

Lesson 02 Demo 03

Working with Subqueries

Objective: To use subqueries in MySQL

Tools required: MySQL

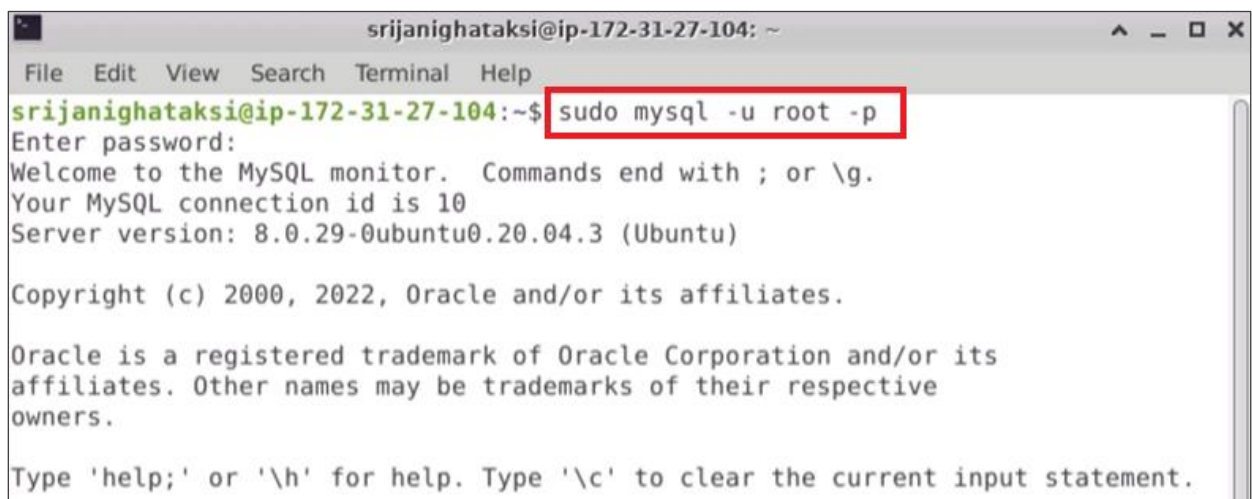
Prerequisites: SQL

Steps to be followed:

1. Create a new table Employee
2. Use a subquery with select
3. Create new tables named Product and Order
4. Insert records in Order
5. Update records of Employee
6. Delete records from Employee

Step 1: Create a new table Employee

- 1.1 Login to the terminal of lab and type the following command to open MySQL shell:
sudo mysql -u root -p (password is empty for this root user)

A terminal window titled 'srijanighataksi@ip-172-31-27-104: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The prompt is 'srijanighataksi@ip-172-31-27-104:~\$' and the command 'sudo mysql -u root -p' is entered and highlighted with a red box. The output shows the MySQL monitor welcome message, connection ID 10, server version 8.0.29-0ubuntu0.20.04.3, and copyright information. The prompt returns to the shell.

```
srijanighataksi@ip-172-31-27-104:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.29-0ubuntu0.20.04.3 (Ubuntu)

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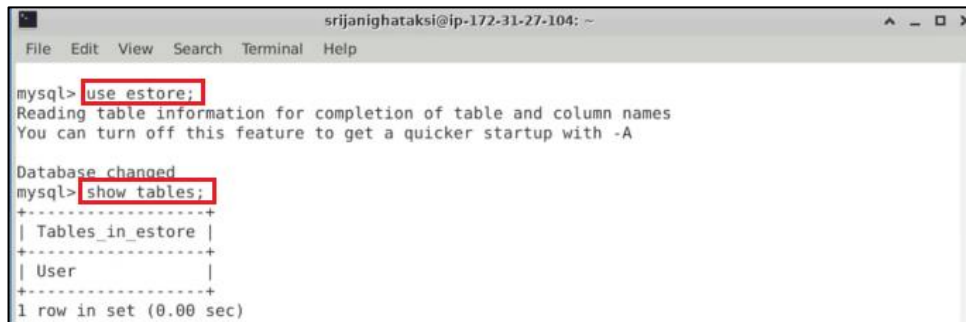
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

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

srijanighataksi@ip-172-31-27-104:~$
```

1.2 Switch to the estore database and then show all the tables using the below commands:

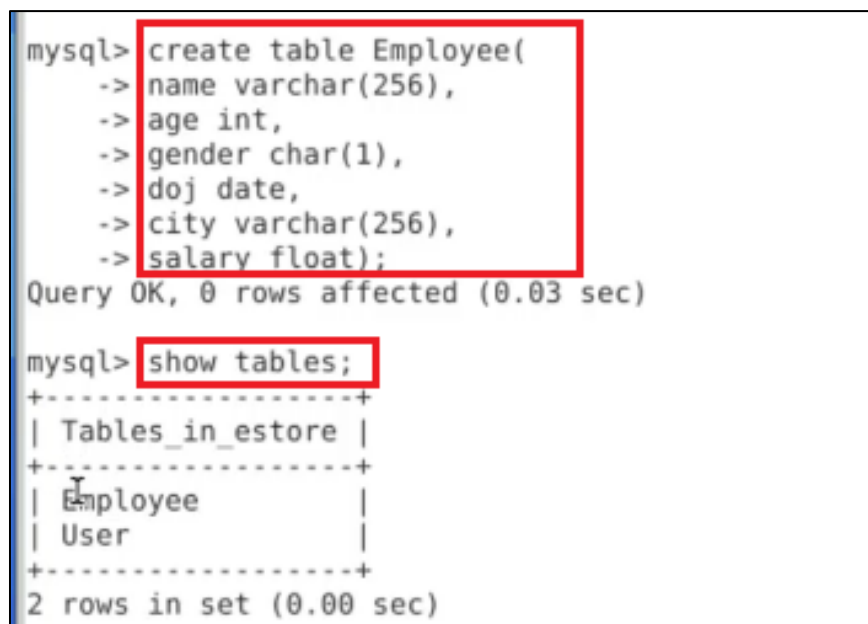
```
use estore;  
show tables;
```



```
srijanighataksi@ip-172-31-27-104: ~  
File Edit View Search Terminal Help  
mysql> use estore;  
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_estore |  
+-----+  
| User              |  
+-----+  
1 row in set (0.00 sec)
```

1.3 Create a table Employee using the following commands:

```
create table Employee(  
    name varchar(256),  
    age int,  
    gender char(1),  
    doj date,  
    city varchar(256),  
    salary float);  
show tables;
```



```
mysql> create table Employee(  
-> name varchar(256),  
-> age int,  
-> gender char(1),  
-> doj date,  
-> city varchar(256),  
-> salary float);  
Query OK, 0 rows affected (0.03 sec)  
  
mysql> show tables;  
+-----+  
| Tables_in_estore |  
+-----+  
| Employee          |  
| User              |  
+-----+  
2 rows in set (0.00 sec)
```

1.4 Add records in **Employee** as per the below screenshot:

```

insert into Employee values('Jimmy', 35, 'M', '2005-05-30', 'Chicago', 70000);
insert into Employee values('Shane', 30, 'M', '1999-06-25', 'Seattle', 55000);
insert into Employee values('Marry', 28, 'F', '2009-03-10', 'Boston', 62000);
insert into Employee values('Dwayne', 37, 'M', '2011-07-12', 'Austin', 57000);
insert into Employee values('Sara', 32, 'F', '2017-10-27', 'New York', 72000);
insert into Employee values('Ammy', 35, 'F', '2014-12-20', 'Seattle', 80000);
  
```

1.5 Show the records from **Employee** using the below commands:

`select * from Employee;`

```

mysql> insert into Employee values('Ammy', 35, 'F', '2014-12-20', 'Seattle', 80000);
Query OK, 1 row affected (0.00 sec)

mysql> select * from Employee;
+----+-----+-----+-----+-----+-----+
| name | age | gender | doj       | city    | salary |
+----+-----+-----+-----+-----+-----+
| Jimmy | 35 | M      | 2005-05-30 | Chicago | 70000 |
| Shane | 30 | M      | 1999-06-25 | Seattle | 55000 |
| Marry | 28 | F      | 2009-03-10 | Boston  | 62000 |
| Dwayne | 37 | M      | 2011-07-12 | Austin  | 57000 |
| Sara  | 32 | F      | 2017-10-27 | New York | 72000 |
| Ammy  | 35 | F      | 2014-12-20 | Seattle | 80000 |
+----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql>
  
```

Step 2: Use a subquery with select

2.1 Show all the results from **Employee** where individual salary is less than the average salary of the table **Employee** using the commands given below:

`select * from Employee where salary < (select avg(salary) from Employee);`

```

mysql> select * from Employee where salary < (select avg(salary) from Employee);
+----+-----+-----+-----+-----+-----+
| name | age | gender | doj       | city    | salary |
+----+-----+-----+-----+-----+-----+
| Shane | 30 | M      | 1999-06-25 | Seattle | 55000 |
| Marry | 28 | F      | 2009-03-10 | Boston  | 62000 |
| Dwayne | 37 | M      | 2011-07-12 | Austin  | 57000 |
+----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
  
```

Step 3: Create new tables named Product and orders

3.1 Create table **Products** as per the below screenshot:

```
mysql> create table Products(  
-> pid int,  
-> item varchar(256),  
-> sell_price float,  
-> product_type varchar(256));  
Query OK, 0 rows affected (0.03 sec)
```

3.2 Add records in **Products** as per the screenshot below:

```
insert into Employee values('Jimmy', 35, 'Untitled-1') • insert into products values(101, 'Jewell' 'Untitled-2' •  
1 insert into products values(101, 'Jewellery', 1800, 'Luxury');  
2 insert into products values(102, 'T-Shirt', 100, 'Non-Luxury');  
3 insert into products values(103, 'Laptop', 1300, 'Luxury');  
4 insert into products values(104, 'Table', 400, 'Non-Luxury');
```

3.3 Create table **orders** as per the below screenshot:

```
mysql> create table orders(  
-> oid int,  
-> product_sold varchar(256),  
-> selling_price float);  
Query OK, 0 rows affected (0.03 sec)
```

Step 4: Insert records in orders

4.1 Insert records in **orders** table from **Products** where sell price is greater than 1000. using the following command:

```
insert into orders pid, item, sell_price from Products where pid in (select pid from  
products where sell_price > '1000');  
select * Products;  
select * orders;
```

```

mysql> insert into orders select pid, item, sell_price from Products where pid in (select pid
from Products where sell price > 1000);
Query OK, 2 rows affected (0.01 sec)
Records: 2 Duplicates: 0 Warnings: 0

mysql> select * from Products;
+-----+-----+-----+-----+
| pid | item      | sell_price | product_type |
+-----+-----+-----+-----+
| 101 | Jewellery | 1800      | Luxury       |
| 102 | T-Shirt   | 100       | Non-Luxury   |
| 103 | Laptop    | 1300      | Luxury       |
| 104 | Table     | 400       | Non-Luxury   |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> select * from orders;
+-----+-----+-----+
| oid | product_sold | selling_price |
+-----+-----+-----+
| 101 | Jewellery    | 1800          |
| 103 | Laptop       | 1300          |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>

```

Step 5: Update records of Employee

5.1 Create a new table **emp_details** using the following command:

create table emp_details as select * Employee;

```

mysql> select * from orders;
+-----+-----+-----+
| oid | product_sold | selling_price |
+-----+-----+-----+
| 101 | Jewellery    | 1800          |
| 103 | Laptop       | 1300          |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> create table emp_details as select * from Employee;
Query OK, 6 rows affected (0.03 sec)
Records: 6 Duplicates: 0 Warnings: 0

```

5.2 Update salary column of **Employee** table for the employees whose age is above 30 in **emp_details** using the following command:

update Employee set salary = salary * 0.5 where age in (select age from emp_details where age >= 30);
select * from Employee;

```

srijanighataksi@ip-172-31-27-104: ~
File Edit View Search Terminal Help
+----+----+----+----+----+----+
| name | age | gender | doj       | city   | salary |
+----+----+----+----+----+----+
| Jimmy | 35 | M       | 2005-05-30 | Chicago | 70000 |
| Shane | 30 | M       | 1999-06-25 | Seattle | 55000 |
| Marry | 28 | F       | 2009-03-10 | Boston  | 62000 |
| Dwayne | 37 | M       | 2011-07-12 | Austin  | 57000 |
| Sara  | 32 | F       | 2017-10-27 | New York | 72000 |
| Ammy  | 35 | F       | 2014-12-20 | Seattle | 80000 |
+----+----+----+----+----+----+
6 rows in set (0.00 sec)

mysql> update Employee set salary = salary * 0.50 where age in (select age from emp_details where age >= 30);
Query OK, 5 rows affected (0.01 sec)
Rows matched: 5 Changed: 5 Warnings: 0

mysql> select * from Employee;
+----+----+----+----+----+----+
| name | age | gender | doj       | city   | salary |
+----+----+----+----+----+----+
| Jimmy | 35 | M       | 2005-05-30 | Chicago | 35000 |
| Shane | 30 | M       | 1999-06-25 | Seattle | 27500 |
| Marry | 28 | F       | 2009-03-10 | Boston  | 62000 |
| Dwayne | 37 | M       | 2011-07-12 | Austin  | 28500 |
| Sara  | 32 | F       | 2017-10-27 | New York | 36000 |
| Ammy  | 35 | F       | 2014-12-20 | Seattle | 40000 |
+----+----+----+----+----+----+
6 rows in set (0.00 sec)
  
```

Step 6: Delete records from Employee

6.1 Delete the records where age is greater than or equal to 35 using the following command:

delete from Employee where age in (select age from emp_details where age >=35);
select * Employee;

```

mysql> select * from Employee;
+----+----+----+----+----+----+
| name | age | gender | doj       | city   | salary |
+----+----+----+----+----+----+
| Jimmy | 35 | M       | 2005-05-30 | Chicago | 35000 |
| Shane | 30 | M       | 1999-06-25 | Seattle | 27500 |
| Marry | 28 | F       | 2009-03-10 | Boston  | 62000 |
| Dwayne | 37 | M       | 2011-07-12 | Austin  | 28500 |
| Sara  | 32 | F       | 2017-10-27 | New York | 36000 |
| Ammy  | 35 | F       | 2014-12-20 | Seattle | 40000 |
+----+----+----+----+----+----+
6 rows in set (0.00 sec)

mysql> delete from Employee where age in (select age from emp_details where age >=35);
Query OK, 3 rows affected (0.01 sec)

mysql> select * from Employee;
+----+----+----+----+----+----+
| name | age | gender | doj       | city   | salary |
+----+----+----+----+----+----+
| Shane | 30 | M       | 1999-06-25 | Seattle | 27500 |
| Marry | 28 | F       | 2009-03-10 | Boston  | 62000 |
| Sara  | 32 | F       | 2017-10-27 | New York | 36000 |
+----+----+----+----+----+----+
3 rows in set (0.00 sec)
  
```