PART 2:

Illustration of Where Clause, AND, OR operations in MongoDB:

Let's load the document:

- Download the student csv from this link
- Import the data to the collection created link
- You should be able to see the uploaded data in mongo compass.

Installation of mango shell:

- Mongo Shell download link
- All the work is expected to do it in mongo shell not in mongo compass

Few commands to check after download od mango shell:

Command	Expected Output	Notes
show dbs	admin 40.00 KiB config 72.00 KiB db 128.00 KiB local 40.00 KiB	All Databases are shown
use db	switched to db db	Connect and use db
show collections	Students	Show all tables
db.foo.insert({"bar" : "baz"})		Insert a record to collection. Create Collection if not exists

Command	Notes
db.foo.batchInsert([{"_id" : 0}, {"_id" : 1}, {"_id" : 2}])	Insert more than one document
db.foo.find()	Print all rows
db.foo.remove()	Remove foo table

❖ **Key points**

- **Document:** A record in MongoDB is a document and are stored in BSON (Binary JSON) format, which allows for a rich set of data types and structures.
- **Collections:** A collection is a group of documents. MongoDB automatically creates the collections when the first document is inserted if it does not already exist.
- **Database:** A database is a container for collections.
- **Datatype:** each document will be in JSON format which will be as follows. Where each attributes inside can be of multiple data types.

```
{
    "name" : "John Doe",
    "address" : {
        "street" : "123 Park Street",
        "city" : "Anytown",
        "state" : "NY"
    }
}
```

[A database contains a set of collections each collection contains a set of documents]

❖ **AND Operator:**

```
db> db.stu.find({
... $and:[
... {home_city:"City 3"},
... {blood_group:"B+"}
... ]
... })
```

Let' see the output:


```
{
  _id: ObjectId('665759022abe60278b88a01b'),
  name: 'Student 165',
  age: 20,
  courses: "['English', 'History', 'Mathematics', 'Computer Science']",
  gpa: 2.92,
  home_city: 'City 3',
  blood_group: 'B+',
  is_hotel_resident: true
},
{
  _id: ObjectId('665759022abe60278b88a167'),
  name: 'Student 237',
  age: 19,
  courses: "['Physics', 'Mathematics', 'English', 'Computer Science']",
  gpa: 2.65,
  home_city: 'City 3',
  blood_group: 'B+',
  is_hotel_resident: false
},
```


Here, the $and operator checks for students belonging to "City 3" and having a blood group "B+" in that specified home city.

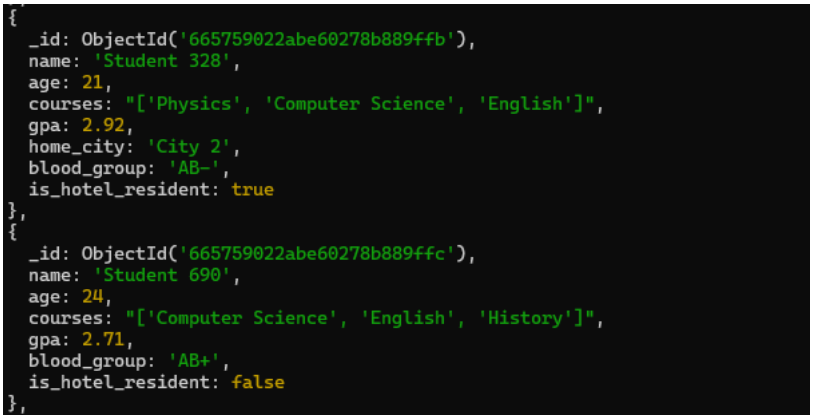
```
db> db.stu.find({ $and: [ { home_city: "City 3" }, {blood_group:"B+"} ] }).count()
5
db>
```

Here , only 5 students from City 3 having a blood group "B+"

❖ **OR:**

```
// Find all students who are hotel residents OR have a GPA less than 3.
db.students.find({
  $or: [
    { is_hotel_resident: true },
    { gpa: { $lt: 3.0 } }
  ]
});
```

Let' see the output:



Here the $or operator checks for students either belonging to "hotel resident" or checks for student having a "gpa less than 3.0"

```
db> db.stu.find({ $or: [ { is_hotel_resident: true }, { gpa: { $lt: 3.0 } }] }).count()
374
db>
```

Here the output of 374 students having either gpa less than 3.0 or present in hotel resident.