

This file is my homework with Databases MySql and MongoDB

PART 1

1. **Download** MySQL server for your OS on VM.

2. Install MySQL server on VM.

MySQL on VM (CentOS 8)

sudo yum install mysql

standard questions and answers

1. Open 3306 port

sudo iptables -A INPUT -p tcp --destination-port 3306 -j ACCEPT

2. Add rule for firewall

sudo firewall-cmd --permanent --zone=public --add-port=3306/tcp

sudo firewall-cmd --reload

3. Create user for remote access (or another DB)

create user 'user_remote'@'%' IDENTIFIED BY '12345'

4. Grant privileges

grant all ON *.* to 'user_remote'@'%'

flush privileges

5. Add|change mysql-server.cnf

sudo nano /etc/my.cnf.d/ mysql-server.cnf

add/change:

[mysqld]

bind_address = 0.0.0.0 (listen all interfaces)

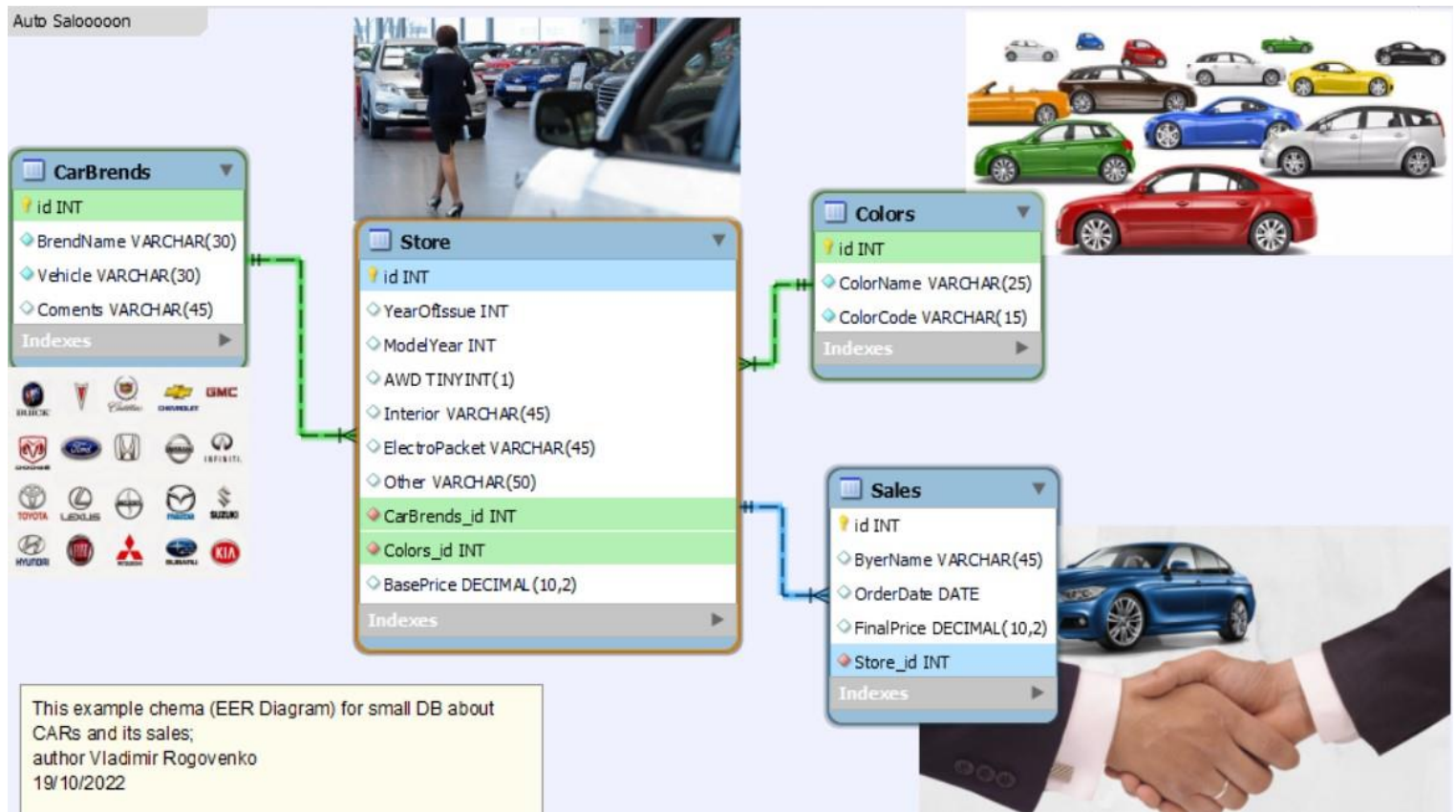
sudo systemctl restart mysqld.service

After that I can remote connect to DB, for example MySQL WorkBanch on Win or other VM.

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



Relations:



4. Create a database on the server through the console.

```
mysql> show databases
→ ;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| new_schema |
| performance_schema |
| sys |
| test |
+-----+
6 rows in set (0.03 sec)

mysql> create database CarsSaloon
→ ;
Query OK, 1 row affected (0.02 sec)

mysql> use carssaloon;
ERROR 1049 (42000): Unknown database 'carssaloon'
mysql> use CarsSaloon;
Database changed
mysql> show databases;
+-----+
| Database |
+-----+
| CarsSaloon |
| information_schema |
| mysql |
| new_schema |
| performance_schema |
| sys |
| test |
+-----+
7 rows in set (0.01 sec)

mysql> █
```

```
mysql> CREATE TABLE IF NOT EXISTS Store (
→ id INT NOT NULL AUTO_INCREMENT,
→ YearOfIssue INT NULL,
→ ModelYear INT NULL,
→ AWD TINYINT(1) NULL,
→ Interior VARCHAR(45) NULL,
→ ElectroPacket VARCHAR(45) NULL,
→ Other VARCHAR(50) NULL,
→ CarBrends_id INT NOT NULL,
→ Colors_id INT NOT NULL,
→ BasePrice DECIMAL(10,2) NULL,
→ PRIMARY KEY (id),
→ INDEX fk_Store_CarBrends_idx (CarBrends_id ASC) VISIBLE,
→ INDEX fk_Store_Colors1_idx (Colors_id ASC) VISIBLE,
→ CONSTRAINT fk_Store_CarBrends
→ FOREIGN KEY (CarBrends_id)
→ REFERENCES CarBrends (id)
→ ON DELETE NO ACTION
→ ON UPDATE NO ACTION,
→ CONSTRAINT fk_Store_Colors1
→ FOREIGN KEY (Colors_id)
→ REFERENCES Colors (id)
→ ON DELETE NO ACTION
→ ON UPDATE NO ACTION);
```

Query OK, 0 rows affected, 1 warning (0.03 sec)

```
mysql> CREATE TABLE IF NOT EXISTS CarBrends (
→ id INT NOT NULL AUTO_INCREMENT,
→ BrendName VARCHAR(30) NOT NULL,
→ Vehicle VARCHAR(30) NOT NULL,
→ Coments VARCHAR(45) NULL,
→ PRIMARY KEY (id));
```

Query OK, 0 rows affected (0.03 sec)

```
mysql> CREATE TABLE IF NOT EXISTS Sales (
mysql> CREATE TABLE IF NOT EXISTS Sales (
→ id INT NOT NULL AUTO_INCREMENT,
→ ByerName VARCHAR(45) NULL DEFAULT 'Unknown byer',
→ OrderDate DATE NULL,
→ FinalPrice DECIMAL(10,2) NULL,
→ Store_id INT NOT NULL,
→ PRIMARY KEY (id),
→ INDEX fk_Sales_Store1_idx (Store_id ASC) VISIBLE,
→ CONSTRAINT fk_Sales_Store1
→ FOREIGN KEY (Store_id)
→ REFERENCES Store (id)
→ ON DELETE NO ACTION
→ ON UPDATE NO ACTION);
```

Query OK, 0 rows affected (0.04 sec)

```
mysql> show tables;
```

```
+-----+
| Tables_in_CarsSaloon |
+-----+
| CarBrends             |
| Colors                |
| Sales                 |
| Store                 |
+-----+
```

4 rows in set (0.00 sec)

5. Fill in tables.

```
mysql> INSERT INTO CarBrends (BrendName, Vehicle, Coments) VALUES ('Jeep Cherokee', '2.4 Pentastar', 'latitude');
INSERT INTO CarBrends (BrendName, Vehicle, Coments) VALUES ('Mazds CX-7', '3.1', 'comfort');Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CarBrends (BrendName, Vehicle, Coments) VALUES ('Jeep Cherokee', '3.2 Pentastar', 'Limited');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CarBrends (BrendName, Vehicle) VALUES ('Jeep Compas', '2.4 Pen');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO CarBrends (BrendName, Vehicle, Coments) VALUES ('Lanos', '1.5', 'SE');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CarBrends (BrendName, Vehicle, Coments) VALUES ('Lanos', '1.4', 'S');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO CarBrends (BrendName, Vehicle, Coments) VALUES ('Lanos', '1.6', 'SX');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO CarBrends (BrendName, Vehicle, Coments) VALUES ('Mazda CX-5', '2.4', 'lux');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CarBrends (BrendName, Vehicle, Coments) VALUES ('Mazds CX-7', '3.1', 'comfort');
Query OK, 1 row affected (0.00 sec)

mysql> select * from CarBrends;
+-----+-----+-----+-----+
| id | BrendName | Vehicle | Coments |
+-----+-----+-----+-----+
| 1 | Jeep Cherokee | 2.4 Pentastar | latitude |
| 2 | Jeep Cherokee | 3.2 Pentastar | Limited |
| 3 | Jeep Compas | 2.4 Pen | NULL |
| 4 | Lanos | 1.5 | SE |
| 5 | Lanos | 1.4 | S |
| 6 | Lanos | 1.6 | SX |
| 7 | Mazda CX-5 | 2.4 | lux |
| 8 | Mazds CX-7 | 3.1 | comfort |
+-----+-----+-----+-----+
8 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Sales (ByerName, OrderDate, FinalPrice, Store_id) VALUES ('Willam Brain', '18.10.2022', '12900', '13');
Query OK, 1 row affected, 1 warning (0.02 sec)

mysql> INSERT INTO Sales (ByerName, OrderDate, FinalPrice, Store_id) VALUES ('Vladimir', '17.10.2022', '24000.50', '14');
Query OK, 1 row affected, 1 warning (0.01 sec)

mysql> INSERT INTO Sales (ByerName, OrderDate, FinalPrice, Store_id) VALUES ('Mykola', '18.10.2022', '15610', '11');
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> INSERT INTO Sales (ByerName, OrderDate, FinalPrice, Store_id) VALUES ('Stepan', '19.10.2022', '18000', '10');
Query OK, 1 row affected, 1 warning (0.01 sec)

mysql> INSERT INTO Sales (ByerName, OrderDate, FinalPrice, Store_id) VALUES ('Nikita', '19.10.2022', '12905', '13');
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> INSERT INTO Sales (ByerName, OrderDate, FinalPrice, Store_id) VALUES ('Fedor', '18.10.2022', '23000', '12');
Query OK, 1 row affected, 1 warning (0.01 sec)

mysql> select * from Sales
→ ;
+-----+-----+-----+-----+-----+
| id | ByerName | OrderDate | FinalPrice | Store_id |
+-----+-----+-----+-----+-----+
| 1 | Sohn Smith | 2019-10-20 | 15600.00 | 11 |
| 2 | Willam Brain | 2018-10-20 | 12900.00 | 13 |
| 3 | Vladimir | 2017-10-20 | 24000.50 | 14 |
| 4 | Mykola | 2018-10-20 | 15610.00 | 11 |
| 5 | Stepan | 2019-10-20 | 18000.00 | 10 |
| 6 | Nikita | 2019-10-20 | 12905.00 | 13 |
| 7 | Fedor | 2018-10-20 | 23000.00 | 12 |
+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Store (YearOfIssue, ModelYear, AWD, Interior, ElectroPacket, Other, CarBrends_id, Colors_id, BasePrice) VALUES ('2021', '2021', '0', 'elegant skin', 'radio, Automatic Headlamps', 'Accent/Body Color Fascias', '3', '5', '15205.50');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Store (YearOfIssue, ModelYear, AWD, Interior, ElectroPacket, Other, CarBrends_id, Colors_id, BasePrice) VALUES ('2018', '2017', '1', 'Bright White Clear Coat', '8.4\" Touchscreen Display', '18X7.0 Gloss Blk 5-Spoke Alum Wheels', '2', '4', '22310.00');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Store (YearOfIssue, ModelYear, AWD, Interior, ElectroPacket, Other, CarBrends_id, Colors_id, BasePrice) VALUES ('2021', '2020', '0', 'Black and wite', 'Air Cond ATC w/Dual Zone Control', 'Power 8-Way Driver Seat', '4', '2', '13000.00');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Store (YearOfIssue, ModelYear, AWD, Interior, ElectroPacket, Other, CarBrends_id, Colors_id, BasePrice) VALUES ('2022', '2020', '0', 'so-so', 'nothing', 'something', '7', '4', '24000.20');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Store (YearOfIssue, ModelYear, AWD, Interior, ElectroPacket, Other, CarBrends_id, Colors_id) VALUES ('2021', '2020', '1', 'so2-so3', 'some thing else', '', '3', '2');
Query OK, 1 row affected (0.01 sec)

mysql> select YearOfIssue, ModelYear, AWD, Interior, ElectroPacket, CarBrends_id, Colors_id from Store;
+-----+-----+-----+-----+-----+-----+-----+
| YearOfIssue | ModelYear | AWD | Interior | ElectroPacket | CarBrends_id | Colors_id |
+-----+-----+-----+-----+-----+-----+-----+
| 2017 | 2018 | 1 | lux | 8.4 monitor, parktronic, rear cam, | 1 | 2 |
| 2021 | 2021 | 0 | elegant skin | radio, Automatic Headlamps | 3 | 5 |
| 2018 | 2017 | 1 | Bright White Clear Coat | 8.4\" Touchscreen Display | 2 | 4 |
| 2021 | 2020 | 0 | Black and wite | Air Cond ATC w/Dual Zone Control | 4 | 2 |
| 2022 | 2020 | 0 | so-so | nothing | 7 | 4 |
| 2021 | 2020 | 1 | so2-so3 | some thing else | 3 | 2 |
+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.01 sec)
```

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

```
mysql> SELECT
→ s.ByerName, s.OrderDate, s.FinalPrice, st.BasePrice,s.FinalPrice- st.BasePrice as gesheft, cb.BrendName
→ FROM
→ Sales AS s,
→ CarBrends AS cb,
→ Store AS st
→ WHERE
→ cb.id = st.CarBrends_id and s.Store_id=st.id;
```

ByerName	OrderDate	FinalPrice	BasePrice	gesheft	BrendName
Stepan	2019-10-20	18000.00	17600.00	400.00	Jeep Cherokee
Sohn Smith	2019-10-20	15600.00	15205.50	394.50	Jeep Compas
Mykola	2018-10-20	15610.00	15205.50	404.50	Jeep Compas
Fedor	2018-10-20	23000.00	22310.00	690.00	Jeep Cherokee
Willam Brain	2018-10-20	12900.00	13000.00	-100.00	Lanos
Nikita	2019-10-20	12905.00	13000.00	-95.00	Lanos
Vladimir	2017-10-20	24000.50	24000.20	0.30	Mazda CX-5

7 rows in set (0.00 sec)

```
mysql> SELECT
→ cb.BrendName, count(s.ByerName) as Quantity_saled_cars
→ FROM
→ Sales AS s,
→ CarBrends AS cb,
→ Store AS st
→ WHERE
→ cb.id = st.CarBrends_id and s.Store_id=st.id
→ group by cb.BrendName
→ order by Quantity_saled_cars desc;
```

BrendName	Quantity_saled_cars
Jeep Cherokee	2
Jeep Compas	2
Lanos	2
Mazda CX-5	1

4 rows in set (0.00 sec)

7. Execute other different SQL queries DDL, DML, DCL.

```
mysql> UPDATE Sales SET OrderDate = '2022-10-18' WHERE (id = '2');
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE Sales SET OrderDate = '2022-10-17' WHERE (id = '3');
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE Sales SET OrderDate = '2022-10-18' WHERE (id = '4');
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE Sales SET OrderDate = '2022-10-19' WHERE (id = '5');
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE Sales SET OrderDate = '2022-10-19' WHERE (id = '6');
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE Sales SET OrderDate = '2022-10-18' WHERE (id = '7');
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```



```
mysql> rename table sales_backup2 to Sales_backup2;
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> show tables;
```

```
+-----+
| Tables_in_CarsSaloon |
+-----+
| CarBrends            |
| Colors               |
| Sales                |
| Sales_backup2        |
| Store                |
+-----+
```

```
5 rows in set (0.00 sec)
```

```
mysql> alter table Sales_backup2 ADD COLUMN ManagerName VARCHAR(40);
```

```
Query OK, 0 rows affected (0.02 sec)
```

```
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> select * from Sales_backup2;
```

```
+-----+-----+-----+-----+-----+-----+
| id | ByerName | OrderDate | FinalPrice | Store_id | ManagerName |
+-----+-----+-----+-----+-----+-----+
| 1 | Sohn Smith | 2022-10-19 | 15600.00 | 11 | NULL |
| 2 | Willam Brain | 2022-10-18 | 12900.00 | 13 | NULL |
| 3 | Vladimir | 2022-10-17 | 24000.50 | 14 | NULL |
| 4 | Mykola | 2022-10-18 | 15610.00 | 11 | NULL |
| 5 | Stepan | 2022-10-19 | 18000.00 | 10 | NULL |
| 6 | Nikita | 2022-10-19 | 12905.00 | 13 | NULL |
| 7 | Fedor | 2022-10-18 | 23000.00 | 12 | NULL |
+-----+-----+-----+-----+-----+-----+
```

```
7 rows in set (0.00 sec)
```

```
mysql> select * from Sales;
```

```
+-----+-----+-----+-----+-----+
| id | ByerName | OrderDate | FinalPrice | Store_id |
+-----+-----+-----+-----+-----+
| 1 | Sohn Smith | 2022-10-19 | 15600.00 | 11 |
| 2 | Willam Brain | 2022-10-18 | 12900.00 | 13 |
| 3 | Vladimir | 2022-10-17 | 24000.50 | 14 |
| 4 | Mykola | 2022-10-18 | 15610.00 | 11 |
| 5 | Stepan | 2022-10-19 | 18000.00 | 10 |
| 6 | Nikita | 2022-10-19 | 12905.00 | 13 |
| 7 | Fedor | 2022-10-18 | 23000.00 | 12 |
+-----+-----+-----+-----+-----+
```

```
7 rows in set (0.00 sec)
```

```
mysql> █
```

```
mysql> show tables;
```

```
+-----+
| Tables_in_CarsSaloon |
+-----+
| CarBrends            |
| Colors               |
| Sales                |
| Sales_backup         |
| Store                |
| sales_backup2        |
+-----+
```

```
6 rows in set (0.01 sec)
```

```
mysql> drop Sales_backup;
```

```
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'Sales_backup' at line 1
```

```
mysql> drop table Sales_backup;
```

```
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> show tables;
```

```
+-----+
| Tables_in_CarsSaloon |
+-----+
| CarBrends            |
| Colors               |
| Sales                |
| Store                |
| sales_backup2        |
+-----+
```

```
5 rows in set (0.00 sec)
```

```
mysql> █
```

8. 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> CREATE USER 'testuser'@'%' IDENTIFIED BY '12345';
Query OK, 0 rows affected (0.02 sec)

mysql> GRANT INSERT, UPDATE, SELECT on CarsSaloon.* TO 'testuser'@'%' WITH GRANT OPTION;
Query OK, 0 rows affected (0.02 sec)

mysql> exit
Bye
[rvv@CentOs8 L1-MySQL]$ mysql -u testuser -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 33
Server version: 8.0.26 Source distribution

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owners.

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

mysql> use CarsSaloon
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> select * from Colors;
+----+-----+-----+
| id | ColorName | ColorCode |
+----+-----+-----+
| 1 | White     | WT01      |
| 2 | Black     | BL003     |
| 3 | Perl Black | PBL03     |
| 4 | Green     | G211      |
| 5 | Brown     | BRR782    |
| 6 | Steel     | StL90     |
| 7 | White-P   | WtP81     |
+----+-----+-----+
7 rows in set (0.02 sec)

mysql> █

mysql> insert INTO Colors (ColorName, ColorCode) VALUES ('Blue', 'BL23');
Query OK, 1 row affected (0.02 sec)

mysql> select * from Colors;
+----+-----+-----+
| id | ColorName | ColorCode |
+----+-----+-----+
| 1 | White     | WT01      |
| 2 | Black     | BL003     |
| 3 | Perl Black | PBL03     |
| 4 | Green     | G211      |
| 5 | Brown     | BRR782    |
| 6 | Steel     | StL90     |
| 7 | White-P   | WtP81     |
| 8 | Blue      | BL23      |
+----+-----+-----+
8 rows in set (0.00 sec)

mysql> delete from Colors where id=8;
ERROR 1142 (42000): DELETE command denied to user 'testuser'@'localhost' for table 'Colors'
mysql> exit
Bye
[rvv@CentOs8 L1-MySQL]$ █
```



```
mysql> REVOKE INSERT on CarsSaloon.* FROM 'testuser'@'%';
Query OK, 0 rows affected (0.00 sec)

mysql> GRANT DELETE on CarsSaloon.* TO 'testuser'@'%' WITH GRANT OPTION;
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> exit
Bye
[rvv@CentOs8 L1-MySQL]$ mysql -u testuser -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 35
Server version: 8.0.26 Source distribution
```

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

```
mysql> use CarsSaloon
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> delete from Colors where id=8;
Query OK, 1 row affected (0.02 sec)
```

```
mysql> insert INTO Colors (ColorName, ColorCode) VALUES ('RED', 'RD3');
ERROR 1142 (42000): INSERT command denied to user 'testuser'@'localhost' for table 'Colors'
mysql> select * from Colors;
```

id	ColorName	ColorCode
1	White	WT01
2	Black	BL003
3	Perl Black	PBL03
4	Green	G211
5	Brown	BRR782
6	Steel	StL90
7	White-P	WtP81

7 rows in set (0.01 sec)

```
mysql> █
```

9. Make a selection from the main table DB MySQL.

```
mysql> select host, user, Insert_priv, Update_priv, Select_priv, Delete_priv from db where user='testuser';
```

host	user	Insert_priv	Update_priv	Select_priv	Delete_priv
%	testuser	N	Y	Y	Y

1 row in set (0.00 sec)

PART 2

10. Make backup of your database.

Create BackUp

```
mysql> use CarsSaloon
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_CarsSaloon |
+-----+
| CarBrends             |
| Colors                |
| Sales                 |
| Sales_backup2         |
| Store                 |
+-----+
5 rows in set (0.01 sec)

mysql> Select * from Sales_backup2;
+-----+-----+-----+-----+-----+-----+
| id | ByerName   | OrderDate | FinalPrice | Store_id | ManagerName |
+-----+-----+-----+-----+-----+-----+
| 1  | Sohn Smith | 2022-10-19 | 15600.00  | 11       | NULL        |
| 2  | Willam Brain | 2022-10-18 | 12900.00  | 13       | NULL        |
| 3  | Vladimir   | 2022-10-17 | 24000.50  | 14       | NULL        |
| 4  | Mykola     | 2022-10-18 | 15610.00  | 11       | NULL        |
| 5  | Stepan     | 2022-10-19 | 18000.00  | 10       | NULL        |
| 6  | Nikita     | 2022-10-19 | 12905.00  | 13       | NULL        |
| 7  | Fedor      | 2022-10-18 | 23000.00  | 12       | NULL        |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.01 sec)

mysql> exit
Bye
[rvv@CentOs8 L1-MySQL]$ mysqldump -u root -p CarsSaloon>CarsSaloon_1_backup.sql;
Enter password:
[rvv@CentOs8 L1-MySQL]$ ls -la *.sql
-rw-rw-r-- 1 rvv rvv 7148 Oct 21 11:23 CarsSaloon_1_backup.sql
-rw-rw-r-- 1 rvv rvv 1622 Oct 19 16:06 CarsSaloon-CreateTables.sql
-rw-rw-r-- 1 rvv rvv 729 Oct 19 16:06 insert_brends.sql
-rw-rw-r-- 1 rvv rvv 629 Oct 19 16:06 insert_colors.sql
-rw-rw-r-- 1 rvv rvv 791 Oct 19 16:06 insert_sales.sql
-rw-rw-r-- 1 rvv rvv 1375 Oct 19 16:06 insert_store.sql
-rw-rw-r-- 1 rvv rvv 253 Oct 19 16:06 select_example1.sql
-rw-rw-r-- 1 rvv rvv 253 Oct 19 16:06 select_group_expmle.sql
[rvv@CentOs8 L1-MySQL]$
```

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

Insert 1 record and Drop table Sales_backup2

```
[rvv@Cent0s8 L1-MySQL]$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 40
Server version: 8.0.26 Source distribution

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

mysql> use CarsSaloon
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> drop table Sales_backup2;
Query OK, 0 rows affected (0.08 sec)

mysql> select * from Colors;
+----+-----+-----+
| id | ColorName | ColorCode |
+----+-----+-----+
| 1 | White | WT01 |
| 2 | Black | BL003 |
| 3 | Perl Black | PBL03 |
| 4 | Green | G211 |
| 5 | Brown | BRR782 |
| 6 | Steel | StL90 |
| 7 | White-P | WtP81 |
+----+-----+-----+
7 rows in set (0.00 sec)

mysql> insert INTO Colors (ColorName, ColorCode) VALUES ('RED', 'RD3');
Query OK, 1 row affected (0.02 sec)

mysql> select * from Colors;
+----+-----+-----+
| id | ColorName | ColorCode |
+----+-----+-----+
| 1 | White | WT01 |
| 2 | Black | BL003 |
| 3 | Perl Black | PBL03 |
| 4 | Green | G211 |
| 5 | Brown | BRR782 |
| 6 | Steel | StL90 |
| 7 | White-P | WtP81 |
| 9 | RED | RD3 |
+----+-----+-----+
8 rows in set (0.00 sec)

mysql> show tables;
+-----+
| Tables_in_CarsSaloon |
+-----+
| CarBrends |
| Colors |
| Sales |
| Store |
+-----+
4 rows in set (0.00 sec)
```


12.Restore your database.

```
[rvv@Cent0s8 L1-MySQL]$ mysql -u root -p CarsSaloon<CarsSaloon_1_backup.sql;
Enter password:
[rvv@Cent0s8 L1-MySQL]$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 44
Server version: 8.0.26 Source distribution

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owners.

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

mysql> use CarsSaloon;
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> select * from Colors;
+-----+-----+-----+
| id | ColorName | ColorCode |
+-----+-----+-----+
| 1 | White | WT01 |
| 2 | Black | BL003 |
| 3 | Perl Black | PBL03 |
| 4 | Green | G211 |
| 5 | Brown | BRR782 |
| 6 | Steel | StL90 |
| 7 | White-P | WtP81 |
+-----+-----+-----+
7 rows in set (0.00 sec)

mysql> show tables;
+-----+
| Tables_in_CarsSaloon |
+-----+
| CarBrends |
| Colors |
| Sales |
| Sales_backup2 |
| Store |
+-----+
5 rows in set (0.00 sec)

mysql> █
```

13. Transfer your local database to RDS AWS.

Create Instance on AWS RDS

The screenshot shows the AWS RDS console for an instance named 'db-free'. The instance is in the 'Available' state. The 'Summary' section shows the DB identifier as 'db-free', CPU usage at 2.77%, and 0 connections. The 'Connectivity & security' section shows the endpoint as 'db-free.crp1z3x7l414.eu-west-3.rds.amazonaws.com', port 3306, and VPC 'vpc-0681400f4488d4061'. The instance is publicly accessible.

Summary			
DB identifier	CPU	Status	Class
db-free	2.77%	Available	db.t3.micro
Role	Current activity	Engine	Region & AZ
Instance	0 Connections	MySQL Community	eu-west-3a

Connectivity & security		
Endpoint & port	Networking	Security
Endpoint db-free.crp1z3x7l414.eu-west-3.rds.amazonaws.com	Availability Zone eu-west-3a	VPC security groups VPC-sec-grp-1 (sg-0f6a418d9d9462dc7)
Port 3306	VPC vpc-0681400f4488d4061	Active
		Publicly accessible

14. Connect to your database.

```
[rvv@CentOs8 L1-MySQL]$ mysql -h db-free.crp1z3x7l414.eu-west-3.rds.amazonaws.com -P 3306 -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 41
Server version: 8.0.28 Source distribution

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affiliates. Other names may be trademarks of their respective
owners.

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

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
4 rows in set (0.05 sec)

mysql> create database CarsSaloon;
Query OK, 1 row affected (0.05 sec)

mysql> exit
Bye
```

Create database (without data). Restore DB from BackUp

```
mysql> create database CarsSaloon;
Query OK, 1 row affected (0.05 sec)

mysql> exit
Bye
[rvv@CentOs8 L1-MySQL]$ mysql -h db-free.crp1z3x7l414.eu-west-3.rds.amazonaws.com -u root -p CarsSaloon<CarsSaloon_1_backup.sql;
Enter password:
[rvv@CentOs8 L1-MySQL]$ mysql -h db-free.crp1z3x7l414.eu-west-3.rds.amazonaws.com -P 3306 -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 44
Server version: 8.0.28 Source distribution

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affiliates. Other names may be trademarks of their respective
owners.

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

mysql> show databases;
+-----+
| Database |
+-----+
| CarsSaloon |
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.05 sec)

mysql> use CarsSaloon;
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_CarsSaloon |
+-----+
| CarBrends |
| Colors |
| Sales |
| Sales_backup2 |
| Store |
+-----+
5 rows in set (0.05 sec)

mysql> █
```

15.Execute SELECT operator similar step 6.

Testing Select

```
mysql> SELECT
→   cb.BrendName, count(s.ByerName) as Quantity_saled_cars
→ FROM
→   Sales AS s,
→   CarBrends AS cb,
→   Store AS st
→ WHERE
→   cb.id = st.CarBrends_id and s.Store_id=st.id
→   group by cb.BrendName
→   order by Quantity_saled_cars desc;
+-----+-----+
| BrendName | Quantity_saled_cars |
+-----+-----+
| Jeep Compas | 2 |
| Lanos | 2 |
| Jeep Cherokee | 2 |
| Mazda CX-5 | 1 |
+-----+-----+
4 rows in set (0.05 sec)

mysql> █
```


16. Create the dump of your database.

Create BackUp DB and show it fragment

```
[rvv@Centos8 L1-MySQL]$ mysqldump -h db-free.crp1z3x7l414.eu-west-3.rds.amazonaws.com -P 3306 -u root -p CarsSaloon>CarsSaloon_AWS_backup_1.sql
Enter password:
Warning: A partial dump from a server that has GTIDs will by default include the GTIDs of all transactions, even those that changed suppressed parts of the database. If you don't want
to restore GTIDs, pass --set-gtid-purged=OFF. To make a complete dump, pass --all-databases --triggers --routines --events.
[rvv@Centos8 L1-MySQL]$ mc

[rvv@Centos8 L1-MySQL]$ cat CarsSaloon_AWS_backup_1.sql | head 15
head: cannot open '15' for reading: No such file or directory
[rvv@Centos8 L1-MySQL]$ cat CarsSaloon_AWS_backup_1.sql | head -15
-- MySQL dump 10.13 Distrib 8.0.26, for Linux (x86_64)
--
-- Host: db-free.crp1z3x7l414.eu-west-3.rds.amazonaws.com    Database: CarsSaloon
--
-- Server version          8.0.28

/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!50503 SET NAMES utf8mb4 */;
/*!40103 SET @OLD_TIME_ZONE=@@TIME_ZONE */;
/*!40103 SET TIME_ZONE='+00:00' */;
/*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;
/*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0 */;
/*!40101 SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='NO_AUTO_VALUE_ON_ZERO' */;
[rvv@Centos8 L1-MySQL]$ ls -la *backup*.sql
-rw-rw-r-- 1 rvv rvv 7148 Oct 21 11:23 CarsSaloon_1_backup.sql
-rw-rw-r-- 1 rvv rvv 7421 Oct 21 14:06 CarsSaloon_AWS_backup_1.sql
[rvv@Centos8 L1-MySQL]$
```

PART 3 – MongoDB

17. Create a database. Use the use command to connect to a new database (If it doesn't exist, Mongo will create it when you write to it).

Install MongoDB (Ubuntu server 20.04). Import the public key used by the package management system.

```
wget -qO - https://www.mongodb.org/static/pgp/server-6.0.asc | sudo apt-key add -
```

Create a list file for MongoDB

```
echo "deb [ arch=amd64,arm64 ] https://repo.mongodb.org/apt/ubuntu focal/mongodb-org/6.0 multiverse" | sudo tee
/etc/apt/sources.list.d/mongodb-org-6.0.list
```

```
sudo apt-get update
```

Install the MongoDB packages.

```
sudo apt-get install -y mongodb-org
```

18. Create a collection. Use db.createCollection to create a collection. I'll leave the subject up to you. Run show dbs and show collections to view your database and collections.

```
rvv@usrv1:/var/log/mongodb$ mongo
MongoDB shell version v3.6.8
connecting to: mongodb://127.0.0.1:27017
Implicit session: session { "id" : UUID("7643af92-190d-42d1-a6fe-9ee59dedd64f") }
MongoDB server version: 3.6.8
Server has startup warnings:
2022-10-22T10:03:14.443+0000 I STORAGE [initandlisten]
2022-10-22T10:03:14.443+0000 I STORAGE [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine
2022-10-22T10:03:14.443+0000 I STORAGE [initandlisten] ** See http://dochub.mongodb.org/core/prodnotes-filesystem
2022-10-22T10:03:20.559+0000 I CONTROL [initandlisten]
2022-10-22T10:03:20.559+0000 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
2022-10-22T10:03:20.559+0000 I CONTROL [initandlisten] ** Read and write access to data and configuration is unrestricted.
2022-10-22T10:03:20.559+0000 I CONTROL [initandlisten]
> show collections
> show dbs
admin    0.000GB
config  0.000GB
local    0.000GB
> use mydb
switched to db mydb
> db.books.insert({title:"MyBook", likes:100});
WriteResult({ "nInserted" : 1 })
> show dbs
admin    0.000GB
config  0.000GB
local    0.000GB
mydb     0.000GB
> show collections
books
>
```

19. Create some documents. Insert a couple of documents into your collection. I'll leave the subject matter up to you, perhaps cars or hats.

20. Use find() to list documents out.

Create collection books in mydb dbs. Insert 2 elemrnts in it. Find and Update and finally drop collection.

```
> db.books.find()
{ "_id" : ObjectId("6353caa4d748aeeb3feea704"), "title" : "MyBook", "likes" : 100 }
> db.books.insert({title:"Power Book", Author:"Vladimir", Pages:123});
WriteResult({ "nInserted" : 1 })
> db.books.find()
{ "_id" : ObjectId("6353caa4d748aeeb3feea704"), "title" : "MyBook", "likes" : 100 }
{ "_id" : ObjectId("6353cc7ed748aeeb3feea705"), "title" : "Power Book", "Author" : "Vladimir", "Page
s" : 123 }
> db.books.find({likes:100})
{ "_id" : ObjectId("6353caa4d748aeeb3feea704"), "title" : "MyBook", "likes" : 100 }
> db.books.find({Author:"Vlad"})
> db.books.find({Author:"Vladimir"})
{ "_id" : ObjectId("6353cc7ed748aeeb3feea705"), "title" : "Power Book", "Author" : "Vladimir", "Page
s" : 123 }
> db.books.find({Pages:{> 100}})
2022-10-22T10:59:02.430+0000 E QUERY [thread1] SyntaxError: missing : after property id @(shell):
1:26
> db.books.find({Pages:{>:100}})
{ "_id" : ObjectId("6353cc7ed748aeeb3feea705"), "title" : "Power Book", "Author" : "Vladimir", "Page
s" : 123 }
> db.books.updateOne({Author:"Vladimir"},{$set:{Pages:500}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.books.find({Pages:{>:100}})
{ "_id" : ObjectId("6353cc7ed748aeeb3feea705"), "title" : "Power Book", "Author" : "Vladimir", "Page
s" : 500 }
> db.books.deleteOne({likes:100})
{ "acknowledged" : true, "deletedCount" : 1 }
> db.books.find()
{ "_id" : ObjectId("6353cc7ed748aeeb3feea705"), "title" : "Power Book", "Author" : "Vladimir", "Page
s" : 500 }
> db.books.drop()
true

> show.collections
2022-10-22T11:03:38.576+0000 E QUERY [thread1] ReferenceError: show is not defined :
@(shell):1:1
> show collections
> show dbs
admin 0.000GB
config 0.000GB
local 0.000GB
> _
```

Create Backup

```
> show collections
books
> db.books.find()
{ "_id" : ObjectId("6353d098d748aeeb3feea706"), "title" : "Cooking", "Author" : "Olga", "Pages" : 345 }
{ "_id" : ObjectId("6353d0add748aeeb3feea707"), "title" : "My path", "Author" : "Sveta", "Pages" : 200 }
{ "_id" : ObjectId("6353d0e1d748aeeb3feea708"), "title" : "Eatrh climate", "Recenzent" : "Ivan", "Author" : "Denis" }
> ^C
bye
rvv@usrv1:/var/log/mongodb$ cd ~
rvv@usrv1:~$ mongodump --out ~/
2022-10-22T11:18:03.701+0000    writing admin.system.version to
2022-10-22T11:18:03.703+0000    done dumping admin.system.version (1 document)
2022-10-22T11:18:03.704+0000    writing mydb.books to
2022-10-22T11:18:03.707+0000    done dumping mydb.books (3 documents)
rvv@usrv1:~$ ls -la
total 56
drwxr-xr-x  8 rvv  rvv  4096 Oct 22 11:18 .
drwxr-xr-x  3 root root  4096 Oct 22 09:35 ..
drwxrwxr-x  2 rvv  rvv  4096 Oct 22 11:18 admin
-rw-r----- 1 rvv  rvv   106 Oct 22 09:45 .bash_history
-rw-r--r--  1 rvv  rvv   220 Feb 25  2020 .bash_logout
-rw-r--r--  1 rvv  rvv  3771 Feb 25  2020 .bashrc
drwx----- 3 rvv  rvv  4096 Oct 22 10:05 .cache
drwx----- 4 rvv  rvv  4096 Oct 22 10:14 .config
-rw-r----- 1 rvv  rvv   846 Oct 22 11:17 .dbshell
drwx----- 3 rvv  rvv  4096 Oct 22 10:05 .local
-rw-r----- 1 rvv  rvv     0 Oct 22 10:23 .mongorc.js
drwxrwxr-x  2 rvv  rvv  4096 Oct 22 11:18 mydb
-rw-r--r--  1 rvv  rvv   807 Feb 25  2020 .profile
drwx----- 2 rvv  rvv  4096 Oct 22 09:35 .ssh
-rw-r--r--  1 rvv  rvv     0 Oct 22 09:37 .sudo_as_admin_successful
-rw-r----- 1 rvv  rvv    51 Oct 22 10:03 .Xauthority
rvv@usrv1:~$ _
> show collections
books
> db.books.drop()
true
> show collections
> _
```

Restore db

```
rvv@usrv1:~$ mongorestore --db=mydb mydb/
2022-10-22T11:35:11.489+0000    the --db and --collection args should only be used when restoring from
om a BSON file. Other uses are deprecated and will not exist in the future; use --nsInclude instead
2022-10-22T11:35:11.490+0000    building a list of collections to restore from mydb dir
2022-10-22T11:35:11.492+0000    reading metadata for mydb.books from mydb/books.metadata.json
2022-10-22T11:35:11.514+0000    restoring mydb.books from mydb/books.bson
2022-10-22T11:35:11.518+0000    no indexes to restore
2022-10-22T11:35:11.519+0000    finished restoring mydb.books (3 documents)
2022-10-22T11:35:11.521+0000    done
rvv@usrv1:~$ mongo
MongoDB shell version v3.6.8
connecting to: mongodb://127.0.0.1:27017
Implicit session: session { "id" : UUID("96b8e385-687f-4d1b-9903-555b4f3c6704") }
MongoDB server version: 3.6.8
Server has startup warnings:
2022-10-22T10:03:14.443+0000 I STORAGE  [initandlisten]
2022-10-22T10:03:14.443+0000 I STORAGE  [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine
2022-10-22T10:03:14.443+0000 I STORAGE  [initandlisten] ** See http://dochub.mongodb.org/core/prodnotes-filesystem
2022-10-22T10:03:20.559+0000 I CONTROL  [initandlisten]
2022-10-22T10:03:20.559+0000 I CONTROL  [initandlisten] ** WARNING: Access control is not enabled for the database.
2022-10-22T10:03:20.559+0000 I CONTROL  [initandlisten] ** Read and write access to data and configuration is unrestricted.
2022-10-22T10:03:20.559+0000 I CONTROL  [initandlisten]
> use mydb
switched to db mydb
> show collections
books
```