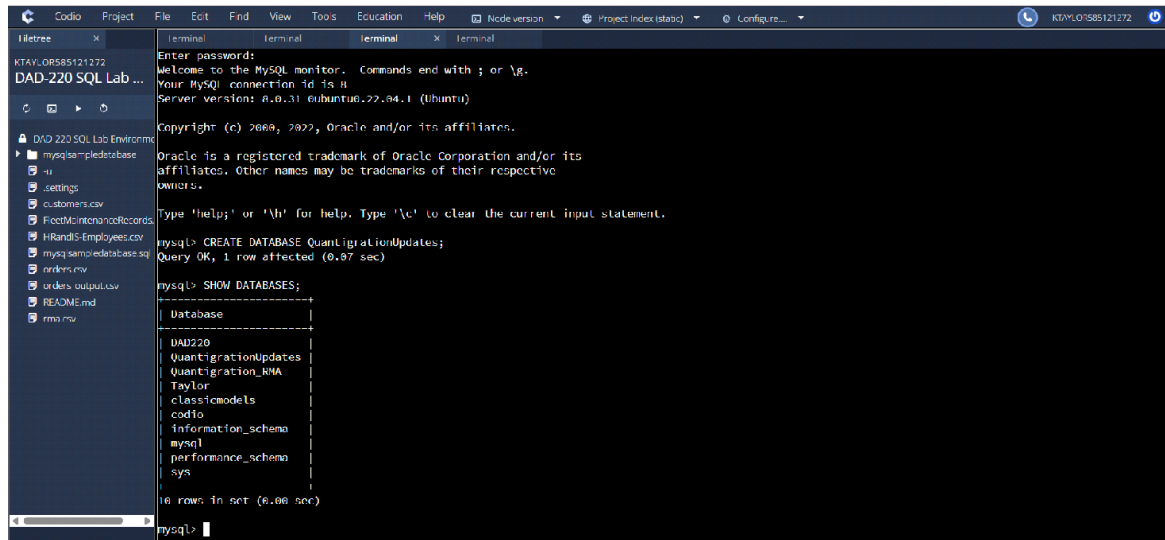


Keandra Taylor

Creating a Database



The screenshot shows a MySQL terminal window with the following content:

```
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.31 Ubuntu 22.04.1 (Ubuntu)

Copyright (c) 2000, 2022, Oracle and/or its affiliates.

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

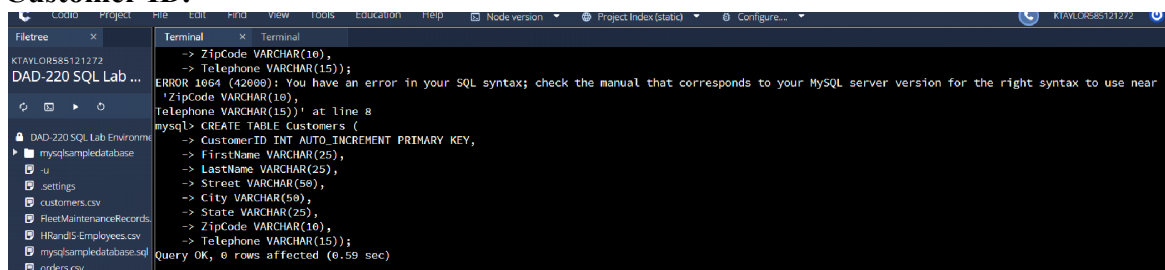
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE DATABASE QuantigrationUpdates;
Query OK, 1 row affected (0.07 sec)

mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| DAD220   |
| QuantigrationUpdates |
| Quantigration_KMA |
| Taylor  |
| classicmodels |
| codio   |
| information_schema |
| mysql   |
| performance_schema |
| sys     |
+-----+
10 rows in set (0.00 sec)

mysql>
```

Creating a table named Customers to store customer information with a primary key of Customer ID.

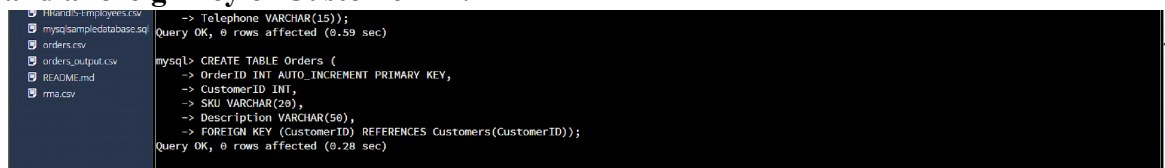


The screenshot shows a MySQL terminal window with the following content:

```
mysql> CREATE TABLE Customers (
  -> ZipCode VARCHAR(10),
  -> Telephone VARCHAR(15));
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
'ZipCode VARCHAR(10),
Telephone VARCHAR(15))' at line 8

mysql> CREATE TABLE Customers (
  -> CustomerID INT AUTO_INCREMENT PRIMARY KEY,
  -> FirstName VARCHAR(25),
  -> LastName VARCHAR(25),
  -> Street VARCHAR(50),
  -> City VARCHAR(50),
  -> State VARCHAR(25),
  -> ZipCode VARCHAR(10),
  -> Telephone VARCHAR(15));
Query OK, 0 rows affected (0.59 sec)
```

Creating a table named Orders to store order information with a primary key of Order ID and a foreign key of Customer ID.



The screenshot shows a MySQL terminal window with the following content:

```
mysql> CREATE TABLE Orders (
  -> OrderID INT AUTO_INCREMENT PRIMARY KEY,
  -> CustomerID INT,
  -> SKU VARCHAR(20),
  -> Description VARCHAR(50),
  -> FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID));
Query OK, 0 rows affected (0.28 sec)

mysql>
```

Creating a table named RMA to store RMA information with a primary key of RMA ID and a foreign key of Order ID.

```
Query OK, 0 rows affected (0.22 sec)

mysql> CREATE TABLE RMA (
  -> RMAID INT AUTO_INCREMENT PRIMARY KEY,
  -> OrderID INT,
  -> Step VARCHAR(50),
  -> Status VARCHAR(15),
  -> Reason VARCHAR(15),
  -> FOREIGN KEY (OrderID) REFERENCES Orders(OrderID));
Query OK, 0 rows affected (0.27 sec)

mysql>
```

Load and Query the Data

Importing data from files to tables

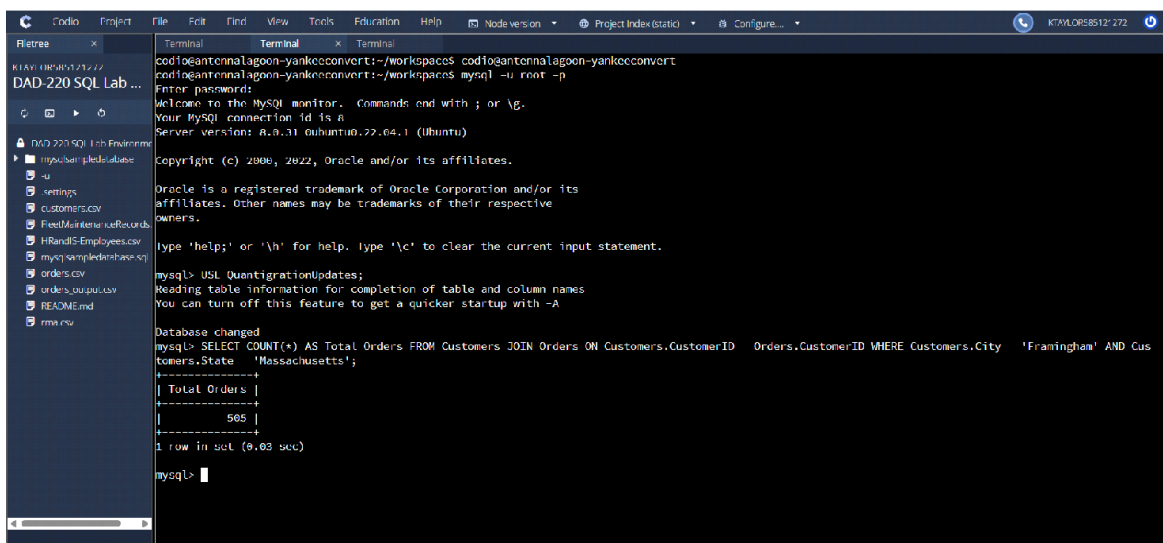
```
-> Reason VARCHAR(15),
-> FOREIGN KEY (OrderID) REFERENCES Orders(OrderID));
Query OK, 0 rows affected (0.27 sec)

mysql> LOAD DATA INFILE '/home/codio/workspace/customers.csv' INTO TABLE Customers FIELDS TERMINATED BY ',' LINES TERMINATED BY '\r\n';
Query OK, 37994 rows affected (2.18 sec)
Records: 37994 Deleted: 0 Skipped: 0 Warnings: 0

mysql> LOAD DATA INFILE '/home/codio/workspace/orders.csv' INTO TABLE Orders FIELDS TERMINATED BY ',' LINES TERMINATED BY '\r\n';
Query OK, 37994 rows affected (2.57 sec)
Records: 37994 Deleted: 0 Skipped: 0 Warnings: 0

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

This is a query that returns the count of orders for customers located only in Framingham, Massachusetts



```
codioantennalagoon-yank... mysql -u root -p
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.31 Ubuntu19.04.1 (Ubuntu)

Copyright (c) 2000, 2022, Oracle and/or its affiliates.

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.

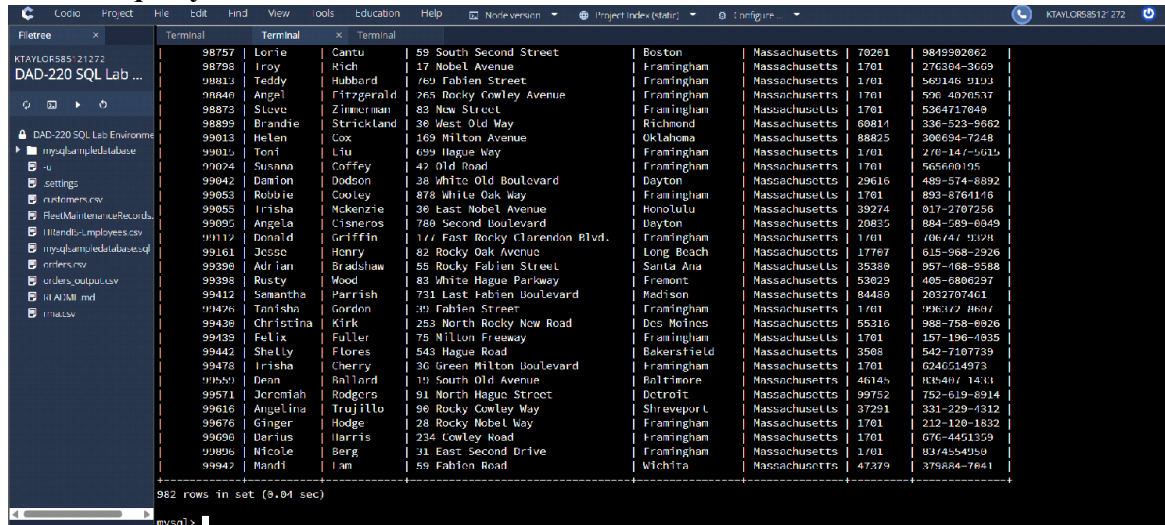
mysql> USE QuantificationUpdates;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> SELECT COUNT(*) AS Total Orders FROM Customers JOIN Orders ON Customers.CustomerID = Orders.CustomerID WHERE Customers.City = 'Framingham' AND Customers.State = 'Massachusetts';
+-----+
| Total Orders |
+-----+
|          505 |
+-----+
1 row in set (0.03 sec)

mysql>
```

There were 505 total orders from customers located in Framingham, Massachusetts.

This is a query that selects all of the customers located in Massachusetts.

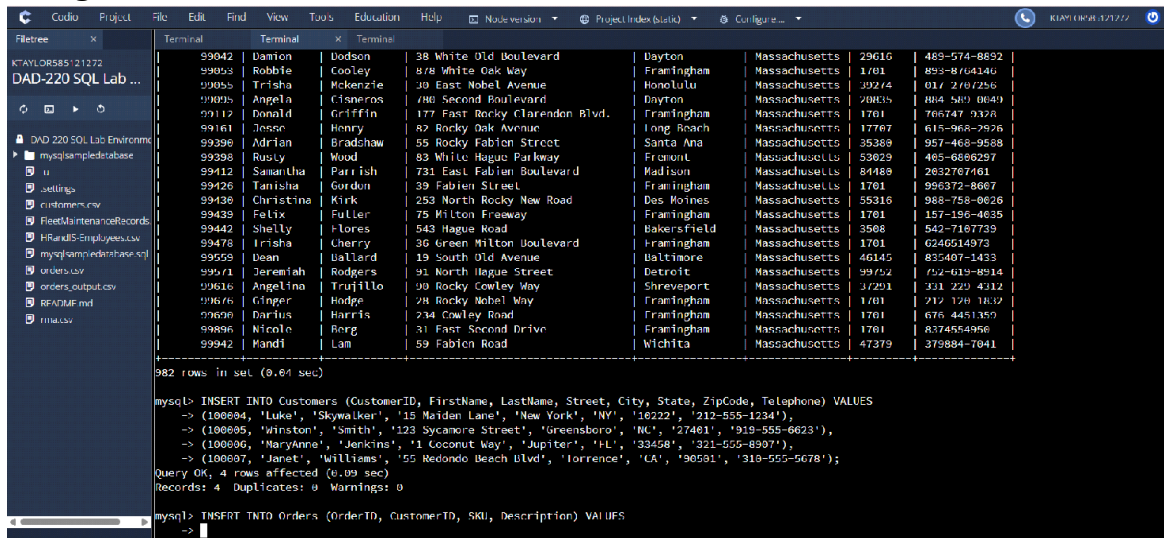


The screenshot shows a MySQL IDE window with a query result table. The table has 8 columns: CustomerID, FirstName, LastName, Street, City, State, ZipCode, and Telephone. It displays 982 rows of data for customers located in Massachusetts. The status bar at the bottom indicates '982 rows in set (0.04 sec)'.

CustomerID	FirstName	LastName	Street	City	State	ZipCode	Telephone
98757	Lorie	Cantu	59 South Second Street	Boston	Massachusetts	70261	9849902062
98798	Lroy	Rich	17 Nobel Avenue	Framingham	Massachusetts	1701	276384-3669
98813	Teddy	Hubbard	769 Fabien Street	Framingham	Massachusetts	1701	569146-9103
98826	Angel	Fitzgerald	265 Rocky Cowley Avenue	Framingham	Massachusetts	1701	596-4076537
98873	Slove	Zimmerman	83 New Street	Framingham	Massachusetts	1701	5364727049
98899	Brandie	Strickland	36 West Old Way	Richmond	Massachusetts	69814	336-523-9682
99013	Helen	Cox	169 Milton Avenue	Oklahoma	Massachusetts	88825	306694-7248
99015	Toni	Liu	699 Hague Way	Framingham	Massachusetts	1701	276-147-5615
99024	Susana	Coffey	42 Old Road	Framingham	Massachusetts	1701	565660195
99042	Damon	Dodson	38 White Old Boulevard	Dayton	Massachusetts	29616	489-574-8892
99053	Robbie	Cooley	878 White Oak Way	Framingham	Massachusetts	1701	893-8764116
99055	Trisha	McKenzie	38 East Nobel Avenue	Honolulu	Massachusetts	39274	917-2707256
99095	Angela	Cisneros	780 Second Boulevard	Dayton	Massachusetts	20835	884-289-6349
99112	Donald	Griffin	177 East Rocky Clarendon Blvd.	Framingham	Massachusetts	1701	708747-9394
99161	Jesse	Henry	82 Rocky Oak Avenue	Long Beach	Massachusetts	17767	615-968-2926
99398	Adrian	Bradshaw	55 Rocky Fabien Street	Santa Ana	Massachusetts	35388	957-168-9588
99398	Rusty	Wood	83 White Hague Parkway	Fremont	Massachusetts	53029	465-686297
99412	Samantha	Parrish	731 East Fabien Boulevard	Madison	Massachusetts	84488	2632707461
99426	Tanisha	Gordon	39 Fabien Street	Framingham	Massachusetts	1701	996372-8667
99438	Christina	Kirk	253 North Rocky New Road	Des Moines	Massachusetts	55316	988-758-6626
99439	Felix	Fuller	75 Milton Freeway	Framingham	Massachusetts	1701	157-196-4635
99442	Shelly	Flores	543 Hague Road	Bakersfield	Massachusetts	3588	542-7187739
99478	Trisha	Cherry	36 Green Milton Boulevard	Framingham	Massachusetts	1701	6246614978
99559	Dean	Ballard	19 South Old Avenue	Baltimore	Massachusetts	46145	835407-1433
99571	Jeremiah	Rodgers	91 North Hague Street	Detroit	Massachusetts	99752	754-619-8914
99616	Angelina	Trujillo	99 Rocky Cowley Way	Shreveport	Massachusetts	37201	331-229-4312
99676	Ginger	Hodge	28 Rocky Nobel Way	Framingham	Massachusetts	1701	212-129-1832
99698	Darius	Harris	234 Cowley Road	Framingham	Massachusetts	1701	676-4451359
99896	Nicole	Berg	31 East Second Drive	Framingham	Massachusetts	1701	8374554958
99942	Mandi	Lam	59 Fabien Road	Wichita	Massachusetts	47379	379884-7641

wrote the query `SELECT * FROM Customers WHERE State = 'Massachusetts';` and it returned 982 customers located in Massachusetts.

Inserting new records into Customers table



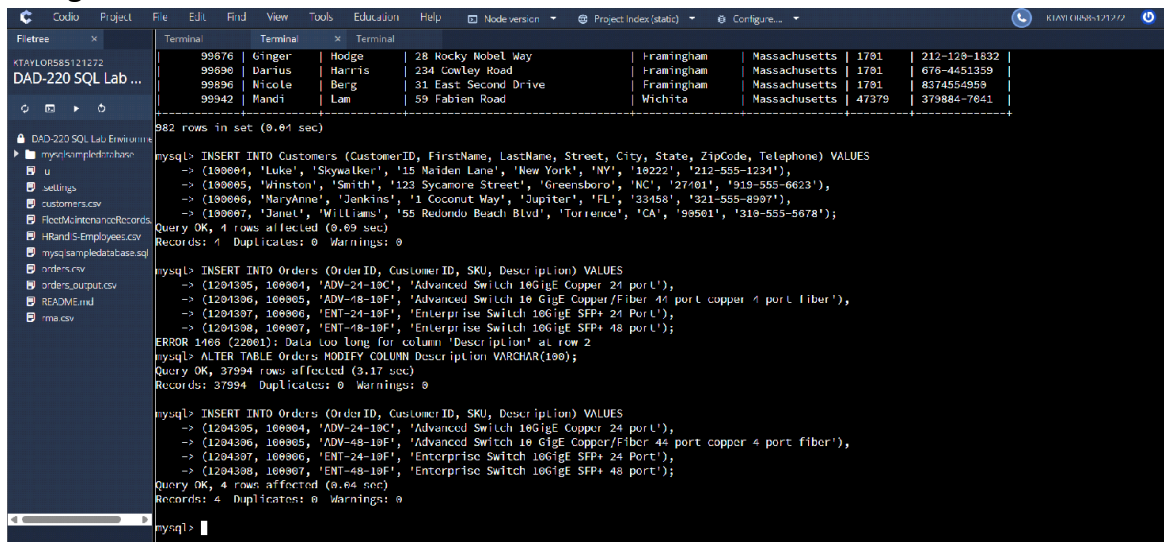
The screenshot shows a MySQL IDE window with a query result table. The table has 8 columns: CustomerID, FirstName, LastName, Street, City, State, ZipCode, and Telephone. It displays 982 rows of data for customers located in Massachusetts. The status bar at the bottom indicates '982 rows in set (0.04 sec)'. Below the table, the following SQL query is shown:

```
mysql> INSERT INTO Customers (CustomerID, FirstName, LastName, Street, City, State, ZipCode, Telephone) VALUES  
-> (100894, 'Luke', 'Skywalker', '15 Noidan Lane', 'New York', 'NY', '10222', '212-555-1234'),  
-> (100895, 'Winston', 'Smith', '123 Sycamore Street', 'Greensboro', 'NC', '27481', '919-555-6623'),  
-> (100896, 'MaryAnne', 'Jenkins', '1 Coconut Way', 'Jupiter', 'FL', '33458', '321-555-8907'),  
-> (100897, 'Janet', 'Williams', '55 Redondo Beach Blvd', 'Torrance', 'CA', '90591', '310-555-5078');  
Query OK, 4 rows affected (0.09 sec)  
Records: 4 Duplicates: 0 Warnings: 0
```

Below the query, the following SQL query is shown:

```
mysql> INSERT INTO Orders (OrderID, CustomerID, SKU, Description) VALUES  
->
```

Inserting new records into Orders table



```
mysql> INSERT INTO Customers (CustomerID, FirstName, LastName, Street, City, State, ZipCode, Telephone) VALUES
--> (189894, 'Luke', 'Skywalker', '15 Naiden Lane', 'New York', 'NY', '18222', '212-555-1234'),
--> (189895, 'Winston', 'Smith', '123 Sycamore Street', 'Greensboro', 'NC', '27401', '919-555-6623'),
--> (189896, 'MaryAnne', 'Jenkins', '1 Coconut Way', 'Jupiter', 'FL', '33458', '321-555-8997'),
--> (189897, 'Janet', 'Williams', '55 Redondo Beach Blvd', 'Torrance', 'CA', '99561', '310-555-5678');
Query OK, 4 rows affected (0.69 sec)
Records: 4 Duplicates: 0 Warnings: 0

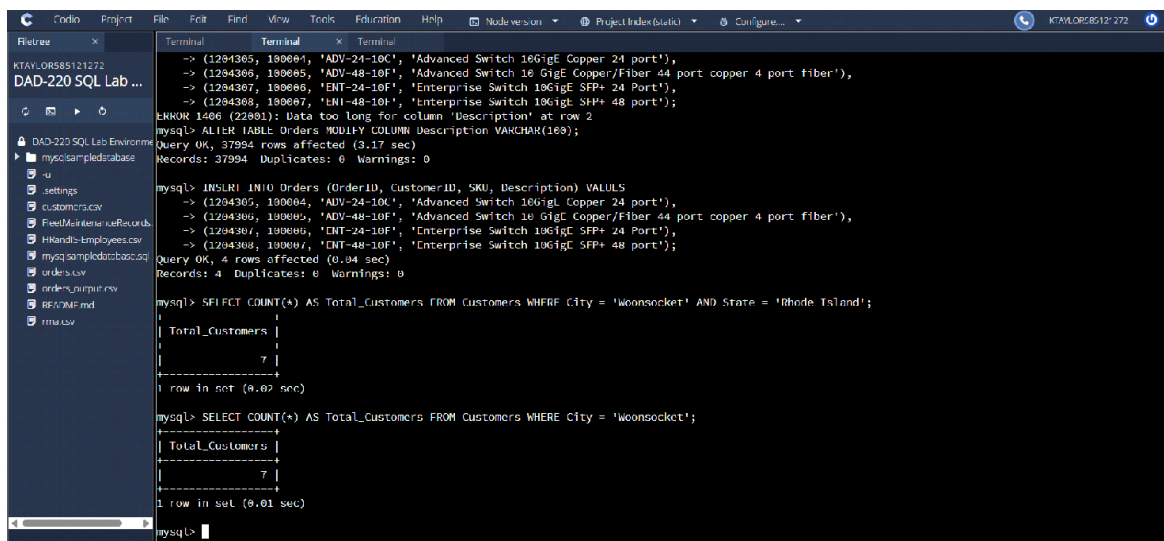
mysql> INSERT INTO Orders (OrderID, CustomerID, SKU, Description) VALUES
--> (1284385, 189894, 'ADV-24-18C', 'Advanced Switch 18GigE Copper 24 port'),
--> (1284386, 189895, 'ADV-48-18F', 'Advanced Switch 18 GigE Copper/Fiber 44 port copper 4 port fiber'),
--> (1284387, 189896, 'ENT-24-18F', 'Enterprise Switch 18GigE SFP+ 24 Port'),
--> (1284388, 189897, 'ENT-48-18F', 'Enterprise Switch 18GigE SFP+ 48 port');
ERROR 1406 (22001): Data too long for column 'Description' at row 2
mysql> ALTER TABLE Orders MODIFY COLUMN Description VARCHAR(180);
Query OK, 37994 rows affected (3.17 sec)
Records: 37994 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Orders (OrderID, CustomerID, SKU, Description) VALUES
--> (1284385, 189894, 'ADV-24-18C', 'Advanced Switch 18GigE Copper 24 port'),
--> (1284386, 189895, 'ADV-48-18F', 'Advanced Switch 18 GigE Copper/Fiber 44 port copper 4 port fiber'),
--> (1284387, 189896, 'ENT-24-18F', 'Enterprise Switch 18GigE SFP+ 24 Port'),
--> (1284388, 189897, 'ENT-48-18F', 'Enterprise Switch 18GigE SFP+ 48 port');
Query OK, 4 rows affected (0.64 sec)
Records: 4 Duplicates: 0 Warnings: 0

mysql>
```

I attempted to add the new orders to the order table and one of the descriptions were too long. I modified the character count for the description column and then added the new orders to the table.

This is a query that counts all records where the city is Woonsocket and the state is Rhode Island



```
mysql> ALTER TABLE Orders MODIFY COLUMN Description VARCHAR(180);
Query OK, 37994 rows affected (3.17 sec)
Records: 37994 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Orders (OrderID, CustomerID, SKU, Description) VALUES
--> (1284385, 189894, 'ADV-24-18C', 'Advanced Switch 18GigE Copper 24 port'),
--> (1284386, 189895, 'ADV-48-18F', 'Advanced Switch 18 GigE Copper/Fiber 44 port copper 4 port fiber'),
--> (1284387, 189896, 'ENT-24-18F', 'Enterprise Switch 18GigE SFP+ 24 Port'),
--> (1284388, 189897, 'ENT-48-18F', 'Enterprise Switch 18GigE SFP+ 48 port');
Query OK, 4 rows affected (0.04 sec)
Records: 4 Duplicates: 0 Warnings: 0

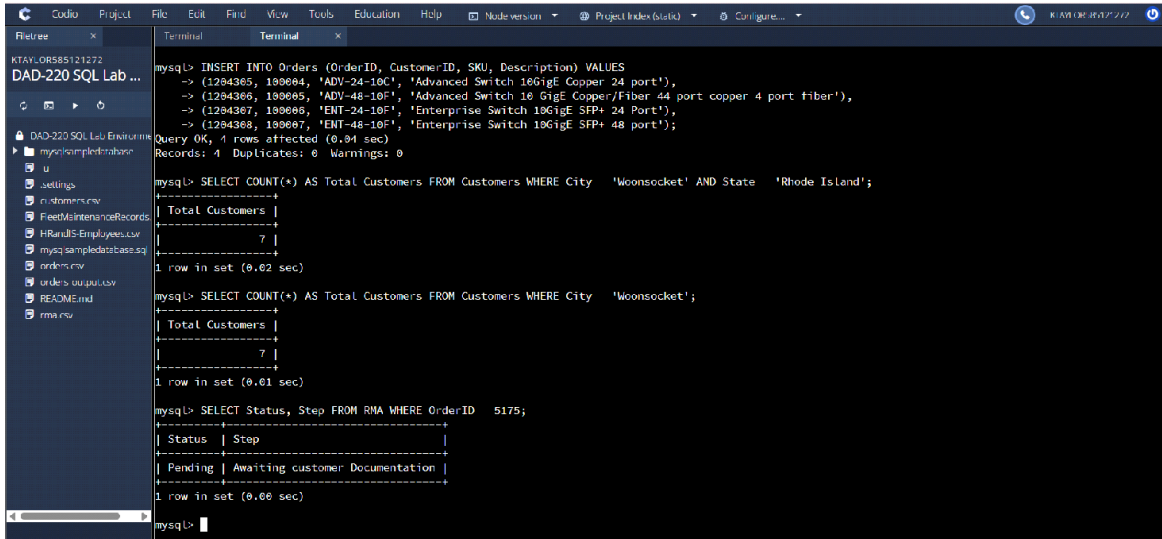
mysql> SELECT COUNT(*) AS Total_Customers FROM Customers WHERE City = 'Woonsocket' AND State = 'Rhode Island';
+-----+
| Total_Customers |
+-----+
| 7 |
+-----+
1 row in set (0.02 sec)

mysql> SELECT COUNT(*) AS Total_Customers FROM Customers WHERE City = 'Woonsocket';
+-----+
| Total_Customers |
+-----+
| 7 |
+-----+
1 row in set (0.01 sec)

mysql>
```

There are 7 customers in Woonsocket, Rhode Island.

This is a SQL statement that selects the current fields of status and step for the for OrderUD 5175



```
mysql> INSERT INTO Orders (OrderID, CustomerID, SKU, Description) VALUES
-> (1284365, 188684, 'ADV-24-10C', 'Advanced Switch 10GigE Copper 24 port'),
-> (1284366, 188685, 'ADV-48-10F', 'Advanced Switch 10 GigE Copper/Fiber 48 port copper 4 port fiber'),
-> (1284367, 188686, 'ENT-24-10F', 'Enterprise Switch 10GigE SFP+ 24 Port'),
-> (1284368, 188687, 'ENT-48-10F', 'Enterprise Switch 10GigE SFP+ 48 port');
Query OK, 4 rows affected (0.84 sec)
Records: 4 Duplicates: 0 Warnings: 0

mysql> SELECT COUNT(*) AS Total Customers FROM Customers WHERE City 'Woonsocket' AND State 'Rhode Island';
+-----+
| Total Customers |
+-----+
| 7 |
+-----+
1 row in set (0.02 sec)

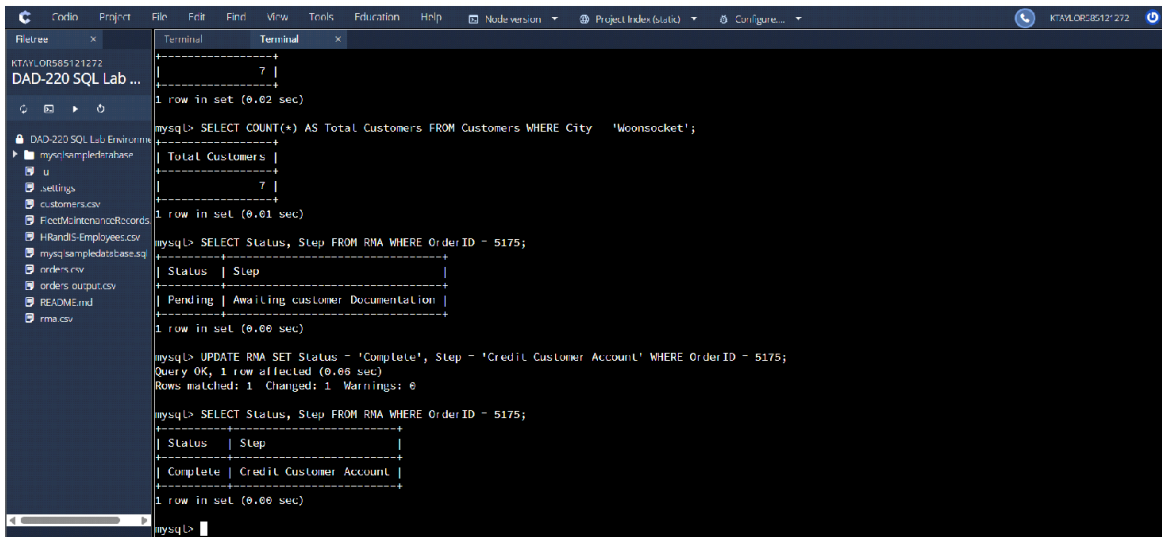
mysql> SELECT COUNT(*) AS Total Customers FROM Customers WHERE City 'Woonsocket';
+-----+
| Total Customers |
+-----+
| 7 |
+-----+
1 row in set (0.01 sec)

mysql> SELECT Status, Step FROM RMA WHERE OrderID 5175;
+-----+-----+
| Status | Step |
+-----+-----+
| Pending | Awaiting customer Documentation |
+-----+-----+
1 row in set (0.06 sec)

mysql>
```

The status for OrderID 5175 is Pending and step is awaiting customer documentation.

Updating Status and Step of OrderID 5175



```
mysql> SELECT COUNT(*) AS Total Customers FROM Customers WHERE City 'Woonsocket';
+-----+
| Total Customers |
+-----+
| 7 |
+-----+
1 row in set (0.02 sec)

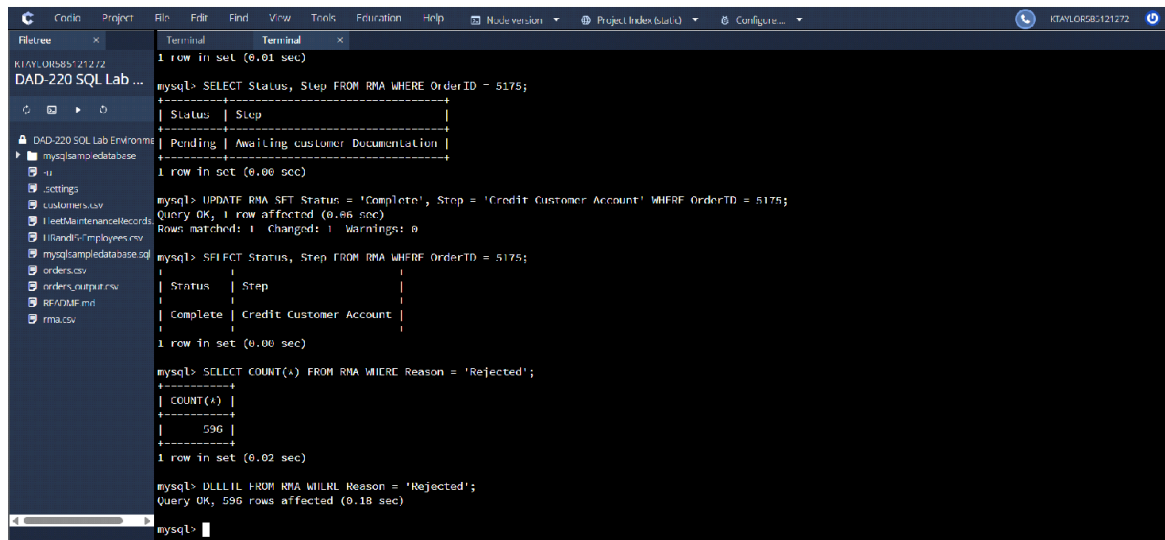
mysql> SELECT Status, Step FROM RMA WHERE OrderID = 5175;
+-----+-----+
| Status | Step |
+-----+-----+
| Pending | Awaiting customer Documentation |
+-----+-----+
1 row in set (0.06 sec)

mysql> UPDATE RMA SET Status = 'Complete', Step = 'Credit Customer Account' WHERE OrderID = 5175;
Query OK, 1 row affected (0.06 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 (0.06 sec)

mysql>
```

Deleting RMA records where Reason = Rejected



```
mysql> SELECT Status, Step FROM RMA WHERE OrderID = 5175;
+-----+-----+
| Status | Step |
+-----+-----+
| Pending | Awaiting customer Documentation |
+-----+-----+
1 row in set (0.01 sec)

mysql> UPDATE RMA SET Status = 'Complete', Step = 'Credit Customer Account' WHERE OrderID = 5175;
Query OK, 1 row affected (0.06 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)

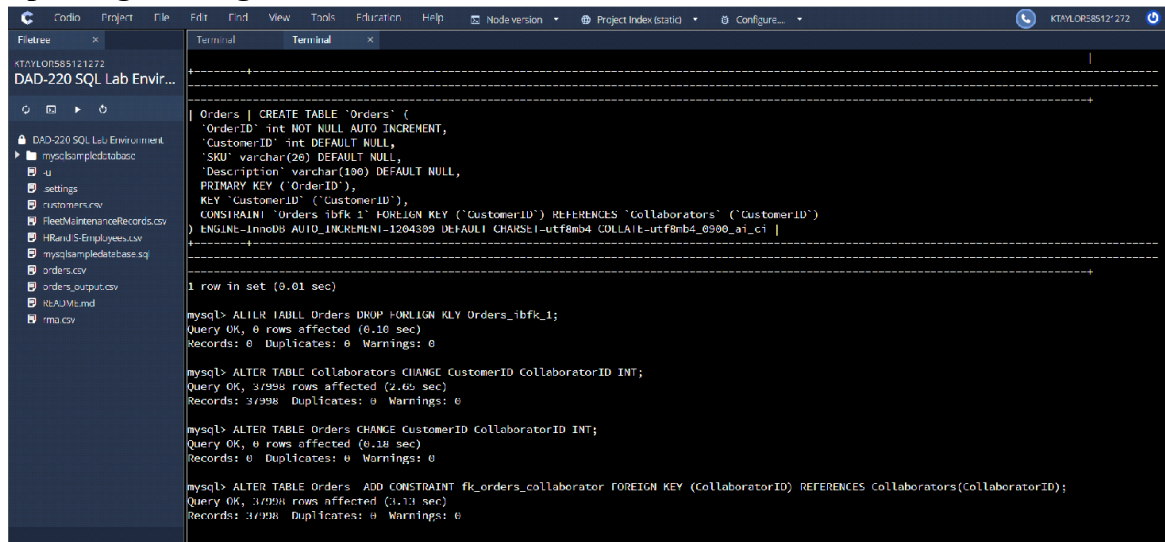
mysql> SELECT COUNT(*) FROM RMA WHERE Reason = 'Rejected';
+-----+
| COUNT(*) |
+-----+
| 596 |
+-----+
1 row in set (0.02 sec)

mysql> DELETE FROM RMA WHERE Reason = 'Rejected';
Query OK, 596 rows affected (0.18 sec)

mysql>
```

First I showed the amount with 'Rejected' as the reason. There were 596 records. Then I deleted them to crosscheck the amount.

Updating Existing Tables



```
mysql> CREATE TABLE `Orders` (
  `OrderID` int NOT NULL AUTO INCREMENT,
  `CustomerID` int DEFAULT NULL,
  `SKU` varchar(26) DEFAULT NULL,
  `Description` varchar(190) DEFAULT NULL,
  PRIMARY KEY (`OrderID`),
  KEY `CustomerID` (`CustomerID`),
  CONSTRAINT `Orders_ibfk_1` FOREIGN KEY (`CustomerID`) REFERENCES `Collaborators` (`CustomerID`)
) ENGINE=InnoDB AUTO_INCREMENT=1204399 DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |
+-----+
1 row in set (0.01 sec)

mysql> ALTER TABLE Orders DROP FOREIGN KEY Orders_ibfk_1;
Query OK, 0 rows affected (0.10 sec)
Records: 0 Duplicates: 0 Warnings: 0

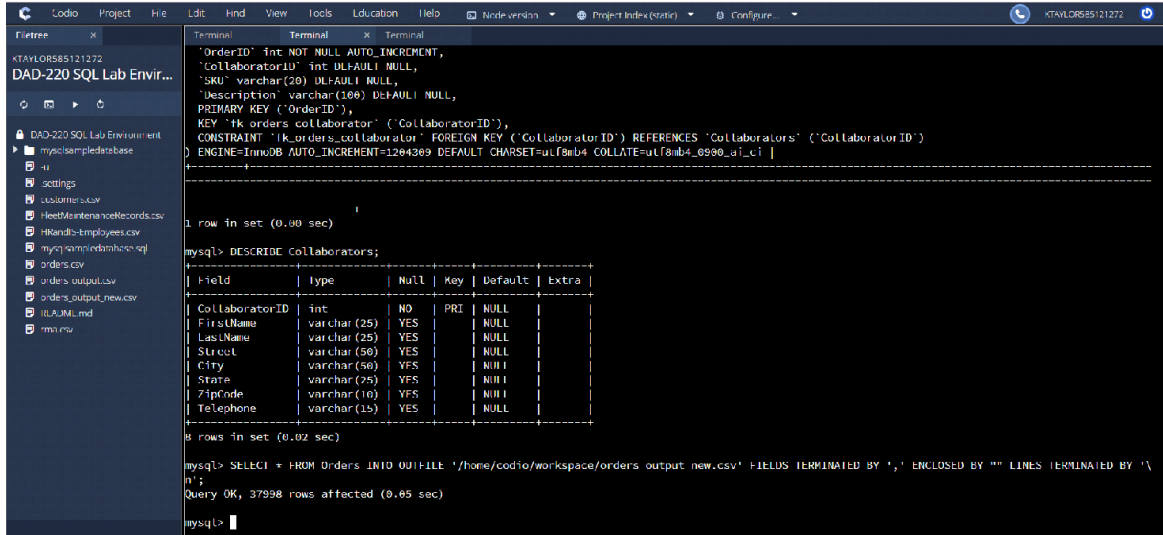
mysql> ALTER TABLE Collaborators CHANGE CustomerID CollaboratorID INT;
Query OK, 3/998 rows affected (2.65 sec)
Records: 3/998 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE Orders CHANGE CustomerID CollaboratorID INT;
Query OK, 0 rows affected (0.18 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> ALTER TABLE Orders ADD CONSTRAINT fk_orders_collaborator FOREIGN KEY (CollaboratorID) REFERENCES Collaborators(CollaboratorID);
Query OK, 3/998 rows affected (1.11 sec)
Records: 3/998 Duplicates: 0 Warnings: 0
```

I deleted the foreign key, changed all instances of "Customer" to "Collaborators", and then added the foreign key back.

Creating an Output File



```

-- OrderID int NOT NULL AUTO_INCREMENT,
-- CollaboratorID int DEFAULT NULL,
-- SKU varchar(20) DEFAULT NULL,
-- Description varchar(100) DEFAULT NULL,
PRIMARY KEY (`OrderID`),
KEY `fk_orders_collaborator` (`CollaboratorID`),
CONSTRAINT `fk_orders_collaborator` FOREIGN KEY (`CollaboratorID`) REFERENCES `Collaborators` (`CollaboratorID`)
) ENGINE=InnoDB AUTO_INCREMENT=1204309 DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci |

-----
1 row in set (0.00 sec)

mysql> DESCRIBE Collaborators;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| CollaboratorID | int | NO | PRI | NULL | |
| FirstName | varchar(25) | YES | | NULL | |
| LastName | varchar(25) | YES | | NULL | |
| Street | varchar(50) | YES | | NULL | |
| City | varchar(50) | YES | | NULL | |
| State | varchar(25) | YES | | NULL | |
| ZipCode | varchar(10) | YES | | NULL | |
| Telephone | varchar(15) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.02 sec)

mysql> SELECT * FROM Orders INTO OUTFILE '/home/codio/workspace/orders/output_new.csv' FIELDS TERMINATED BY ',' ENCLOSED BY '"' LINES TERMINATED BY '\n';
Query OK, 37998 rows affected (0.05 sec)

mysql>

```

I used SQL to pull data from the Orders table and saved the results as a .csv file for easy sharing and analysis.