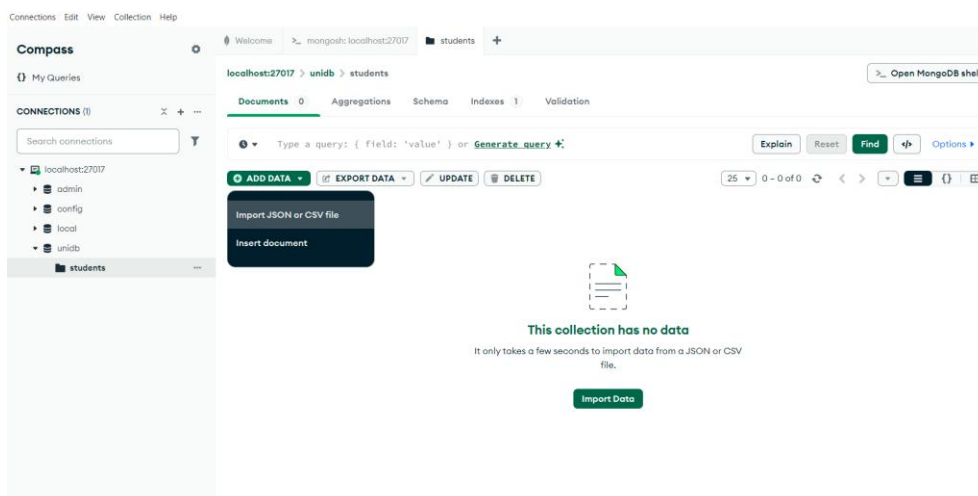
3. Open MongoDB shell

4. Type commands in shell

Database command

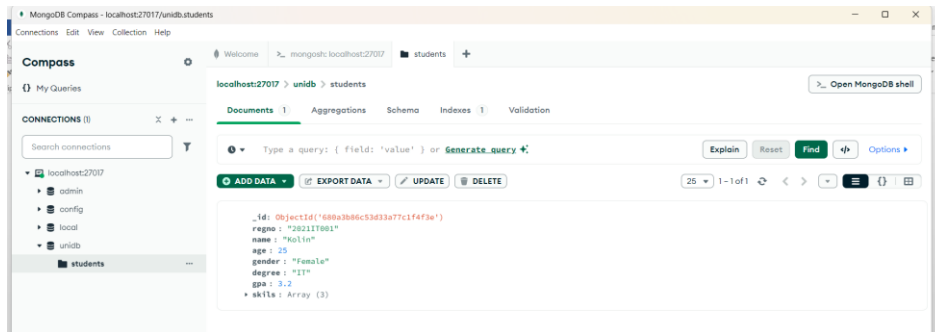|	
show databases	List all databases
use unidb	Switch to or create a database
db	Show current database
db.dropDatabase()	Delete current database

collection command

show collections	List all collections in current database
db.createCollection("myCol")	Create a new collection
db.myCol.drop()	Drop a collection

5. Add data -> insert document   in the collection students

6. Insert data

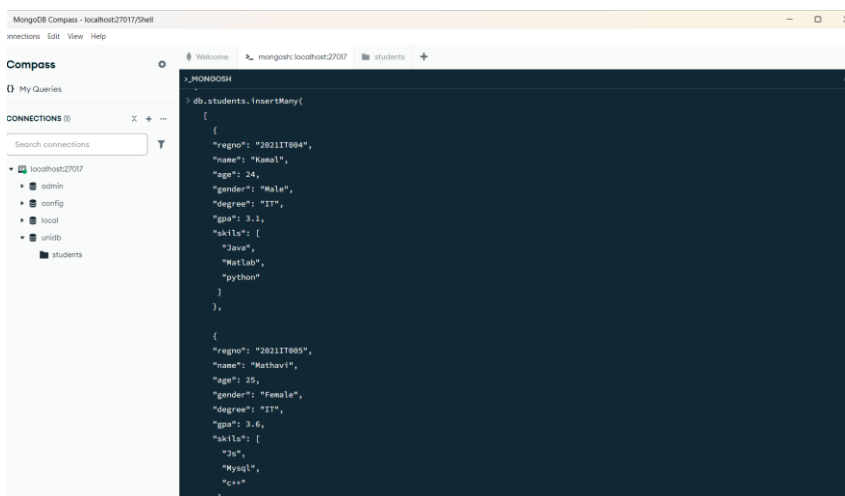Oid – object id (auto generated) unique value like of primary id

Click colone document, edit document we can type more field with data

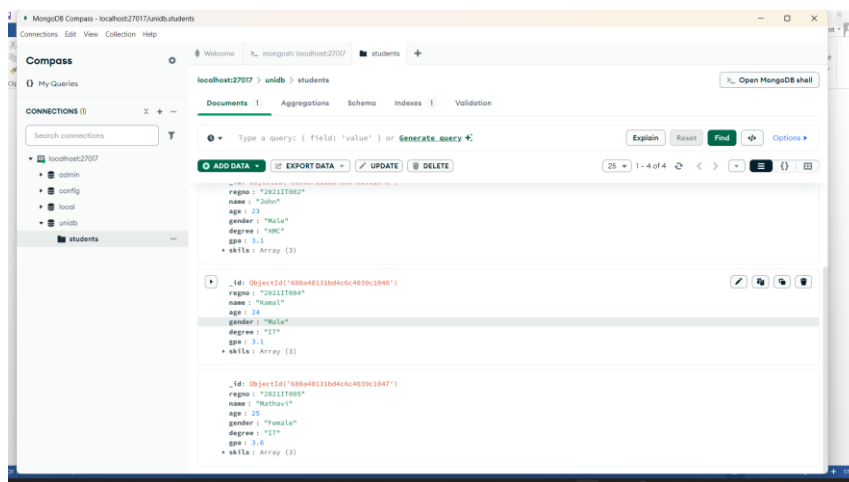We can insert the data using shell by providing code

```
> db.students.insertOne(
  {
    "regno": "2021IT00",
    "name": "John",
    "age": 23,
    "gender": "Male",
    "degree": "AMC",
    "gpa": 3.1,
    "skils": [
      "Mysql",
      "c#",
      "JS"
    ]
  }
)
< {
    acknowledged: true,
    insertedId: ObjectId('680a3f111bd4c6c4039c1045')
  }
unidb >
```

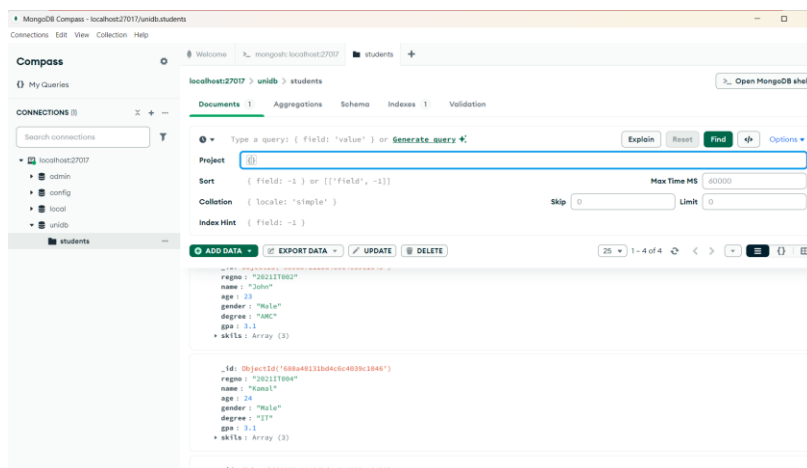db.students.insertOne - Adds a **single document** to the `students` collection.

db.students.insertMany - You use `insertMany` when you want to **add multiple documents** at once, which is faster and more efficient than inserting them one by one.
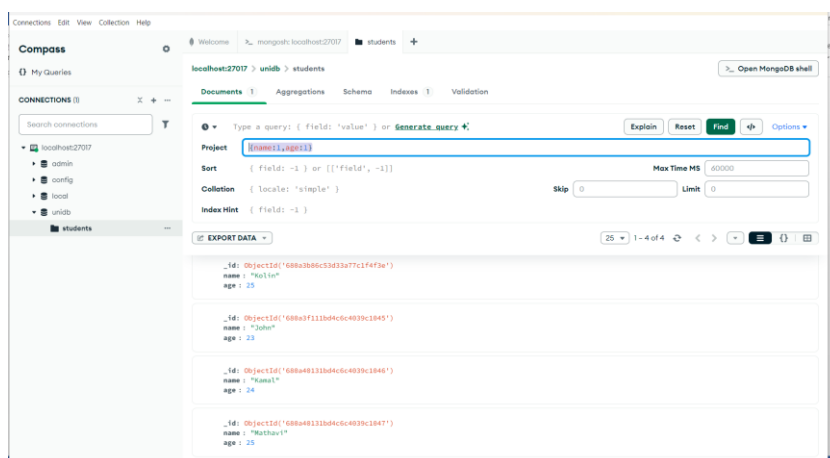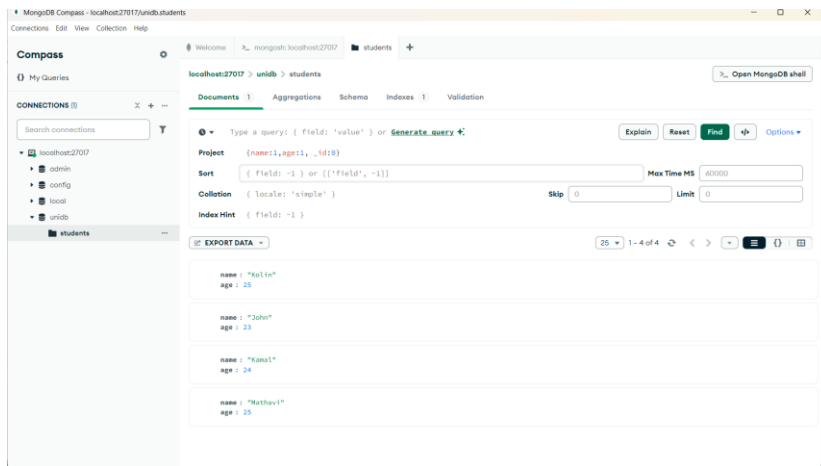
7. By clicking find button you can see inserted data

8. click option in the corner type queries in the project field

`{ name: 1, age: 1 }` is used to **project specific fields** when querying documents — it tells MongoDB to **include only those fields** in the output.
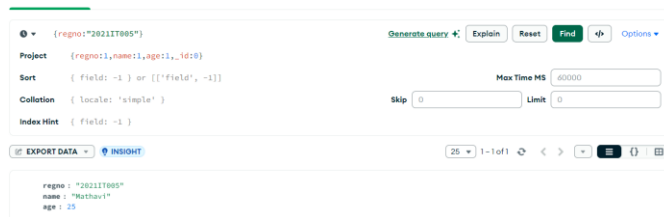

Return **only `name` and `age`** for each student. `_id` is included **by default** unless explicitly excluded.

the `_id` field is included by default in all query results. However, if you want to **exclude** the `_id` field from the output, you can explicitly set it to `0` in the projection.
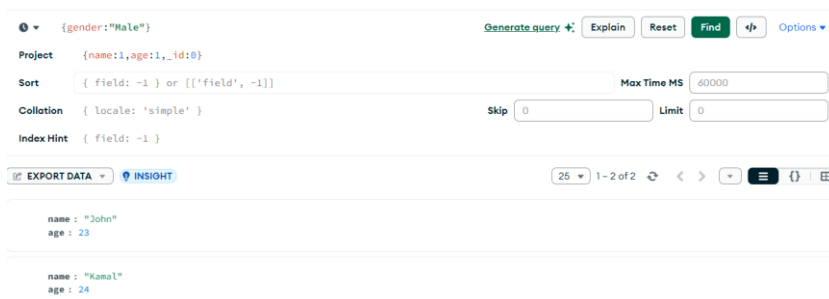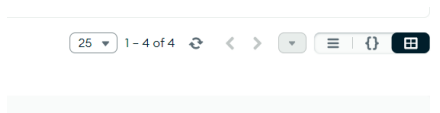
9. Find particular regno

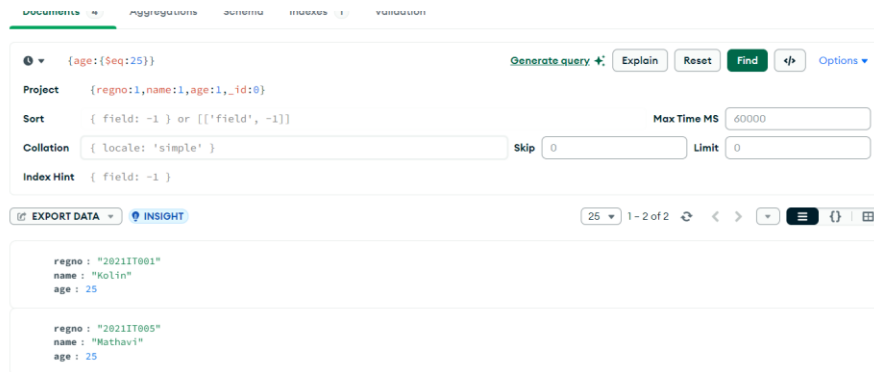{regno:"2021IT002"}

Find male students

{gender:"Male"}

10. There is a output option for viewing outputs
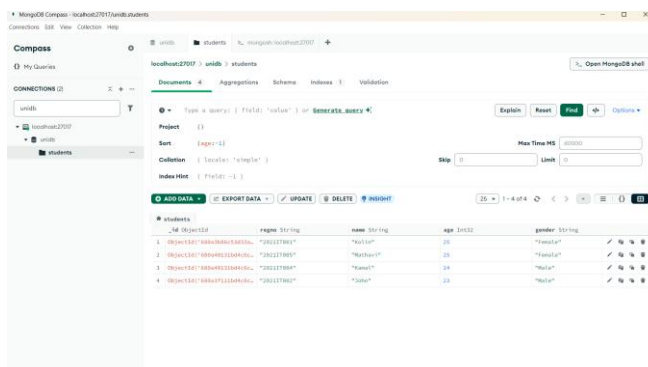

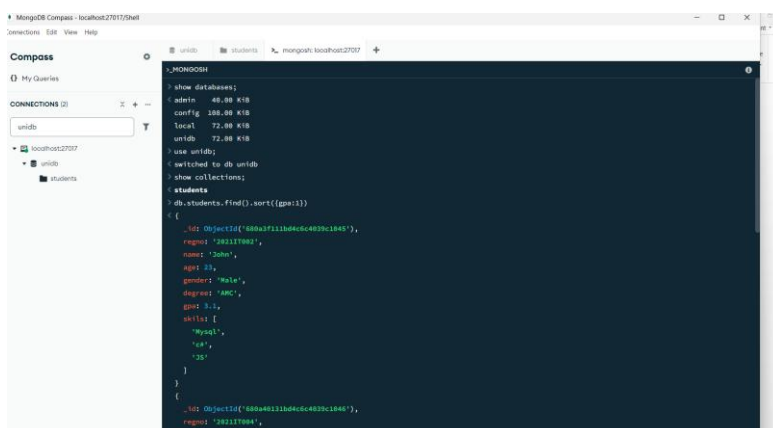List view, table view

11. find the students whose age is 25

12. sorting the data according to age

{age:-1} age in descending order


```
db.students.find().sort({gpa:1})
```

```
db.students.find({'degree':'IT'}).sort({gpa:1})
```


13. find the students who knows mongodb

   { skils: {$in:['Mongodb']} }