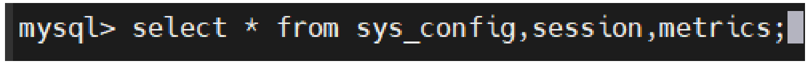
TASK DB1

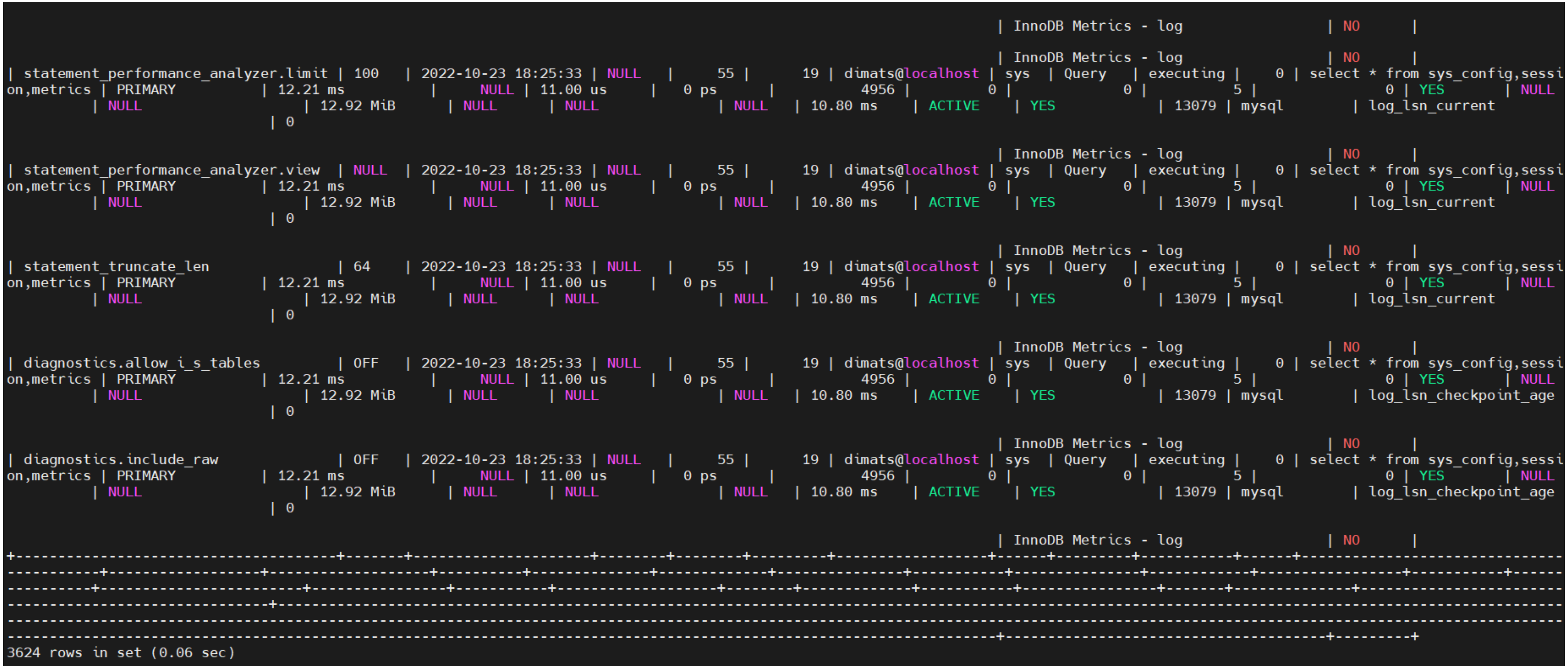
TSYKALENKO DMYTRO

PART 1

Select a subject area and describe the database schema, (minimum 3 tables)



```
mysql> select * from sys_config,session,metrics;
```



```
                                                                                                                          | InnoDB Metrics - log                 | NO       |

                                                                                                                          | InnoDB Metrics - log                 | NO       |
| statement_performance_analyzer.limit | 100    | 2022-10-23 18:25:33 | NULL     |       55 |       19 | dimats@localhost | sys   | Query    | executing |     0 | select * from sys_config,sessi
on,metrics | PRIMARY           | 12.21 ms           |          NULL | 11.00 us      |    0 ps          |             4956 |               0 |               0 |             5 |          0 | YES           | NULL
          | NULL                     | 12.92 MiB       | NULL       | NULL                | NULL     | 10.80 ms      | ACTIVE     | YES                | 13079 | mysql          | log_lsn_current
                                | 0

                                                                                                                          | InnoDB Metrics - log                 | NO       |
| statement_performance_analyzer.view  | NULL   | 2022-10-23 18:25:33 | NULL     |       55 |       19 | dimats@localhost | sys   | Query    | executing |     0 | select * from sys_config,sessi
on,metrics | PRIMARY           | 12.21 ms           |          NULL | 11.00 us      |    0 ps          |             4956 |               0 |               0 |             5 |          0 | YES           | NULL
          | NULL                     | 12.92 MiB       | NULL       | NULL                | NULL     | 10.80 ms      | ACTIVE     | YES                | 13079 | mysql          | log_lsn_current
                                | 0

                                                                                                                          | InnoDB Metrics - log                 | NO       |
| statement_truncate_len               | 64     | 2022-10-23 18:25:33 | NULL     |       55 |       19 | dimats@localhost | sys   | Query    | executing |     0 | select * from sys_config,sessi
on,metrics | PRIMARY           | 12.21 ms           |          NULL | 11.00 us      |    0 ps          |             4956 |               0 |               0 |             5 |          0 | YES           | NULL
          | NULL                     | 12.92 MiB       | NULL       | NULL                | NULL     | 10.80 ms      | ACTIVE     | YES                | 13079 | mysql          | log_lsn_current
                                | 0

                                                                                                                          | InnoDB Metrics - log                 | NO       |
| diagnostics.allow_i_s_tables         | OFF    | 2022-10-23 18:25:33 | NULL     |       55 |       19 | dimats@localhost | sys   | Query    | executing |     0 | select * from sys_config,sessi
on,metrics | PRIMARY           | 12.21 ms           |          NULL | 11.00 us      |    0 ps          |             4956 |               0 |               0 |             5 |          0 | YES           | NULL
          | NULL                     | 12.92 MiB       | NULL       | NULL                | NULL     | 10.80 ms      | ACTIVE     | YES                | 13079 | mysql          | log_lsn_checkpoint_age
                                | 0

                                                                                                                          | InnoDB Metrics - log                 | NO       |
| diagnostics.include_raw              | OFF    | 2022-10-23 18:25:33 | NULL     |       55 |       19 | dimats@localhost | sys   | Query    | executing |     0 | select * from sys_config,sessi
on,metrics | PRIMARY           | 12.21 ms           |          NULL | 11.00 us      |    0 ps          |             4956 |               0 |               0 |             5 |          0 | YES           | NULL
          | NULL                     | 12.92 MiB       | NULL       | NULL                | NULL     | 10.80 ms      | ACTIVE     | YES                | 13079 | mysql          | log_lsn_checkpoint_age
                                | 0

                                                                                                                          | InnoDB Metrics - log                 | NO       |
+--------------------------------------+--------+---------------------+----------+----------+----------+------------------+-------+----------+-----------+-------+-------------------------------
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--------------------------------------------------------------------------------------------------------------------------+--------------------------------------+----------+
3624 rows in set (0.06 sec)
```
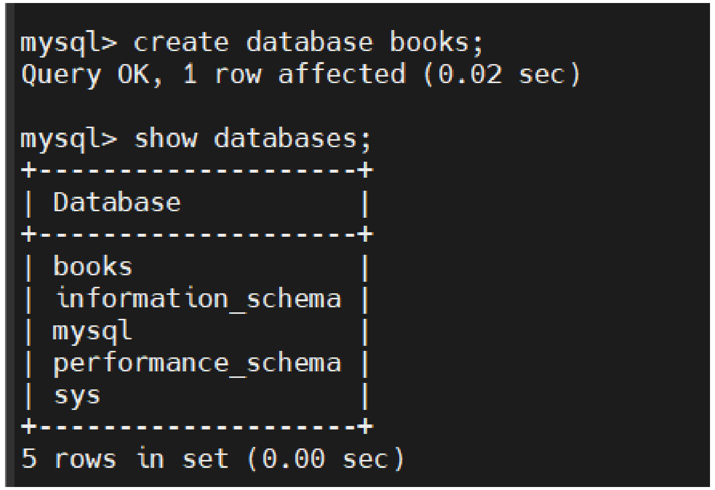
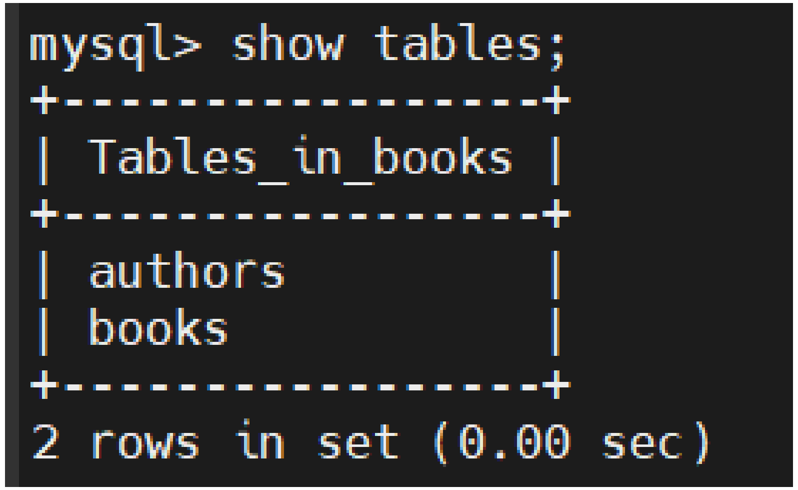

Create a database on the server through the console.



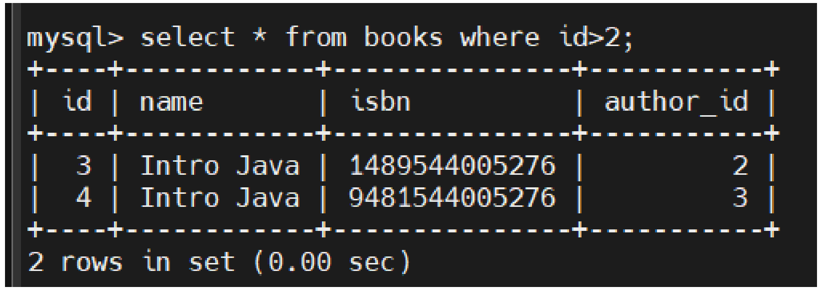
```
mysql> create database books;
Query OK, 1 row affected (0.02 sec)

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| books              |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.00 sec)
```

Fill in tables.

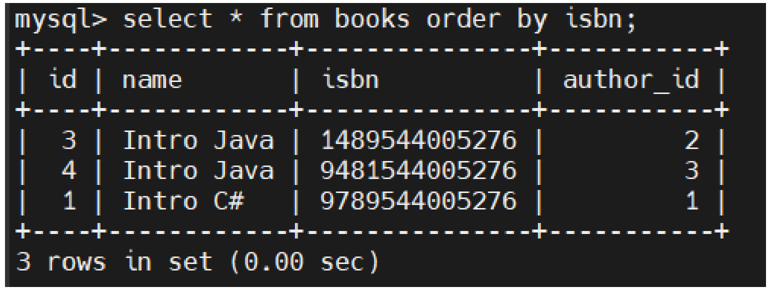


```
mysql> show tables;
+-----------------+
| Tables_in_books |
+-----------------+
| authors         |
| books           |
+-----------------+
2 rows in set (0.00 sec)
```

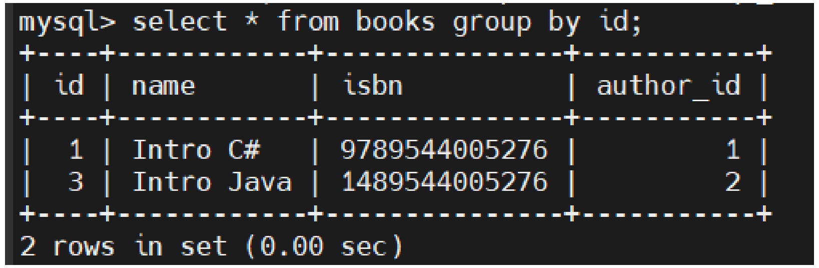
. Construct and execute SELECT operator with WHERE, GROUP BY and ORDER BY.



```
mysql> select * from books where id>2;
+----+------------+---------------+-----------+
| id | name       | isbn          | author_id |
+----+------------+---------------+-----------+
|  3 | Intro Java | 1489544005276 |         2 |
|  4 | Intro Java | 9481544005276 |         3 |
+----+------------+---------------+-----------+
2 rows in set (0.00 sec)
```



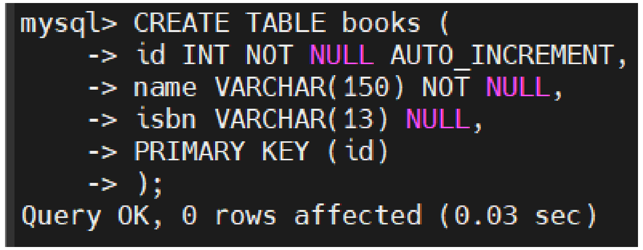
```
mysql> select * from books order by isbn;
+----+------------+---------------+-----------+
| id | name       | isbn          | author_id |
+----+------------+---------------+-----------+
|  3 | Intro Java | 1489544005276 |         2 |
|  4 | Intro Java | 9481544005276 |         3 |
|  1 | Intro C#   | 9789544005276 |         1 |
+----+------------+---------------+-----------+
3 rows in set (0.00 sec)
```



```
mysql> select * from books group by id;
+----+------------+---------------+-----------+
| id | name       | isbn          | author_id |
+----+------------+---------------+-----------+
|  1 | Intro C#   | 9789544005276 |         1 |
|  3 | Intro Java | 1489544005276 |         2 |
+----+------------+---------------+-----------+
2 rows in set (0.00 sec)
```

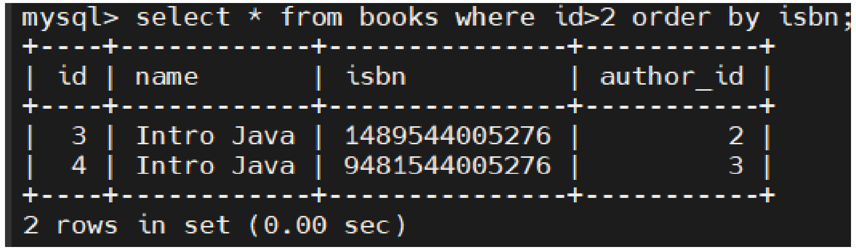
Execute other different SQL queries DDL, DML, DCL.

DDL



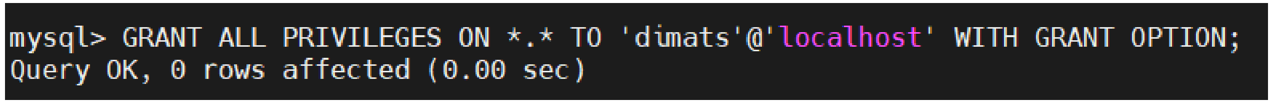
```
mysql> CREATE TABLE books (
    -> id INT NOT NULL AUTO_INCREMENT,
    -> name VARCHAR(150) NOT NULL,
    -> isbn VARCHAR(13) NULL,
    -> PRIMARY KEY (id)
    -> );
Query OK, 0 rows affected (0.03 sec)
```

DML



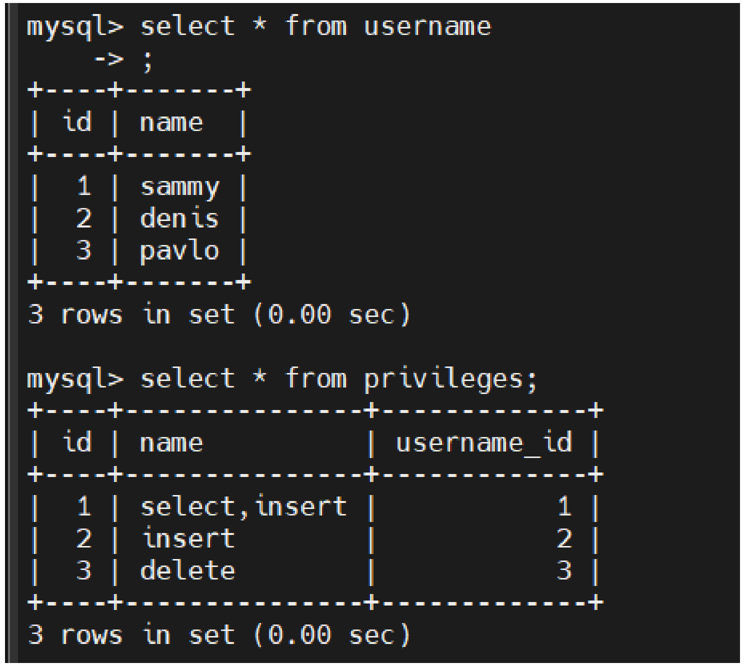
```
mysql> select * from books where id>2 order by isbn;
+----+------------+---------------+-----------+
| id | name       | isbn          | author_id |
+----+------------+---------------+-----------+
|  3 | Intro Java | 1489544005276 |         2 |
|  4 | Intro Java | 9481544005276 |         3 |
+----+------------+---------------+-----------+
2 rows in set (0.00 sec)
```

DCL



```
mysql> GRANT ALL PRIVILEGES ON *.* TO 'dimats'@'localhost' WITH GRANT OPTION;
Query OK, 0 rows affected (0.00 sec)
```

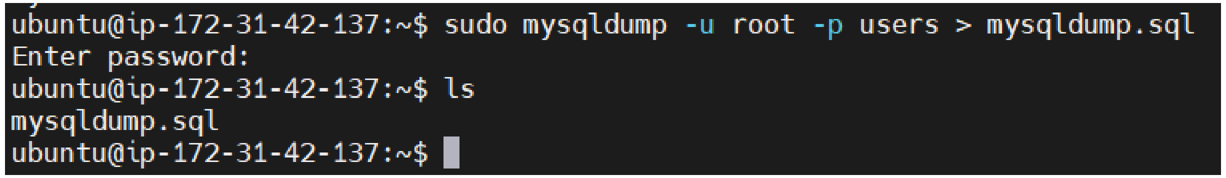
Create a database of new users with different privileges.
Connect to the database as a new user and verify that the
privileges allow or deny certain actions



```
mysql> select * from username
    -> ;
+----+-------+
| id | name  |
+----+-------+
|  1 | sammy |
|  2 | denis |
|  3 | pavlo |
+----+-------+
3 rows in set (0.00 sec)

mysql> select * from privileges;
+----+---------------+-------------+
| id | name          | username_id |
+----+---------------+-------------+
|  1 | select,insert |           1 |
|  2 | insert        |           2 |
|  3 | delete        |           3 |
+----+---------------+-------------+
3 rows in set (0.00 sec)
```

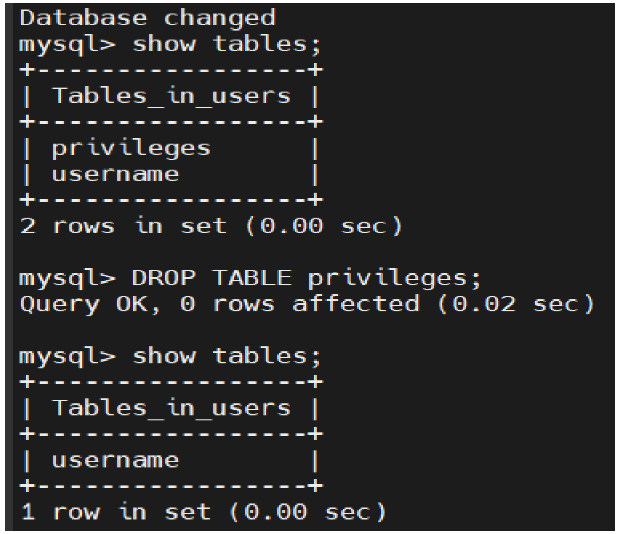
Part 2

Make backup of your database.



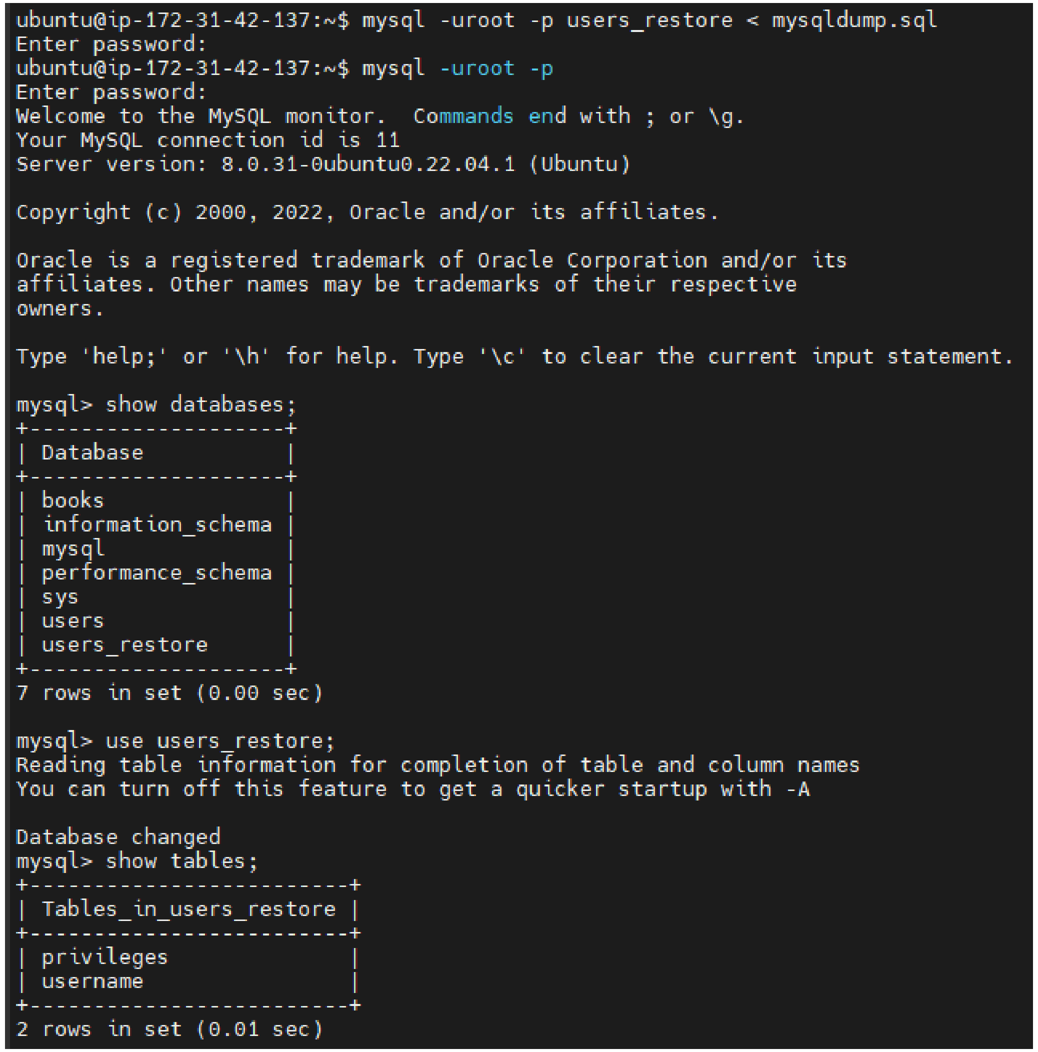
```
ubuntu@ip-172-31-42-137:~$ sudo mysqldump -u root -p users > mysqldump.sql
Enter password:
ubuntu@ip-172-31-42-137:~$ ls
mysqldump.sql
ubuntu@ip-172-31-42-137:~$
```

Delete the table and/or part of the data in the table.



```
Database changed
mysql> show tables;
+-----------------+
| Tables_in_users |
+-----------------+
| privileges      |
| username        |
+-----------------+
2 rows in set (0.00 sec)

mysql> DROP TABLE privileges;
Query OK, 0 rows affected (0.02 sec)

mysql> show tables;
+-----------------+
| Tables_in_users |
+-----------------+
| username        |
+-----------------+
1 row in set (0.00 sec)
```

Restore your database.



```
ubuntu@ip-172-31-42-137:~$ mysql -uroot -p users_restore < mysqldump.sql
Enter password:
ubuntu@ip-172-31-42-137:~$ mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 8.0.31-0ubuntu0.22.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| books              |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
| users              |
| users_restore      |
+--------------------+
7 rows in set (0.00 sec)

mysql> use users_restore;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+-------------------------+
| Tables_in_users_restore |
+-------------------------+
| privileges              |
| username                |
+-------------------------+
2 rows in set (0.01 sec)
```
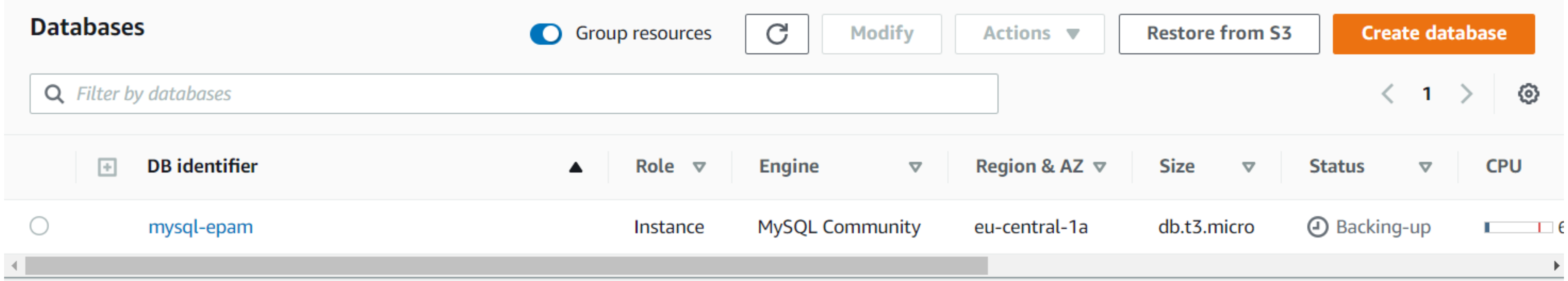
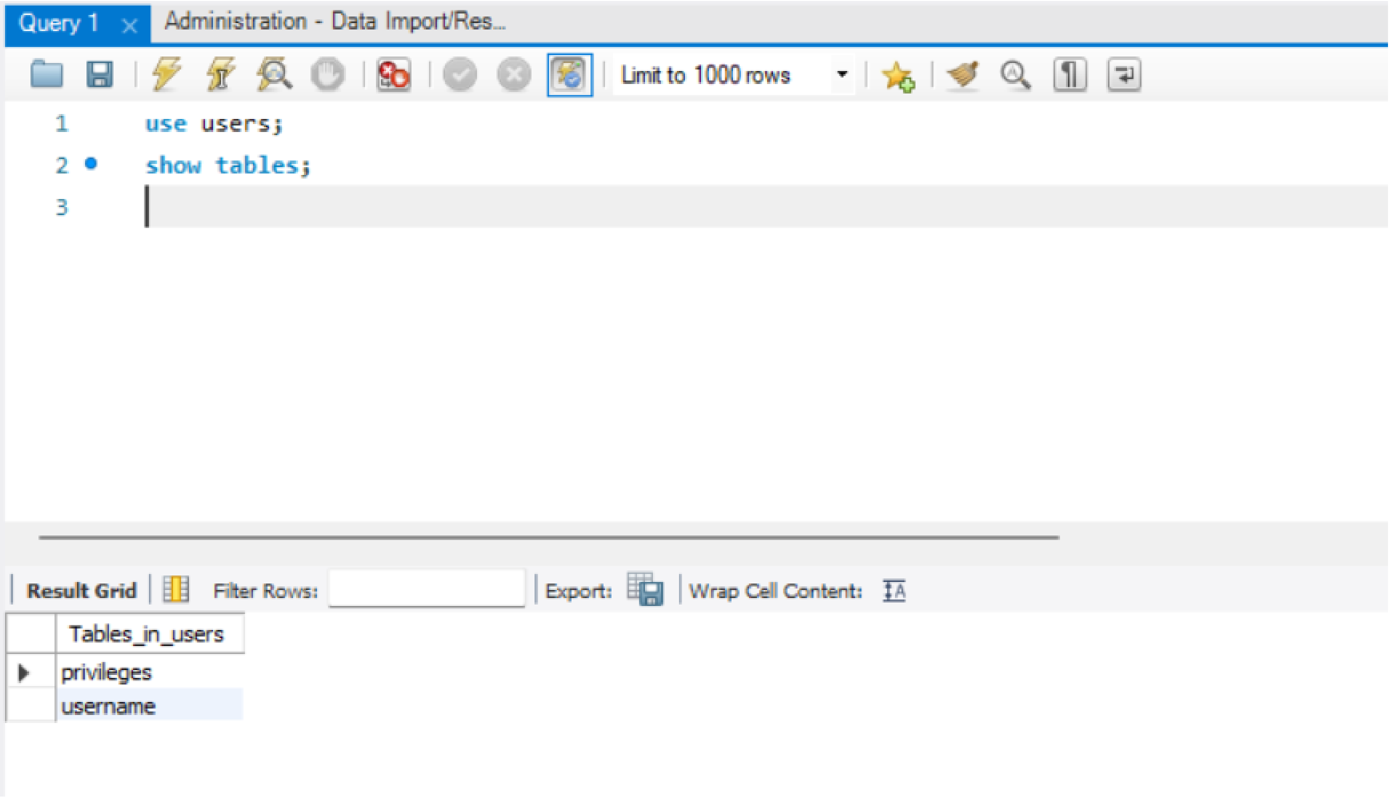

Transfer your local database to RDS AWS.



Databases

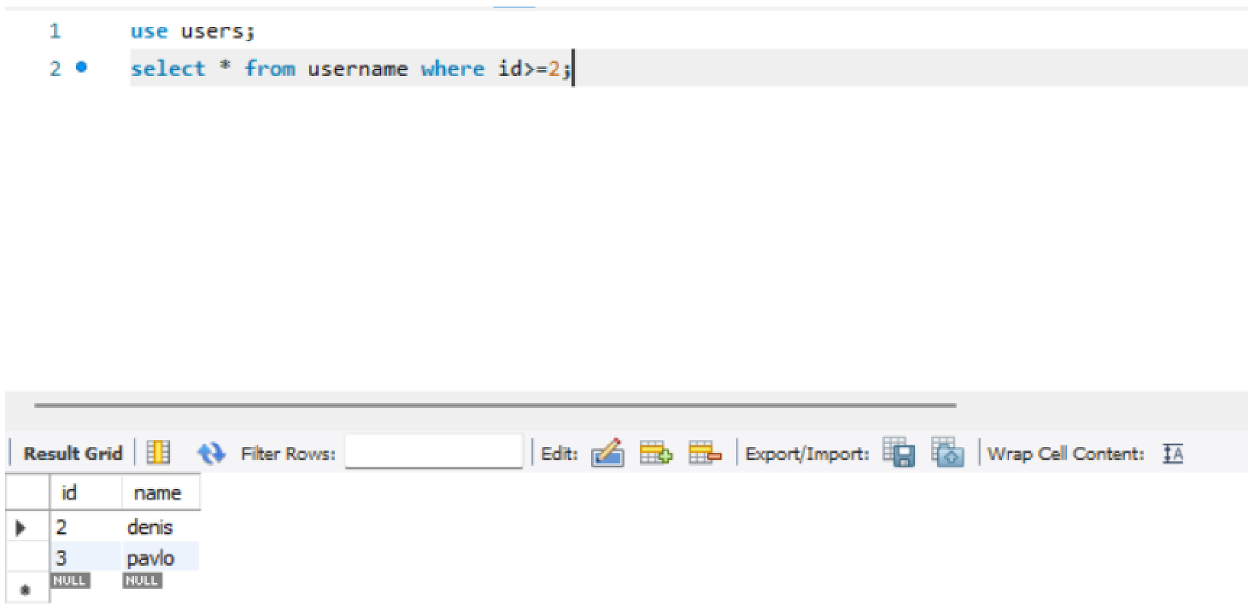
DB identifier	Role	Engine	Region & AZ	Size	Status	CPU
mysql-epam	Instance	MySQL Community	eu-central-1a	db.t3.micro	Backing-up	



```sql
use users;
show tables;
```

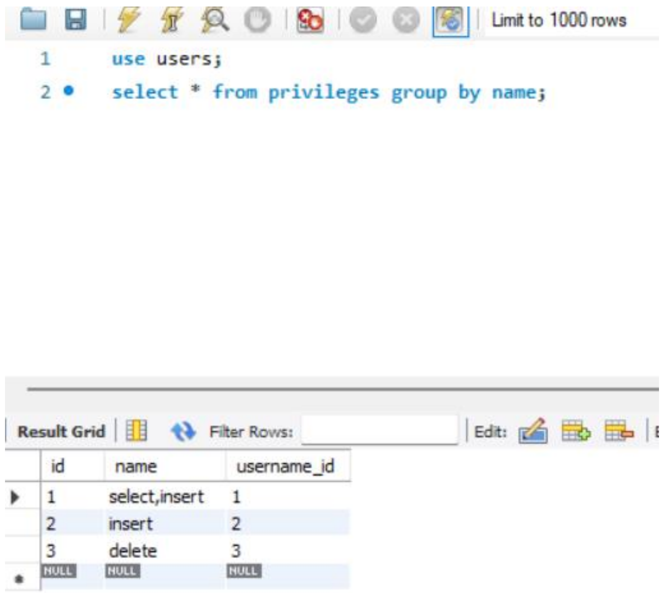
Tables_in_users
privileges
username

Execute SELECT operator similar step 6.



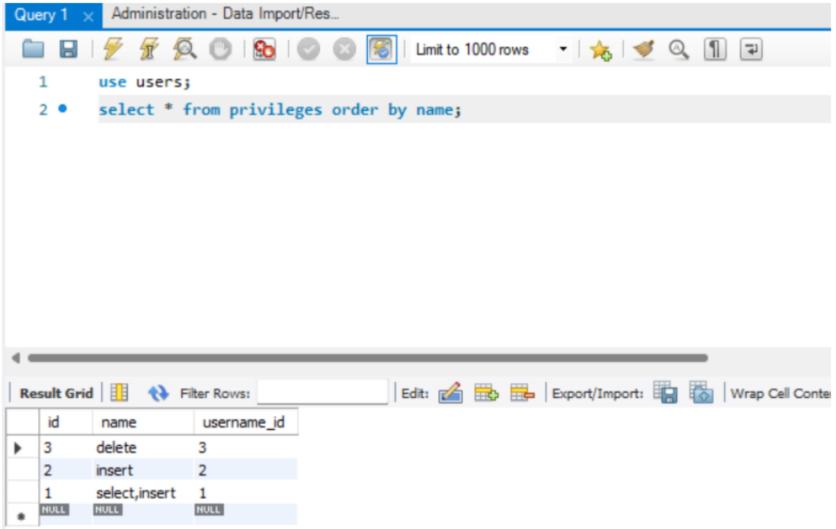
```sql
use users;
select * from username where id>=2;
```

id	name
2	denis
3	pavlo
NULL	NULL



```sql
use users;
select * from privileges group by name;
```

id	name	username_id
1	select,insert	1
2	insert	2
3	delete	3
NULL	NULL	NULL

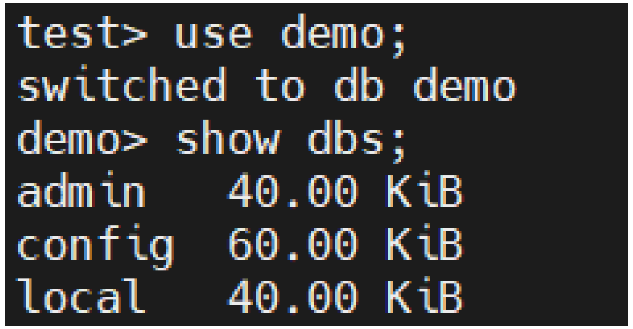


```sql
use users;
select * from privileges order by name;
```

id	name	username_id
3	delete	3
2	insert	2
1	select,insert	1
NULL	NULL	NULL

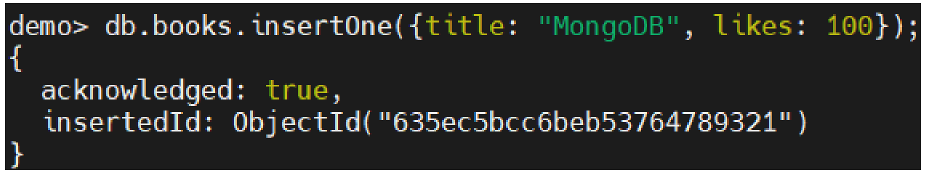
Part 3 – Mongo Db

Create a database.

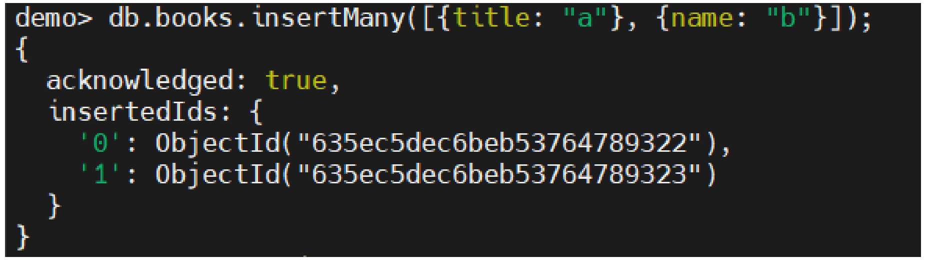


```
test> use demo;
switched to db demo
demo> show dbs;
admin    40.00 KiB
config   60.00 KiB
local    40.00 KiB
```

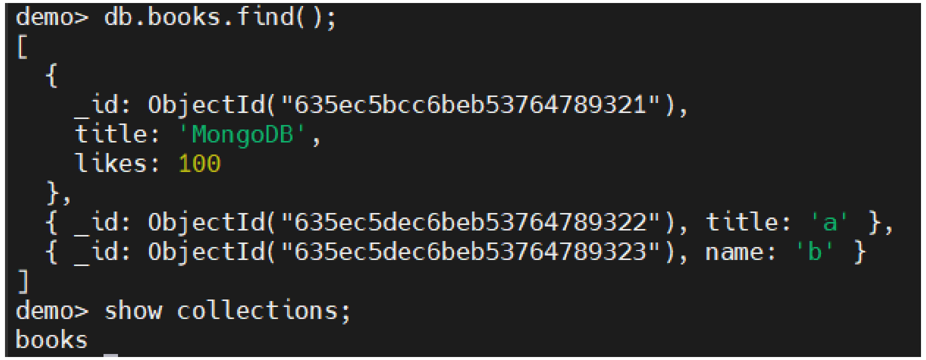
Create a collection.



```
demo> db.books.insertOne({title: "MongoDB", likes: 100});
{
  acknowledged: true,
  insertedId: ObjectId("635ec5bcc6beb53764789321")
}
```

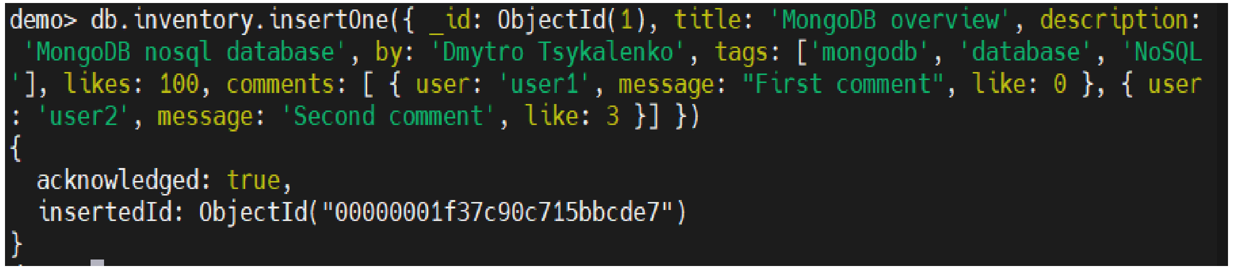


```
demo> db.books.insertMany([{title: "a"}, {name: "b"}]);
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId("635ec5dec6beb53764789322"),
    '1': ObjectId("635ec5dec6beb53764789323")
  }
}
```

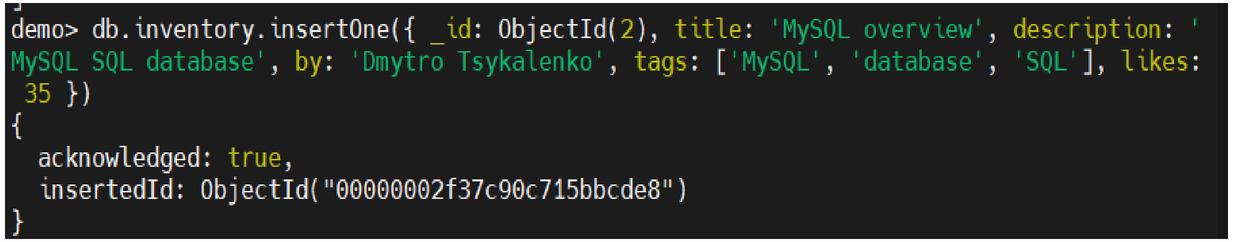


```
demo> db.books.find();
[
  {
    _id: ObjectId("635ec5bcc6beb53764789321"),
    title: 'MongoDB',
    likes: 100
  },
  { _id: ObjectId("635ec5dec6beb53764789322"), title: 'a' },
  { _id: ObjectId("635ec5dec6beb53764789323"), name: 'b' }
]
demo> show collections;
books
```

Create some documents

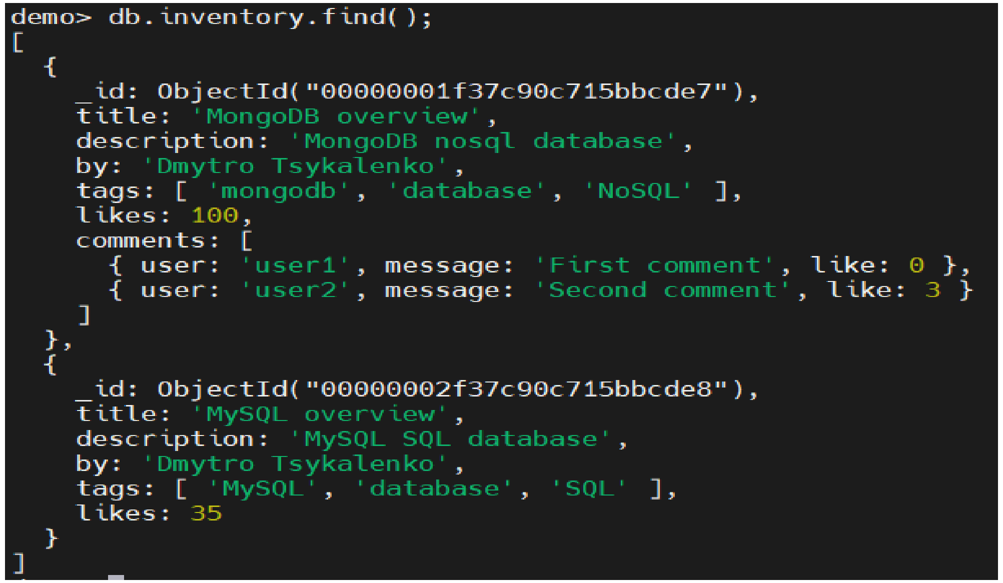


```
demo> db.inventory.insertOne({ _id: ObjectId(1), title: 'MongoDB overview', description:
 'MongoDB nosql database', by: 'Dmytro Tsykalenko', tags: ['mongodb', 'database', 'NoSQL
'], likes: 100, comments: [ { user: 'user1', message: "First comment", like: 0 }, { user
: 'user2', message: 'Second comment', like: 3 }] })
{
  acknowledged: true,
  insertedId: ObjectId("00000001f37c90c715bbcde7")
}
```

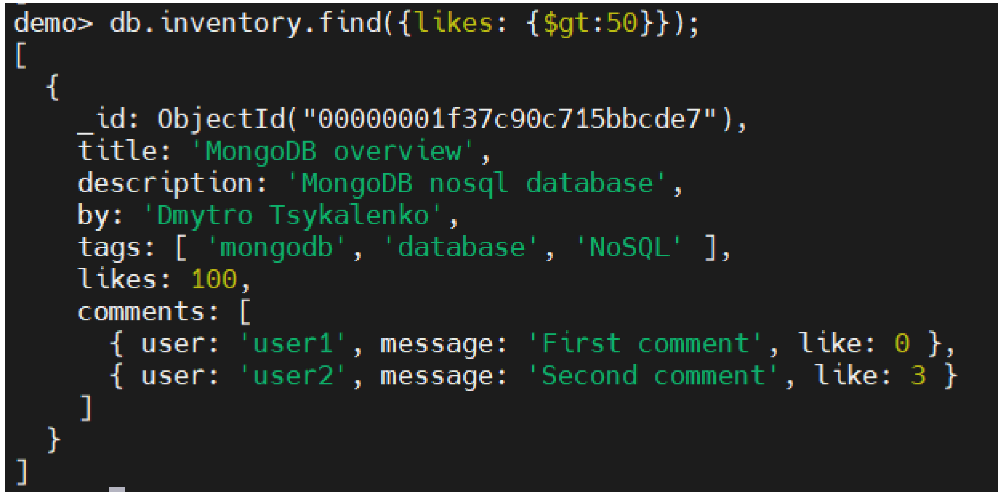


```
demo> db.inventory.insertOne({ _id: ObjectId(2), title: 'MySQL overview', description: '
MySQL SQL database', by: 'Dmytro Tsykalenko', tags: ['MySQL', 'database', 'SQL'], likes:
 35 })
{
  acknowledged: true,
  insertedId: ObjectId("00000002f37c90c715bbcde8")
}
```

Use find() to list documents out.



```
demo> db.inventory.find();
[
  {
    _id: ObjectId("00000001f37c90c715bbcde7"),
    title: 'MongoDB overview',
    description: 'MongoDB nosql database',
    by: 'Dmytro Tsykalenko',
    tags: [ 'mongodb', 'database', 'NoSQL' ],
    likes: 100,
    comments: [
      { user: 'user1', message: 'First comment', like: 0 },
      { user: 'user2', message: 'Second comment', like: 3 }
    ]
  },
  {
    _id: ObjectId("00000002f37c90c715bbcde8"),
    title: 'MySQL overview',
    description: 'MySQL SQL database',
    by: 'Dmytro Tsykalenko',
    tags: [ 'MySQL', 'database', 'SQL' ],
    likes: 35
  }
]
```



```
demo> db.inventory.find({likes: {$gt:50}});
[
  {
    _id: ObjectId("00000001f37c90c715bbcde7"),
    title: 'MongoDB overview',
    description: 'MongoDB nosql database',
    by: 'Dmytro Tsykalenko',
    tags: [ 'mongodb', 'database', 'NoSQL' ],
    likes: 100,
    comments: [
      { user: 'user1', message: 'First comment', like: 0 },
      { user: 'user2', message: 'Second comment', like: 3 }
    ]
  }
]
```