



DAD 220 Database Documentation Template

Complete these steps as you work through the directions for Project One. Replace the bracketed text with your screenshots and brief explanations of the work they capture. Each screenshot and its explanation should be sized to approximately one quarter of the page, with the description written below the screenshot. Follow these rules for each of the prompts and questions below. Review the example document located in the Project One Supporting Materials for assistance.

Step One: Create a Database

1. Navigate to your online integrated development environment (IDE). List and record the SQL commands that you used to complete this step here:

The screenshot shows a web browser window with the Codio IDE. The address bar shows the URL: `codio.com/mmuller0/dad-220-sql-lab-environment/terminal/backend-1660527425321`. The IDE interface includes a menu bar (Codio, Project, File, Edit, Find, View, Tools, Education, Help) and a toolbar (Run Python (tkinter), Virtual De). The left sidebar shows a file tree for 'DAD-220 SQL Lab E' with folders like .ssh, __pycache__, sqlite, staruml, tkinterpy, and .settings. The main terminal window shows the following output:

```
Last login: Mon Aug 15 01:30:29 2022 from 192.168.10.93
codio@basicmanager-tridentcompany:~/workspace$ mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 38
Server version: 5.5.62-0ubuntu0.14.04.1 (Ubuntu)

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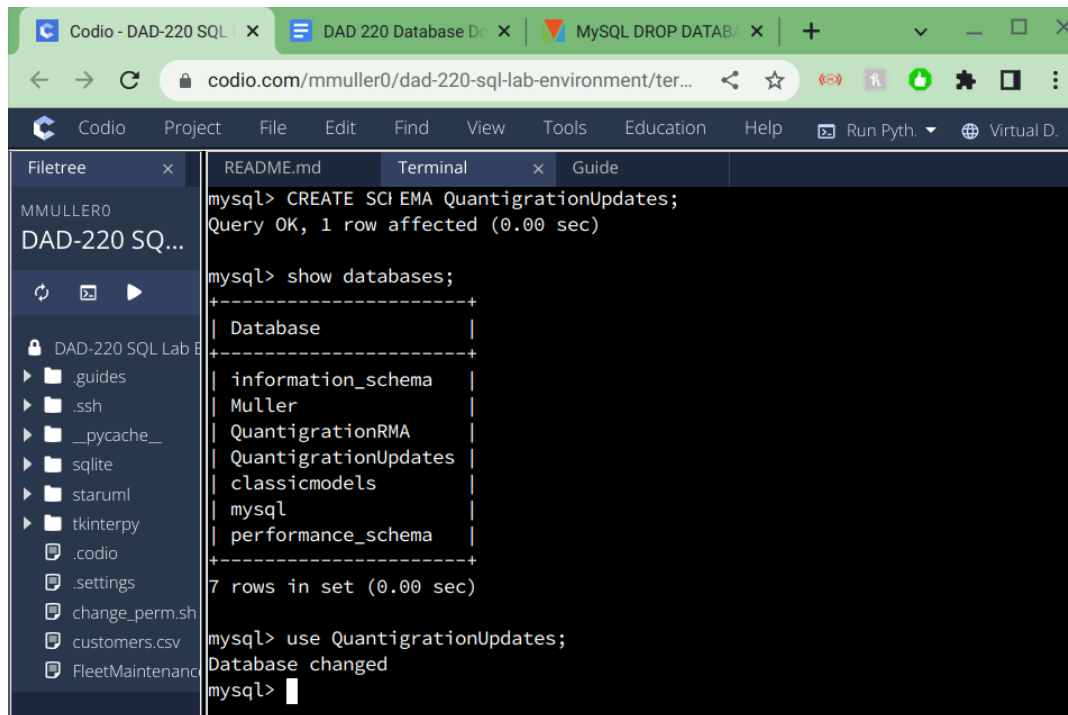
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owners.

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

mysql>
```

mysql

2. Create a database schema called QuantigrationUpdates. List out the database name. Provide the SQL commands you ran against MySQL to successfully complete this in your answer:



```

mysql> CREATE SCHEMA QuantigrationUpdates;
Query OK, 1 row affected (0.00 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| Muller |
| QuantigrationRMA |
| QuantigrationUpdates |
| classicmodels |
| mysql |
| performance_schema |
+-----+
7 rows in set (0.00 sec)

mysql> use QuantigrationUpdates;
Database changed
mysql>

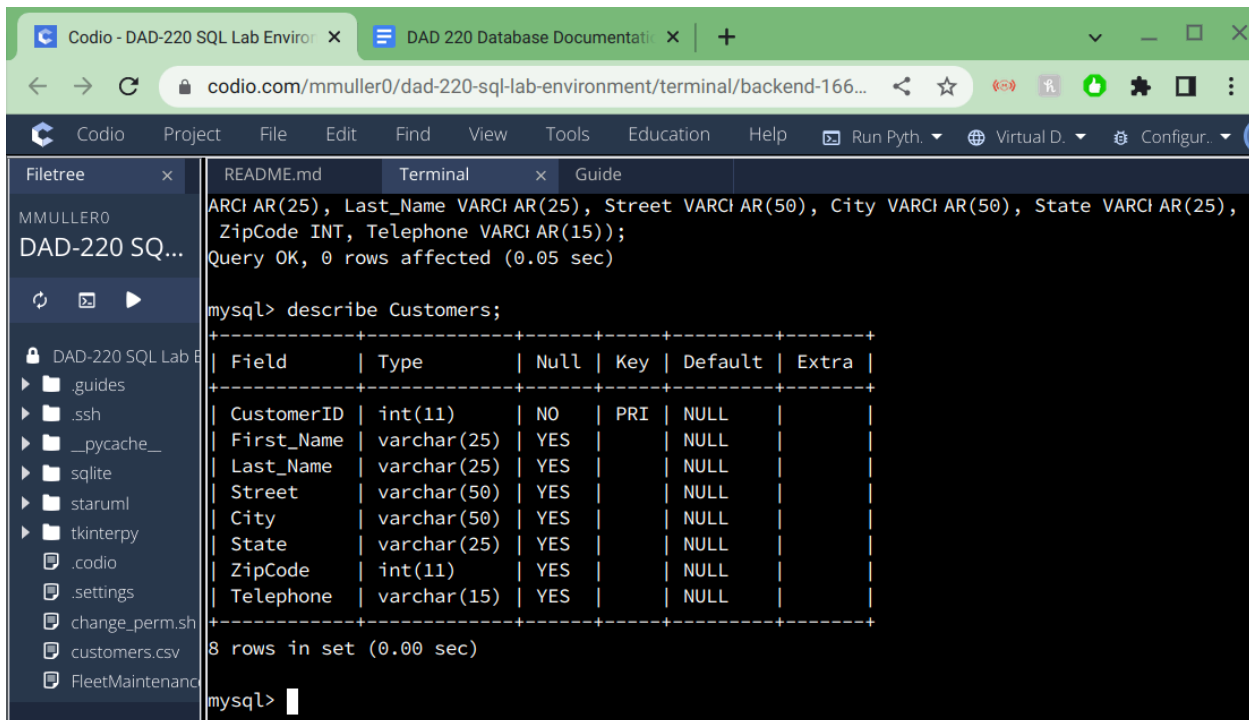
```

```

CREATE SCHEMA QuantigrationUpdates;
show databases;
use QuantigrationUpdates;

```

3. Using the entity relationship diagram (ERD) as a reference, create the following tables with the appropriate attributes and keys:
 - a. A table named **Customers** in the QuantigrationUpdates database, as defined on the project ERD. Provide the SQL commands you ran against MySQL to complete this successfully in your answer:



```

mysql> CREATE TABLE QuantigrationUpdates.Customers(
  CustomerID INT PRIMARY KEY,
  First_Name VARCHAR(25),
  Last_Name VARCHAR(25),
  Street VARCHAR(50),
  City VARCHAR(50),
  State VARCHAR(25),
  ZipCode INT,
  Telephone VARCHAR(15));
Query OK, 0 rows affected (0.05 sec)

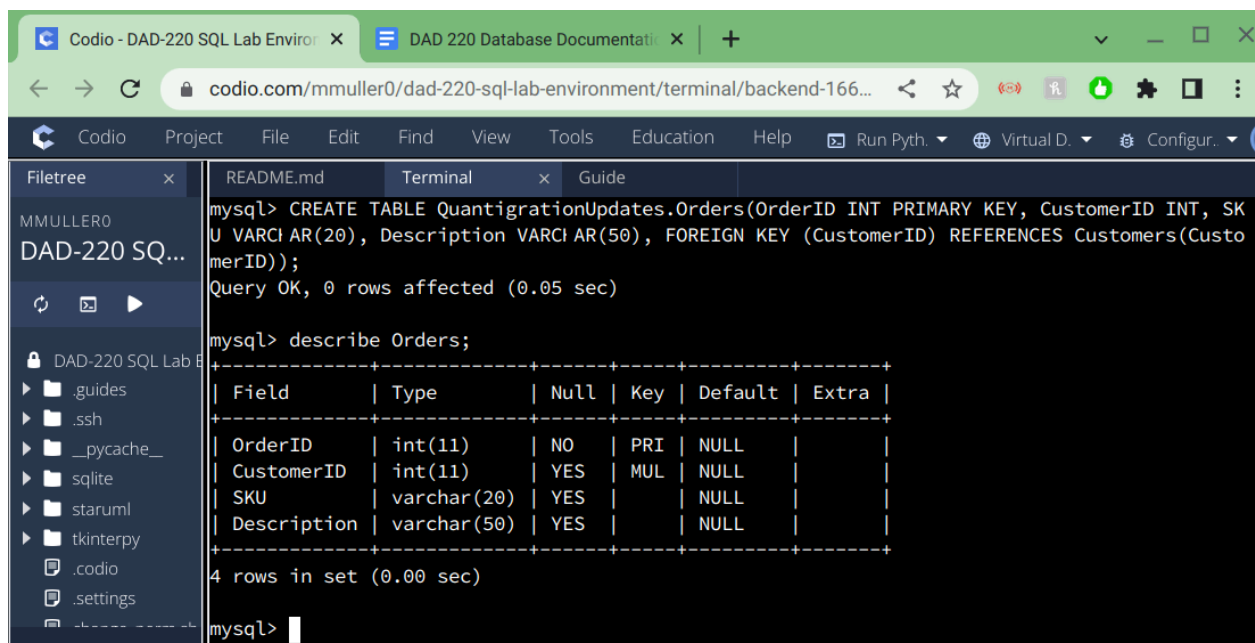
mysql> describe Customers;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| CustomerID | int(11)       | NO   | PRI | NULL    |       |
| First_Name  | varchar(25)   | YES  |     | NULL    |       |
| Last_Name   | varchar(25)   | YES  |     | NULL    |       |
| Street      | varchar(50)   | YES  |     | NULL    |       |
| City        | varchar(50)   | YES  |     | NULL    |       |
| State       | varchar(25)   | YES  |     | NULL    |       |
| ZipCode     | int(11)       | YES  |     | NULL    |       |
| Telephone   | varchar(15)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)

mysql>

```

CREATE TABLE QuantigrationUpdates.Customers(CustomerID INT PRIMARY KEY, First_Name VARCHAR(25), Last_Name VARCHAR(25), Street VARCHAR(50), City VARCHAR(50), State VARCHAR(25), ZipCode INT, Telephone VARCHAR(15));

- b. A table named **Orders** in the QuantigrationUpdates database, as defined on the project ERD. Provide the SQL commands you ran against MySQL to complete this successfully in your answer:



```

mysql> CREATE TABLE QuantigrationUpdates.Orders(
  OrderID INT PRIMARY KEY,
  CustomerID INT,
  SKU VARCHAR(20),
  Description VARCHAR(50),
  FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID));
Query OK, 0 rows affected (0.05 sec)

mysql> describe Orders;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| OrderID    | int(11)       | NO   | PRI | NULL    |       |
| CustomerID | int(11)       | YES  | MUL | NULL    |       |
| SKU        | varchar(20)   | YES  |     | NULL    |       |
| Description | varchar(50)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>

```



```
CREATE TABLE QuantigrationUpdates.Orders(OrderID INT PRIMARY KEY, CustomerID INT, SKU
VARCHAR(20), Description VARCHAR(50), FOREIGN KEY (CustomerID) REFERENCES
Customers(CustomerID));
describe Orders;
```

- c. A table named **RMA** in the QuantigrationUpdates database, as defined on the project ERD. Provide the SQL commands you ran against MySQL to complete this successfully in your answer:

```
mysql> CREATE TABLE QuantigrationUpdates.RMA(RMAID INT PRIMARY KEY, OrderID INT, Step VARCHAR(50), Status VARCHAR(15), Reason VARCHAR(15), FOREIGN KEY (OrderID) REFERENCES Orders(OrderID));
Query OK, 0 rows affected (0.06 sec)

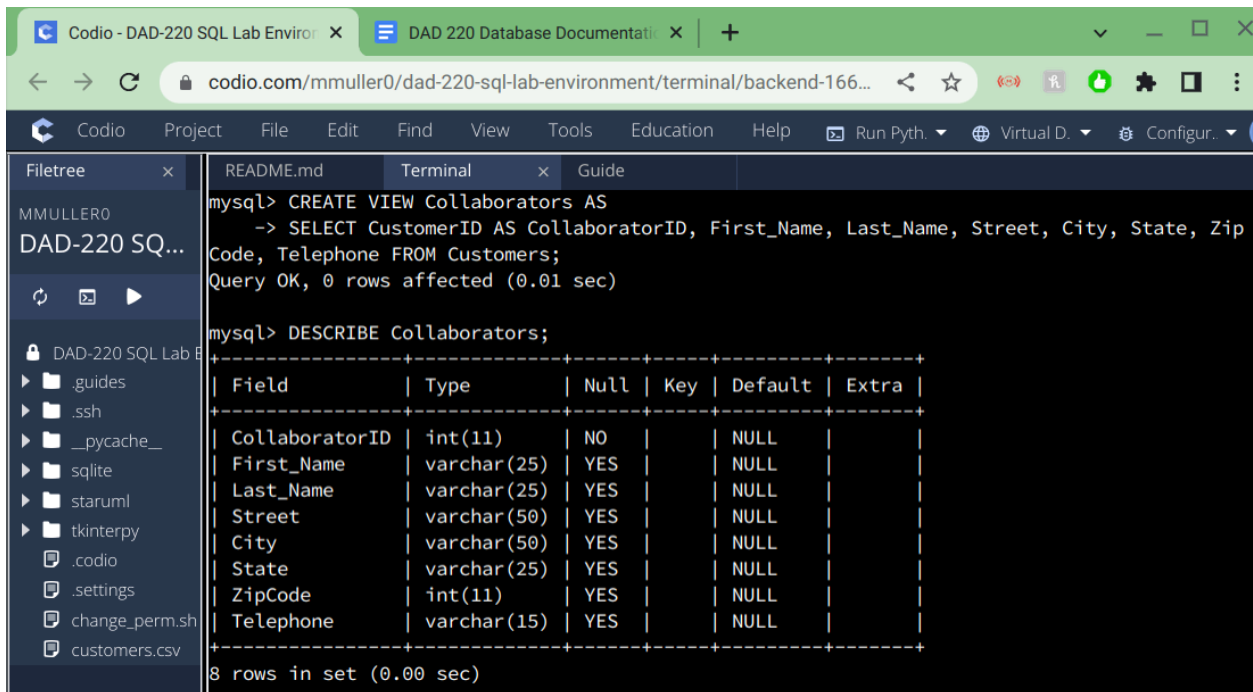
mysql> describe RMA;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| RMAID | int(11) | NO | PRI | NULL | |
| OrderID | int(11) | YES | MUL | NULL | |
| Step | varchar(50) | YES | | NULL | |
| Status | varchar(15) | YES | | NULL | |
| Reason | varchar(15) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql>
```

```
CREATE TABLE QuantigrationUpdates.RMA(RMAID INT PRIMARY KEY,
OrderID INT, Step VARCHAR(50), Status VARCHAR(15), Reason VARCHAR(15),
FOREIGN KEY (OrderID) REFERENCES Orders(OrderID));

describe RMA;
```

4. **Update your existing tables** from “Customer” to “Collaborator” using SQL based on this change in requirements. Provide the SQL commands you ran against MySQL to complete this successfully in your answer:
- a. Rename all instances of “Customer” to “Collaborator.”



```
mysql> CREATE VIEW Collaborators AS
-> SELECT CustomerID AS CollaboratorID, First_Name, Last_Name, Street, City, State, Zip
Code, Telephone FROM Customers;
Query OK, 0 rows affected (0.01 sec)

mysql> DESCRIBE Collaborators;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| CollaboratorID | int(11) | NO | | NULL | |
| First_Name | varchar(25) | YES | | NULL | |
| Last_Name | varchar(25) | YES | | NULL | |
| Street | varchar(50) | YES | | NULL | |
| City | varchar(50) | YES | | NULL | |
| State | varchar(25) | YES | | NULL | |
| ZipCode | int(11) | YES | | NULL | |
| Telephone | varchar(15) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)
```

```
CREATE VIEW Collaborators AS
SELECT CustomerID AS CollaboratorID, First_Name, Last_Name, Street, City, State, ZipCode, Telephone
FROM Customers;
DESCRIBE Collaborators;
```

Step Two: Load and Query the Data

1. Import the data from each file into tables.

- Use the QuantigrationUpdates database, the three tables you created, and the three CSV files preloaded into Codio.
- Use the import utility of your database program to load the data from each file into the table of the same name. You will perform this step three times, once for each table.

```
LOAD DATA INFILE '/home/codio/workspace/customers.csv' INTO TABLE Customers FIELDS TERMINATED
BY ',' ENCLOSED BY '"' LINES TERMINATED BY '\n';
```

```
LOAD DATA INFILE '/home/codio/workspace/orders.csv' INTO TABLE Orders FIELDS TERMINATED BY ','
ENCLOSED BY '"' LINES TERMINATED BY '\n';
```

```
LOAD DATA INFILE '/home/codio/workspace/rma.csv' INTO TABLE RMA FIELDS TERMINATED BY ','
ENCLOSED BY '"' LINES TERMINATED BY '\n';
```

- ### 2. Write basic queries against imported tables to organize and analyze targeted data.
- For each query, replace the bracketed text with a screenshot of the query and its output. You should also include a 1- to 3-sentence description of the output.



- Write an SQL query that returns the **count** of orders for customers located only in the city of Framingham, Massachusetts.
 - i. How many records were returned?

This query returned 505 records. The query joined the Customers and Orders tables via the CustomerID and returned a count of all orders where the customer's city was Farmington and their state was Massachusetts.

```
mysql> SELECT COUNT(*) FROM Customers INNER JOIN Orders on Customers.CustomerID = Orders.CustomerID WHERE UPPER
(Customers.city) = "FRAMINGHAM" AND UPPER(Customers.state) = "MASSACHUSETTS";
+-----+
| COUNT(*) |
+-----+
|        505 |
+-----+
1 row in set (0.03 sec)

mysql>
```

SELECT COUNT(*) FROM Customers INNER JOIN Orders on Customers.CustomerID = Orders.CustomerID WHERE UPPER(Customers.city) = "FRAMINGHAM" AND UPPER(Customers.state) = "MASSACHUSETTS";

- Write an SQL query to **select all** of the Customers located in the state of Massachusetts.
 - i. Use a WHERE clause to limit the number of records in the Customers table to only those who are located in Massachusetts.
 - ii. Record an answer to the following question: How many records were returned?

This query returned 982 records. The query joined the Customers and Orders tables via the CustomerID and returned all of the orders where the customer's state was Massachusetts.

```
mysql> SELECT* FROM Customers INNER JOIN Orders on Customers.CustomerID = Orders.CustomerID WHERE UPPER(Customers.state) = "MASSACHUSETTS";
```

CustomerID	First_Name	Last_Name	Street	City	State	ZipCode	Telephone	OrderID	CustomerID	SKU	Description
87899	Charity	Mercado	947 White Nobel Street	Grand Rapids	Massachusetts		33	87899	ADV-48-10F		Advanced Switch 10 GigE Copper/Fiber 44 port copper
92275	Isabel	Bryan	42 South Fabien Road	Cincinnati	Massachusetts			92275	BAS-08-1 C		Basic Switch 10/100/1000 BaseT 8 port
91780	Paula	Castillo	356 South Fabien Parkway	St. Petersburg	Massachusetts			91780	BAS-08-1 C		Basic Switch 10/100/1000 BaseT 8 port
82590	Chester	Donovan	488 Fabien Street	Framingham	Massachusetts			82590	BAS-08-1 C		Basic Switch 10/100/1000 BaseT 8 port
76311	Lisa	Coleman	594 White Old St.	Framingham	Massachusetts			76311	BAS-48-1 C		Basic Switch 10/100/1000 BaseT 48 port
79305	Morgan	Petty	363 Oak Blvd.	Nashville	Massachusetts			79305	BAS-48-1 C		Basic Switch 10/100/1000 BaseT 48 port
92499	Katherine	Gardner	588 North White Clarendon Avenue	Framingham	Massachusetts		223	92499	ADV-48-10F		Advanced Switch 10 GigE Copper/Fiber 44 port copper
82565	Clifton	Humphrey	22 Fabien Road	Milwaukee	Massachusetts			82565	ENT-48-48F		Enterprise Switch 480Gig SFP+ 48 port
82710	Janine	Valenzuela	45 White Second Road	Framingham	Massachusetts			82710	ENT-24-10F		Enterprise Switch 100Gig SFP+ 24 Port
97949	Stacie	Velasquez	862 South Rocky New Avenue	Framingham	Massachusetts			97949	BAS-48-1 C		Basic Switch 10/100/1000 BaseT 48 port
84788	Joanna	Herrera	46 Green First Freeway	Framingham	Massachusetts			84788	ADV-24-10C		Advanced Switch 100Gig Copper 24 port
86610	Higuel	Doyle	441 South Old Blvd.	Framingham	Massachusetts			86610	BAS-48-1 C		Basic Switch 10/100/1000 BaseT 48 port
98231	Julius	Mccarty	839 Clarendon Parkway	Ogden	Massachusetts			98231	ENT-48-48F		Enterprise Switch 480Gig SFP+ 48 port
94877	Jacquelyn	Arnold	338 White New Freeway	New York	Massachusetts			94877	BAS-08-1 C		Basic Switch 10/100/1000 BaseT 8 port
99412	Samantha	Parrish	731 East Fabien Boulevard	Madison	Massachusetts			99412	BAS-08-1 C		Basic Switch 10/100/1000 BaseT 8 port
92708	John	Corpe	45 White Second Road	Seattle	Massachusetts			92708	BAS-08-1 C		Basic Switch 10/100/1000 BaseT 8 port

SELECT* FROM Customers INNER JOIN Orders on Customers.CustomerID = Orders.CustomerID WHERE UPPER(Customers.state) = "MASSACHUSETTS";

- Write a SQL query to insert four new records into the Orders and Customers tables using the following data:
 - i. Customers Table



CustomerID	FirstName	LastName	StreetAddress	City	State	ZipCode	Telephone
100004	Luke	Skywalker	15 Maiden Lane	New York	NY	10222	212-555-1234
100005	Winston	Smith	123 Sycamore Street	Greensboro	NC	27401	919-555-6623
100006	MaryAnne	Jenkins	1 Coconut Way	Jupiter	FL	33458	321-555-8907
100007	Janet	Williams	55 Redondo Beach Blvd	Torrence	CA	90501	310-555-5678

```
mysql> INSERT INTO Customers
-> VALUES
-> (100004, 'Luke', 'Skywalker', '17 Maiden Lane', 'New York', 'NY', 10222, '212-555-1234'),
-> (100005, 'Winston', 'Smith', '128 Sycamore Street', 'Greensboro', 'NC', 27401, '919-555-6623'),
-> (100006, 'MaryAnne', 'Jenkins', '2 Coconut Way', 'Jupiter', 'FL', 33458, '321-555-8907'),
-> (100007, 'Janet', 'Williams', '58 Redondo Beach Blvd', 'Torrence', 'CA', 90501, '310-555-5678');
Query OK, 4 rows affected (0.02 sec)
Records: 4  Duplicates: 0  Warnings: 0

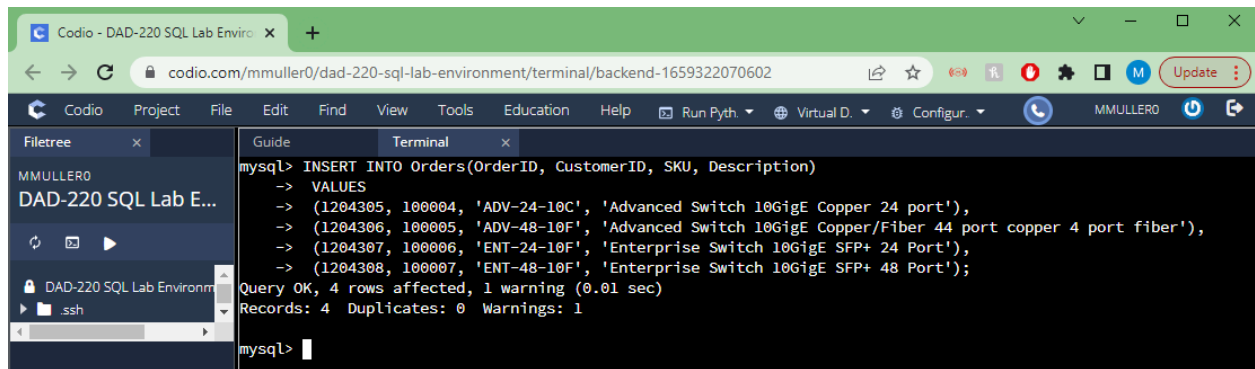
mysql>
```

INSERT INTO Customers

-> VALUES
-> (100004, 'Luke', 'Skywalker', '17 Maiden Lane', 'New York', 'NY', 10222, '212-555-1234'),
-> (100005, 'Winston', 'Smith', '128 Sycamore Street', 'Greensboro', 'NC', 27401, '919-555-6623'),
-> (100006, 'MaryAnne', 'Jenkins', '2 Coconut Way', 'Jupiter', 'FL', 33458, '321-555-8907'),
-> (100007, 'Janet', 'Williams', '58 Redondo Beach Blvd', 'Torrence', 'CA', 90501, '310-555-5678');

ii. Orders Table

OrderID	CustomerID	SKU	Description
1204305	100004	ADV-24-10C	Advanced Switch 10GigE Copper 24 port
1204306	100005	ADV-48-10F	Advanced Switch 10 GigE Copper/Fiber 44 port copper 4 port fiber
1204307	100006	ENT-24-10F	Enterprise Switch 10GigE SFP+ 24 Port
1204308	100007	ENT-48-10F	Enterprise Switch 10GigE SFP+ 48 port



```
mysql> INSERT INTO Orders(OrderID, CustomerID, SKU, Description)
-> VALUES
-> (1204305, 100004, 'ADV-24-10C', 'Advanced Switch 10GigE Copper 24 port'),
-> (1204306, 100005, 'ADV-48-10F', 'Advanced Switch 10GigE Copper/Fiber 44 port copper 4 port fiber'),
-> (1204307, 100006, 'ENT-24-10F', 'Enterprise Switch 10GigE SFP+ 24 Port'),
-> (1204308, 100007, 'ENT-48-10F', 'Enterprise Switch 10GigE SFP+ 48 Port');
Query OK, 4 rows affected, 1 warning (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 1

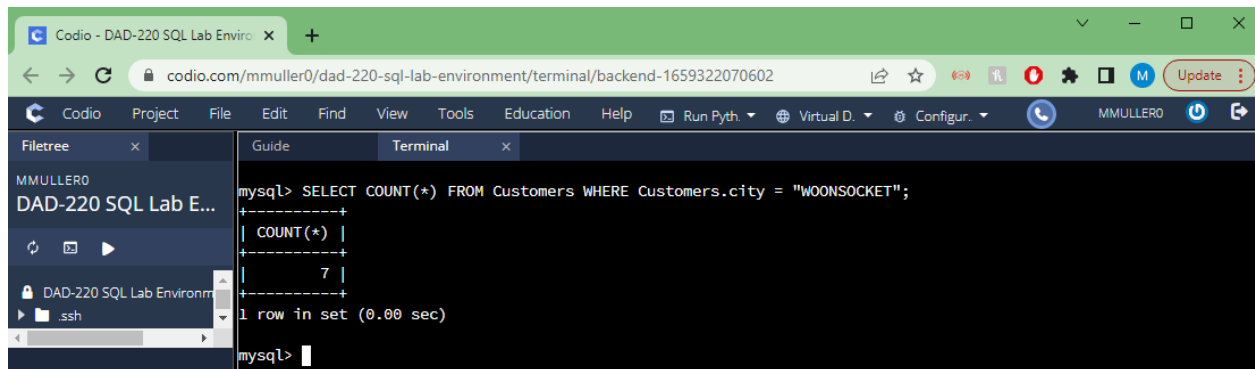
mysql>
```

INSERT INTO Orders(OrderID, CustomerID, SKU, Description)

-> VALUES
-> (1204305, 100004, 'ADV-24-10C', 'Advanced Switch 10GigE Copper 24 port'),
-> (1204306, 100005, 'ADV-48-10F', 'Advanced Switch 10GigE Copper/Fiber 44 port copper 4 port fiber'),
-> (1204307, 100006, 'ENT-24-10F', 'Enterprise Switch 10GigE SFP+ 24 Port'),
-> (1204308, 100007, 'ENT-48-10F', 'Enterprise Switch 10GigE SFP+ 48 Port');

- In the Customers table, perform a query to count all records where the city is Woonsocket, Rhode Island.
 - i. How many records are in the Customers table where the field “city” equals “Woonsocket”?

This query returned 7 records. The query counted all records in the Customers table where city equals “Woonsocket”.



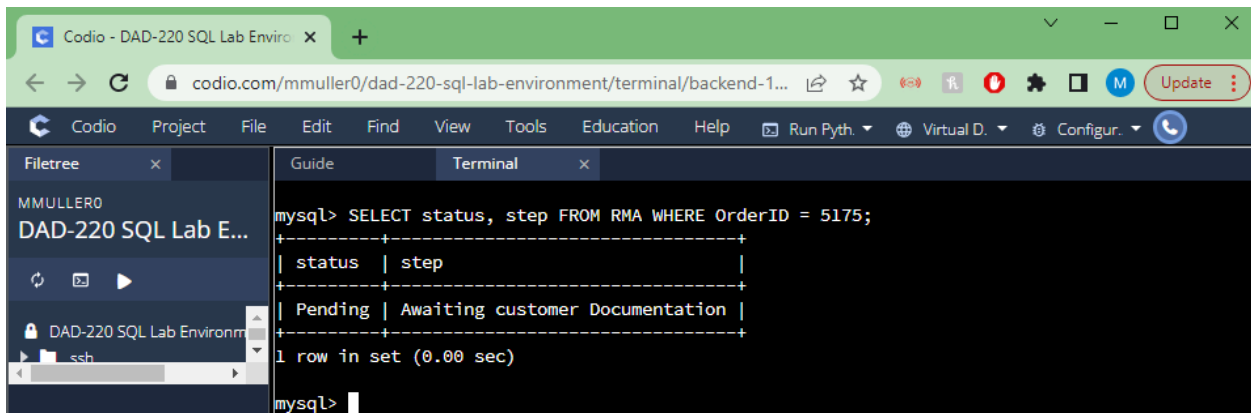
```
mysql> SELECT COUNT(*) FROM Customers WHERE Customers.city = "WOONSOCKET";
+-----+
| COUNT(*) |
+-----+
|         7 |
+-----+
1 row in set (0.00 sec)

mysql>
```

SELECT COUNT(*) FROM Customers WHERE Customers.city = "WOONSOCKET";

- In the RMA database, update a customer’s records.
 - i. Write an SQL statement to select the current fields of **status** and **step** for the record in the **RMA** table with an **orderid** value of “5175.”
 1. What are the current status and step?

The current status is Pending and the current step is Awaiting customer Documentation.



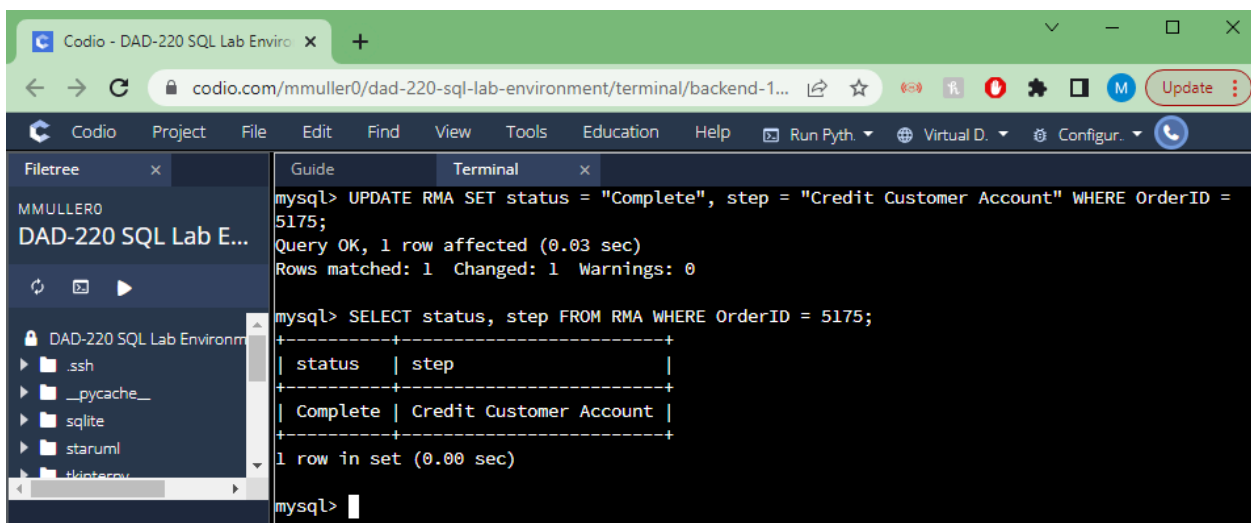
```
mysql> SELECT status, step FROM RMA WHERE OrderID = 5175;
+-----+-----+
| status | step |
+-----+-----+
| Pending | Awaiting customer Documentation |
+-----+-----+
1 row in set (0.00 sec)

mysql>
```

SELECT status, step FROM RMA WHERE OrderID = 5175;

- ii. Write an SQL statement to update the **status** and **step** for the **OrderID**, 5175 to **status** = "Complete" and **step** = "Credit Customer Account."
 1. What are the updated **status** and **step** values for this record?

After updating, the values of status and step for the record with OrderID 5175 are "Complete" and "Credit Customer Account," respectively.



```
mysql> UPDATE RMA SET status = "Complete", step = "Credit Customer Account" WHERE OrderID = 5175;
Query OK, 1 row affected (0.03 sec)
Rows matched: 1 Changed: 1 Warnings: 0

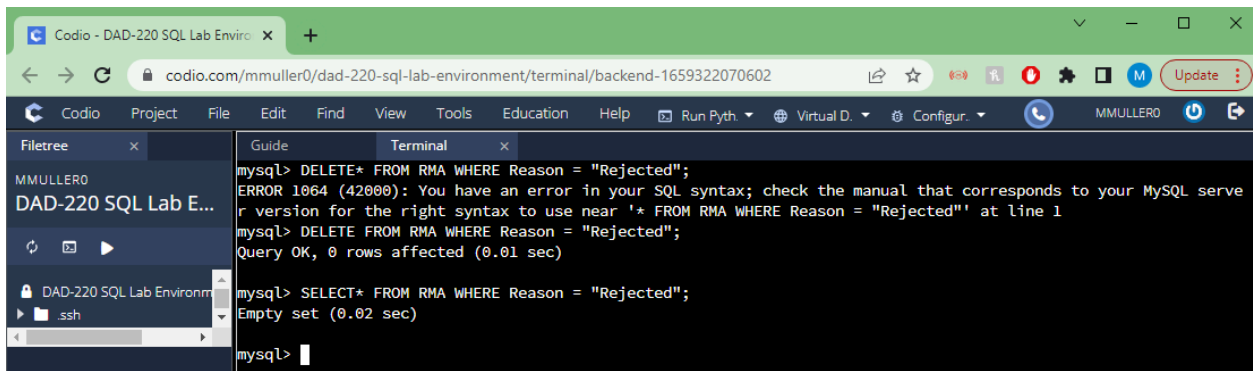
mysql> SELECT status, step FROM RMA WHERE OrderID = 5175;
+-----+-----+
| status | step |
+-----+-----+
| Complete | Credit Customer Account |
+-----+-----+
1 row in set (0.00 sec)

mysql>
```

UPDATE RMA SET status = "Complete", step = "Credit Customer Account" WHERE OrderID = 5175;

- Delete RMA records.
 - i. Write an SQL statement to delete all records with a reason of "Rejected."
 1. How many records were deleted?

This query did not delete any records. I'm not sure if this was supposed to be the case but I performed a SELECT* operation afterwards and it says that there are no records in the RMA table where Reason = "Rejected."



```

mysql> DELETE* FROM RMA WHERE Reason = "Rejected";
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 '* FROM RMA WHERE Reason = "Rejected"' at line 1
mysql> DELETE FROM RMA WHERE Reason = "Rejected";
Query OK, 0 rows affected (0.01 sec)

mysql> SELECT* FROM RMA WHERE Reason = "Rejected";
Empty set (0.02 sec)

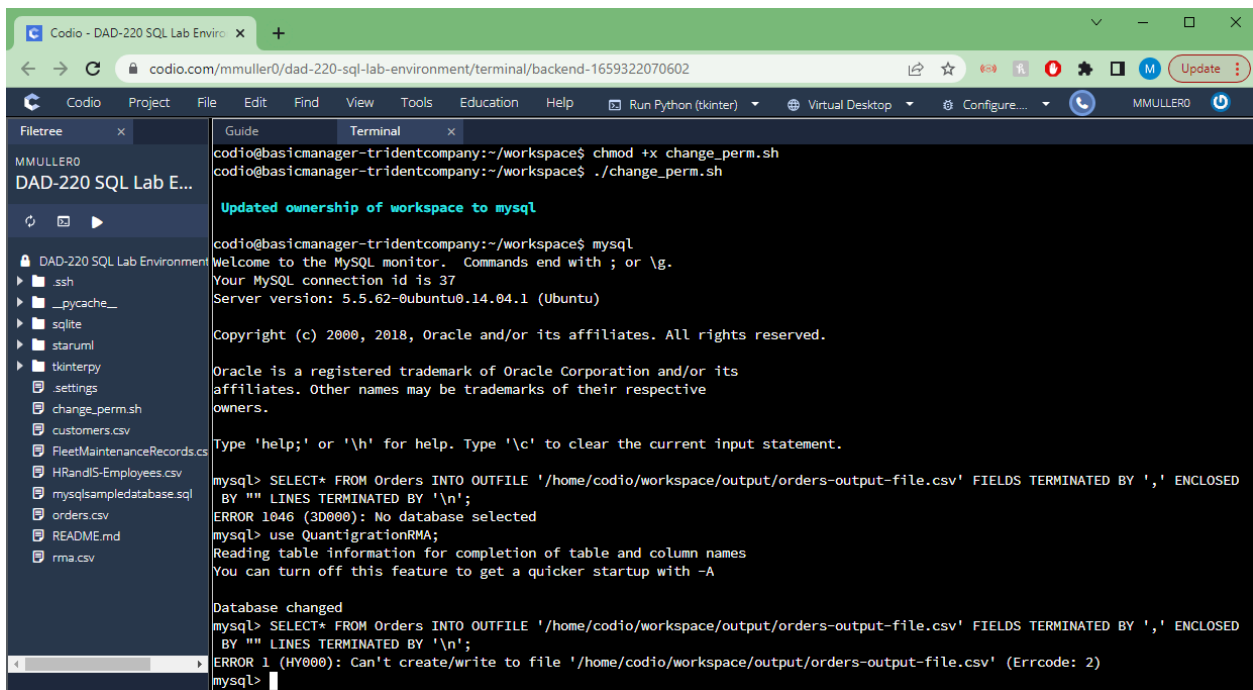
mysql>

```

DELETE FROM RMA WHERE Reason = "Rejected";
 SELECT* FROM RMA WHERE Reason = "Rejected";

3. **Create an output file of the required query results.** Write an SQL statement to list the contents of the **Orders** table and send the output to a file that has a .csv extension.

I believe that I have performed the correct command to create an output file for the Orders table but it is saying that I am unable to create the file. I am not sure how to grant myself permission to do this but I think that the code is correct.



```

codio@basicmanager-tridentcompany:~/workspace$ chmod +x change_perm.sh
codio@basicmanager-tridentcompany:~/workspace$ ./change_perm.sh

Updated ownership of workspace to mysql

codio@basicmanager-tridentcompany:~/workspace$ mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 37
Server version: 5.5.62-0ubuntu0.14.04.1 (Ubuntu)

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owners.

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

mysql> SELECT* FROM Orders INTO OUTFILE '/home/codio/workspace/output/orders-output-file.csv' FIELDS TERMINATED BY ',' ENCLOSED
BY "" LINES TERMINATED BY '\n';
ERROR 1046 (3D000): No database selected
mysql> use QuantigrationRMA;
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 Orders INTO OUTFILE '/home/codio/workspace/output/orders-output-file.csv' FIELDS TERMINATED BY ',' ENCLOSED
BY "" LINES TERMINATED BY '\n';
ERROR 1 (HY000): Can't create/write to file '/home/codio/workspace/output/orders-output-file.csv' (Errcode: 2)

mysql>

```

SELECT* FROM Orders INTO OUTFILE '/home/codio/workspace/output/orders-output-file.csv'
 FIELDS TERMINATED BY ',' ENCLOSED BY "" LINES TERMINATED BY '\n';