

# AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH



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**TOPIC:** A customer complaint tracking system to manage customer complaints, resolution, and customer feedback.

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**Course:** Introduction to Database

**Section :** [K]

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# **A customer complaint tracking system to manage customer complaints, resolution, and customer feedback.**

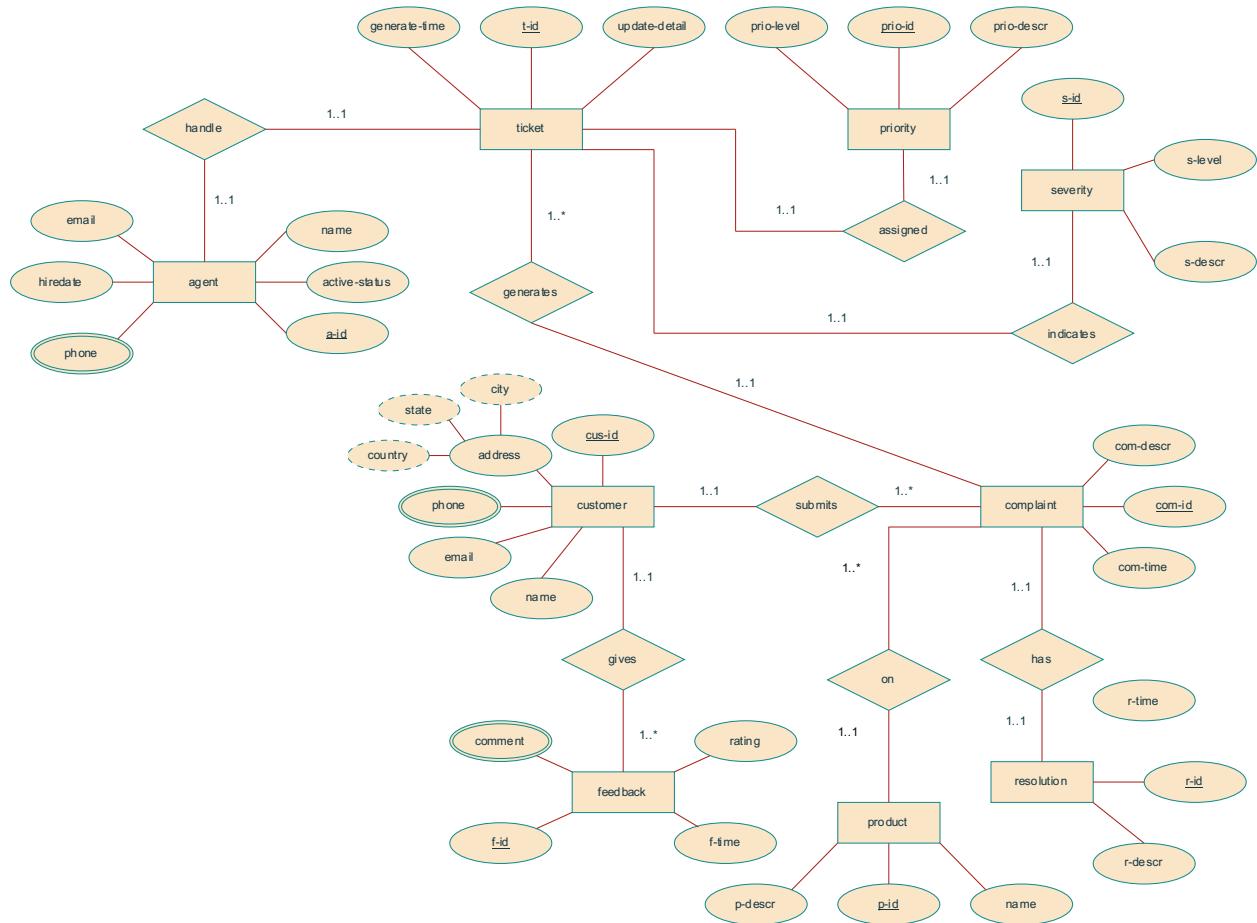
## **1. Introduction**

Our project is a customer complaint tracking system that helps businesses manage customer complaints, track their resolution, and gather feedback. The system is designed to improve customer satisfaction and experience. We are using MySQL, a powerful relational database management system for efficient data storage and retrieval.

## **2. Case Study**

In a Customer Complaint Tracking System, a customer can file multiple complaints. Each complaint has a unique ID, description, and time of submission. A complaint can be associated with a single ticket which contains details of its generation time and updates. Complaints can have different priorities and severities, each identified by a unique ID, level, and description. The system also maintains a list of agents who can work on complaints, identified by an ID, name, email, phone, hire date, and active status. A customer can provide feedback on the resolution of their complaint, including a rating, time of submission, and comments. The system also maintains information about the products associated with the complaints, identified by a product ID, description, and name. Finally, there is a resolution table which stores details about the resolution of each complaint, including its unique ID, time of resolution, and description.

### 3. ER Diagram



## 4. Normalization

### CUSTOMER → COMPLAINT:

**UNF:** cus-id, name, e-mail, phone, address, city, state, country, com-descr, com-id, com-time

**1NF:** cus-id, name, e-mail, phone, address, city, state, country, com-descr, com-id, com-time

**2NF:** 1. cus-id, name, e-mail, phone, address, city, state, country

2. com-id (PK), com-descr, com-time, cus-id (FK)

**3NF:** 1. cus-id, name, e-mail, phone, city

2. com-id, com-decr, com-time, cus-id

3. city, state, country

### COMPLAINT → TICKET:

**UNF:** com-id, com-decr, com-time, t-id, generate-time, update-details.

**1NF:** com-id, com-decr, com-time, t-id, generate-time, update-details

**2NF:** 1. com-id, com-decr, com-time

2. t-id (PK), generate-time, update-details, com-id(FK)

**3NF:** SAME AS 2NF

### TICKET → SEVERITY:

**UNF:** t-id, generate-time, update-details, s-id, s-level, s-decr

**1NF:** : t-id, generate-time, update-details, s-id, s-level, s-decr

**2NF:** 1. t-id (PK), generate-time, update-details, s-id (FK)

2. s-id, s-level, s-decr

**3NF:** SAME AS 2NF

### TICKET → PRIORITY:

**UNF:** t-id, generate-time, details, prio-id prio-level, prio\_descr

**1NF:** t-id, generate-time, details, prio-id prio-level, prio-descr

**2NF:** 1. t-id (PK), generate-time, details, prio-id (FK)

2. prio\_id, prio-level, prio-descr

**3NF:** SAME AS 2NF

### TICKET → AGENT:

**UNF:** t-id, generate-time, update-details, a-id, a-name, active-status, email, a-phone, hiredate.

**1NF:** t-id, generate-time, update-details, a-id, name, active-status, email, a-phone, hiredate.

**2NF:** 1. t-id (PK), generate-time, update-details, a-id (FK)

2. a-id, a-name, active-status, email, phone, hiredate

**3NF:** SAME AS 2N

### **COMPLAINT → RESOLUTION:**

**UNF:** com-id, com-descr, com-time, r-id, r-descr, r-time

**1NF:** com-id, com-descr, com-time, r-id, r-descr, r-time

**2NF:** 1.com-id (PK), com-descr, com-time, r-id (FK)  
2. r-id, r-descr, r-time

**3NF:** SAME AS 2NF.

### **CUSTOMER → FEEDBACK:**

**UNF:** cus-id, name, email, phone, address, city, state, country, f-id, rating, f-time, comment

**1NF:** cus-id, name, email, phone, address, city, state, country, f-id, rating, f-time, comment

#### **2NF:**

1. cus-id, name, email, phone, address, city, state, country
2. f-id (PK)rating, f-time, comment, cus-id (FK)

#### **3NF:**

1. cus-id, name, email, phone, city
2. f-id (PK), rating, f-time, comment, cus-id (FK)
3. city, state, country

### **COMPLAINT → PRODUCT:**

**UNF:** com-id, com-descr, com-time, p-id, name, p-descr

**1NF:** com-id, com-descr, com-time, p-id, name, p-descr

**2NF:** 1. com-id(PK), com-descr, com-time, p-id(FK)  
2. p-id, name, p-descr,

**3NF:** SAME AS 2NF.

## 5. Finalization

1. cus-id, name, email, city, phone.
2. com-id (PK), com-descr, com-time, cus-id (F K)
3. city, state, country
4. com-id, com-descrs, com-time
5. t-id(PK), generate-time, update-detail, com-id(FK)
6. t-id (PK), generate-time, update-detail, s-id(FK)
7. s-id, s-level, s-descr
8. t-id(PK), generate-time, update-detail, priod-id(FK)
9. priod-id, prio-level, prio-descr
10. t-id(PK), generate-time, update-detail, a-id(FK)
11. a-id, name, active-status, email, phone, hiredate
12. com-id, com-descr, com-time, r-id(FK)
13. r-id, r-descr, r-time
14. p-id (PK), name, p-descr
15. f-id (PK), rating, f-time, comment, cus-id (FK)
16. ~~cus-id(PK), name, email, phone, city~~
17. ~~city, state, country~~
18. ~~com-id(PK), com-descr, com-time, p-id(FK)~~

### Final tables:

1. cus-id, name, email, city, phone.
2. com-id (PK), com-descr, com-time, cus-id (F K), r-id(FK), p-id(FK)
3. city, state, country
4. t-id(PK), generate-time, update-detail, com-id(FK), s-id(FK), priod-id(FK), a-id(FK)
5. s-id, s-level, s-descr
6. priod-id, prio-level, prio-descr
7. a-id, name, active-status, email, phone, hiredate
8. r-id, r-descr, r-time
9. p-id (PK), name, p-descr
10. f-id (PK), rating, f-time, comment, cus-id (FK)

## 6. Database Creation

```
Last login: Thu Apr  6 01:56:06 on ttys000
wasik@Wasiks-MacBook-Air ~ % mysql -u root -p
Enter password: ↵
```

```
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 36
Server version: 8.0.32 MySQL Community Server - GPL

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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> CREATE DATABASE ComplaintTrackingSystem;
Query OK, 1 row affected (0.00 sec)

mysql> SHOW DATABASES;
+-----+
| Database      |
+-----+
| ComplaintTrackingSystem |
| information_schema |
| mysql          |
| performance_schema |
| sys            |
+-----+
5 rows in set (0.01 sec)
```

## Creating User

```
mysql> CREATE USER 'wasik'@'localhost' IDENTIFIED BY '1234';
Query OK, 0 rows affected (0.05 sec)
```

## Grant permission to User

```
( SELECT, INSERT, UPDATE, DELETE, CREATE, ALTER, DROP, REFERENCES)
mysql> GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, ALTER, DROP, REFERENCES
      -> ON ComplaintTrackingSystem.* 
      -> TO 'wasik'@'localhost';
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.01 sec)
```

## Log in as User

```
mysql> exit
Bye
wasik@Wasiks-MacBook-Air ~ % mysql -u wasik -p
Enter password: ?
```

```
mysql> USE ComplaintTrackingSystem;
Database changed
```

## 7. Table Creation

-- customer

```
mysql> CREATE TABLE customer (
    -> cus_id int NOT NULL AUTO_INCREMENT,
    -> name VARCHAR(40),
    -> email VARCHAR(40),
    -> city VARCHAR(20),
    -> phone VARCHAR(20),
    -> PRIMARY KEY (cus_id)
    -> );
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> DESCRIBE customer;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+
| cus_id | int       | NO   | PRI | NULL    | auto_increment |
| name   | varchar(40) | YES  |     | NULL    |                |
| email  | varchar(40) | YES  |     | NULL    |                |
| city   | varchar(20) | YES  |     | NULL    |                |
| phone  | varchar(20) | YES  |     | NULL    |                |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

### -- address table

```
mysql> CREATE TABLE address (
    -> city VARCHAR(20),
    -> state VARCHAR(20),
    -> country VARCHAR(20),
    -> PRIMARY KEY (city)
    -> );
Query OK, 0 rows affected (0.01 sec)

mysql> DESCRIBE address;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| city  | varchar(20) | NO   | PRI   | NULL    |       |
| state | varchar(20) | YES  |       | NULL    |       |
| country | varchar(20) | YES  |       | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

### -- severity table

```
mysql> CREATE TABLE severity (
    -> s_id int NOT NULL,
    -> s_level int UNIQUE,
    -> s_descr VARCHAR(200),
    -> PRIMARY KEY (s_id)
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> DESCRIBE severity;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| s_id  | int    | NO   | PRI   | NULL    |       |
| s_level | int   | YES  | UNI   | NULL    |       |
| s_descr | varchar(200) | YES  |       | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)
```

```

mysql> ALTER TABLE severity
      -> MODIFY COLUMN s_level VARCHAR(10);
Query OK, 0 rows affected (0.06 sec)
Records: 0  Duplicates: 0  Warnings: 0

```

### -- priority table

```

mysql> CREATE TABLE priority (
      -> prio_id int NOT NULL,
      -> prio_level VARCHAR(10) UNIQUE,
      -> prio_descr VARCHAR(200),
      -> PRIMARY KEY (prio_id)
      -> );
Query OK, 0 rows affected (0.07 sec)

mysql> DESCRIBE priority;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| prio_id | int | NO | PRI | NULL | |
| prio_level | varchar(10) | YES | UNI | NULL | |
| prio_descr | varchar(200) | YES | | NULL | |
+-----+-----+-----+-----+-----+
3 rows in set (0.02 sec)

```

### -- resolution table

```

mysql> CREATE TABLE resolution (
      -> r_id INT NOT NULL AUTO_INCREMENT,
      -> r_descr VARCHAR(200),
      -> r_time TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
      -> PRIMARY KEY (r_id)
      -> );
Query OK, 0 rows affected (0.01 sec)

mysql> DESCRIBE resolution;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| r_id | int | NO | PRI | NULL | auto_increment |
| r_descr | varchar(200) | YES | | NULL | |
| r_time | timestamp | YES | | CURRENT_TIMESTAMP | DEFAULT_GENERATED |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

## -- agent table

```
mysql> CREATE TABLE agent (
    -> a_id INT NOT NULL,
    -> name VARCHAR(40),
    -> active_status VARCHAR(20) NOT NULL,
    -> email VARCHAR(40),
    -> phone VARCHAR(20),
    -> hiredate DATE DEFAULT (CURRENT_DATE),
    -> PRIMARY KEY (a_id)
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql> DESCRIBE agent;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| a_id | int | NO | PRI | NULL |       |
| name | varchar(40) | YES |       | NULL |       |
| active_status | varchar(20) | NO |       | NULL |       |
| email | varchar(40) | YES |       | NULL |       |
| phone | varchar(20) | YES |       | NULL |       |
| hiredate | date | YES |       | curdate() | DEFAULT_GENERATED |
+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

## -- complaint table

```
mysql> CREATE TABLE complaint (
    -> com_id INT NOT NULL AUTO_INCREMENT,
    -> com_descr VARCHAR(300) NOT NULL,
    -> com_time TIMESTAMP DEFAULT (CURRENT_TIMESTAMP),
    -> cus_id INT NOT NULL,
    -> r_id INT,
    -> p_id INT,
    -> PRIMARY KEY (com_id),
    -> FOREIGN KEY (cus_id) REFERENCES customer(cus_id),
    -> FOREIGN KEY (r_id) REFERENCES resolution(r_id),
    -> FOREIGN KEY (p_id) REFERENCES product(p_id)
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql> DESCRIBE complaint;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| com_id | int | NO | PRI | NULL | auto_increment |
| com_descr | varchar(300) | NO |       | NULL |       |
| com_time | timestamp | YES |       | now() | DEFAULT_GENERATED |
| cus_id | int | NO | MUL | NULL |       |
| r_id | int | YES | MUL | NULL |       |
| p_id | int | YES | MUL | NULL |       |
+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

## -- product table

```
mysql> CREATE TABLE product (
    -> p_id INT NOT NULL,
    -> name VARCHAR(40),
    -> p_descr VARCHAR(200),
    -> PRIMARY KEY (p_id)
    -> );
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> DESCRIBE product;
```

Field	Type	Null	Key	Default	Extra
p_id	int	NO	PRI	NULL	
name	varchar(40)	YES		NULL	
p_descr	varchar(200)	YES		NULL	

3 rows in set (0.00 sec)

## -- ticket table

```
mysql> CREATE TABLE ticket (
    -> t_id INT NOT NULL AUTO_INCREMENT,
    -> generate_time TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    -> update_time TIMESTAMP,
    -> com_id INT NOT NULL UNIQUE,
    -> a_id INT,
    -> s_id INT,
    -> prio_id INT,
    -> PRIMARY KEY (t_id),
    -> FOREIGN KEY (com_id) REFERENCES complaint(com_id),
    -> FOREIGN KEY (a_id) REFERENCES agent(a_id),
    -> FOREIGN KEY (s_id) REFERENCES severity(s_id),
    -> FOREIGN KEY (prio_id) REFERENCES priority(prio_id)
    -> );
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> DESCRIBE ticket;
```

Field	Type	Null	Key	Default	Extra
t_id	int	NO	PRI	NULL	auto_increment
generate_time	timestamp	YES		CURRENT_TIMESTAMP	DEFAULT_GENERATED
update_time	timestamp	YES		NULL	
com_id	int	NO	UNI	NULL	
a_id	int	YES	MUL	NULL	
s_id	int	YES	MUL	NULL	
prio_id	int	YES	MUL	NULL	

7 rows in set (0.00 sec)

## -- feedback table

```
mysql> CREATE TABLE product (
    -> p_id INT NOT NULL,
    -> name VARCHAR(40),
    -> p_descr VARCHAR(200),
    -> PRIMARY KEY (p_id)
    -> );
Query OK, 0 rows affected (0.01 sec)

mysql> DESCRIBE product;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| p_id  | int    | NO   | PRI   | NULL    |        |
| name   | varchar(40) | YES  |        | NULL    |        |
| p_descr | varchar(200) | YES  |        | NULL    |        |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> CREATE TABLE feedback (
    -> f_id INT AUTO_INCREMENT,
    -> rating INT(1),
    -> comment VARCHAR(200),
    -> cus_id INT NOT NULL,
    -> PRIMARY KEY (f_id),
    -> FOREIGN KEY (cus_id) REFERENCES customer(cus_id)
    -> );
Query OK, 0 rows affected, 1 warning (0.03 sec)

mysql> DESCRIBE feedback;
+-----+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra      |
+-----+-----+-----+-----+-----+-----+
| f_id  | int    | NO   | PRI   | NULL    | auto_increment |
| rating | int    | YES  |        | NULL    |             |
| comment | varchar(200) | YES  |        | NULL    |             |
| cus_id | int    | NO   | MUL   | NULL    |             |
+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)
```

## Total tables

```
mysql> SHOW TABLES;
+-----+
| Tables_in_complainttrackingsystem |
+-----+
| address
| agent
| complaint
| customer
| feedback
| priority
| product
| resolution
| severity
| ticket
+-----+
10 rows in set (0.00 sec)
```

## 8. Value Insertion

-- customer table

```
mysql> INSERT INTO customer VALUES (1511, "John Doe", "johndoe@gmail.com", "New York City", "123-456-7890");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO customer VALUES (1512, "Jane Smith", "janesmith@gmail.com", "Los Angeles", "987-654-3210");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO customer VALUES (1513, "Bob Johnson", "bjohnson@gmail.com", "Chicago", "555-123-4567");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1514, "Mary Brown", "marybrown@gmail.com", "Houston", "789-456-1230");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1515, "David Lee", "davidlee@gmail.com", "San Francisco", "555-555-5555");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1516, "Sarah Nguyen", "sarahnguyen@gmail.com", "Seattle", "111-222-3333");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1517, "Michael Chen", "michaelchen@gmail.com", "Boston", "444-444-4444");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1518, "Jennifer Kim", "jenniferkim@gmail.com", "Boston", "777-777-7777");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1519, "Tom Wilson", "tomwilson@gmail.com", "Miami", "123-456-7890");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1520, "Emily Rodriguez", "emilyrodriguez@gmail.com", "Austin", "555-555-5585");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1521, "Ema Watson", "emawatson@gmail.com", "New York", "122-645-8879");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1522, "Soap Mactravish", "soapMac@gmail.com", "Los Angeles", "843-467-3320");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1523, "Jack Johnson", "jackjohnson@gmail.com", "Miami", "305-123-4567");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1524, "Samantha Lee", "samlee@gmail.com", "San Francisco", "415-555-5555");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1525, "George Smith", "georgesmith@gmail.com", "Chicago", "312-555-1234");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1526, "Emma Garcia", "emmagarcia@gmail.com", "Houston", "713-789-1234");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1527, "William Davis", "williamdavis@gmail.com", "New York City", "212-555-5555");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1528, "Megan Brown", "meganbrown@gmail.com", "Los Angeles", "818-555-5555");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1529, "Ryan Wilson", "ryanwilson@gmail.com", "Seattle", "206-555-5555");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1530, "Olivia Nguyen", "olivian@gmail.com", "Boston", "617-555-5555");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO customer VALUES (1531, "Benjamin Kim", "benkim@gmail.com", "Houston", "202-555-5555");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1532, "Sophia Rodriguez", "sophiarodriguez@gmail.com", "Austin", "512-555-5555");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1533, "Jacob Martinez", "jacobmartinez@gmail.com", "New York City", "619-555-5555");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO customer VALUES (1534, "Ava Hernandez", "avahernandez@gmail.com", "Miami", "303-555-5555");
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM customer;
+-----+-----+-----+-----+
| cus_id | name | email | city | phone |
+-----+-----+-----+-----+
| 1511 | John Doe | johndoe@gmail.com | New York City | 123-456-7890 |
| 1512 | Jane Smith | janesmith@gmail.com | Los Angeles | 987-654-3210 |
| 1513 | Bob Johnson | bjohnson@gmail.com | Chicago | 555-123-4567 |
| 1514 | Mary Brown | marybrown@gmail.com | Houston | 789-456-1230 |
| 1515 | David Lee | davidlee@gmail.com | San Francisco | 555-555-5555 |
| 1516 | Sarah Nguyen | sarahnguyen@gmail.com | Seattle | 111-222-3333 |
| 1517 | Michael Chen | michaelchen@gmail.com | Boston | 444-444-4444 |
| 1518 | Jennifer Kim | jenniferkim@gmail.com | Boston | 777-777-7777 |
| 1519 | Tom Wilson | tomwilson@gmail.com | Miami | 123-456-7890 |
| 1520 | Emily Rodriguez | emilyrodriguez@gmail.com | Austin | 555-555-5585 |
| 1521 | Ema Watson | emawatson@gmail.com | New York | 122-645-8879 |
| 1522 | Soap Mactravish | soapMac@gmail.com | Los Angeles | 843-467-3320 |
| 1523 | Jack Johnson | jackjohnson@gmail.com | Miami | 305-123-4567 |
| 1524 | Samantha Lee | samlee@gmail.com | San Francisco | 415-555-5555 |
| 1525 | George Smith | georgesmith@gmail.com | Chicago | 312-555-1234 |
| 1526 | Emma Garcia | emmagarcia@gmail.com | Houston | 713-789-1234 |
| 1527 | William Davis | williamdavis@gmail.com | New York City | 212-555-5555 |
| 1528 | Megan Brown | meganbrown@gmail.com | Los Angeles | 818-555-5555 |
| 1529 | Ryan Wilson | ryanwilson@gmail.com | Seattle | 206-555-5555 |
| 1530 | Olivia Nguyen | olivian@gmail.com | Boston | 617-555-5555 |
| 1531 | Benjamin Kim | benkim@gmail.com | Houston | 202-555-5555 |
| 1532 | Sophia Rodriguez | sophiarodriguez@gmail.com | Austin | 512-555-5555 |
| 1533 | Jacob Martinez | jacobmartinez@gmail.com | New York City | 619-555-5555 |
| 1534 | Ava Hernandez | avahernandez@gmail.com | Miami | 303-555-5555 |
+-----+-----+-----+-----+
24 rows in set (0.00 sec)
```

## -- address table

```
mysql> INSERT INTO address VALUES ("New York City", "New York", "USA");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO address VALUES ("Los Angeles", "California", "USA");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO address VALUES ("Chicago", "Illinois", "USA");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO address VALUES ("Houston", "Texas", "USA");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO address VALUES ("San Francisco", "California", "USA");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO address VALUES ("Seattle", "Washington", "USA");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO address VALUES ("Boston", "Massachusetts", "USA");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO address VALUES ("Washington DC", "Washington DC", "USA");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO address VALUES ("Miami", "Florida", "USA");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO address VALUES ("Austin", "Texas", "USA");
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM address;
+-----+-----+-----+
| city | state | country |
+-----+-----+-----+
| Austin | Texas | USA
| Boston | Massachusetts | USA
| Chicago | Illinois | USA
| Houston | Texas | USA
| Los Angeles | California | USA
| Miami | Florida | USA
| New York City | New York | USA
| San Francisco | California | USA
| Seattle | Washington | USA
| Washington DC | Washington DC | USA
+-----+-----+-----+
10 rows in set (0.00 sec)
```

## -- agent table

```
mysql> INSERT INTO agent VALUES (2955, "David Kim", "active", "davidkim@gmail.com", "111-456-7890", "2021-01-01");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO agent VALUES (2956, "Sarah Park", "anactive", "sarahpark@gmail.com", "556-575-5555", "2021-02-01");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO agent VALUES (2957, "John Lee", "active", "johnlee@gmail.com", "424-444-4444", "2021-03-01");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO agent VALUES (2958, "Jane Kim", "active", "janekim@gmail.com", "737-777-7777", "2021-04-01");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO agent VALUES (2959, "Michael Park", "inactive", "michaelpark@gmail.com", "111-222-3333", "2021-05-01");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO agent VALUES (2960, "Jenny Lee", "active", "jennylee@gmail.com", "448-644-4444", "2021-06-01");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO agent VALUES (2961, "Ryan Kim", "inactive", "ryankim@gmail.com", "123-456-7890", "2021-07-01");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO agent VALUES (2962, "Grace Park", "active", "gracepark@gmail.com", "505-595-5555", "2021-08-01");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO agent VALUES (2963, "Steve Lee", "active", "stevelee@gmail.com", "444-888-4444", "2021-09-01");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO agent VALUES (2964, "Jessica Kim", "inactive", "jessica@gmail.com", "111-789-567", "2021-09-20");
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM agent;
+-----+-----+-----+-----+-----+
| a_id | name | active_status | email | phone | hiredate |
+-----+-----+-----+-----+-----+
| 2955 | David Kim | active | davidkim@gmail.com | 111-456-7890 | 2021-01-01 |
| 2956 | Sarah Park | anactive | sarahpark@gmail.com | 556-575-5555 | 2021-02-01 |
| 2957 | John Lee | active | johnlee@gmail.com | 424-444-4444 | 2021-03-01 |
| 2958 | Jane Kim | active | janekim@gmail.com | 737-777-7777 | 2021-04-01 |
| 2959 | Michael Park | inactive | michaelpark@gmail.com | 111-222-3333 | 2021-05-01 |
| 2960 | Jenny Lee | active | jennylee@gmail.com | 448-644-4444 | 2021-06-01 |
| 2961 | Ryan Kim | inactive | ryankim@gmail.com | 123-456-7890 | 2021-07-01 |
| 2962 | Grace Park | active | gracepark@gmail.com | 505-595-5555 | 2021-08-01 |
| 2963 | Steve Lee | active | stevelee@gmail.com | 444-888-4444 | 2021-09-01 |
| 2964 | Jessica Kim | inactive | jessica@gmail.com | 111-789-567 | 2021-09-20 |
+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)
```

## -- severity table

```
mysql> INSERT INTO severity (s_id, s_level, s_descr) VALUES (1, 'Low', 'Minor issue that has minimal impact on operations');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO severity (s_id, s_level, s_descr) VALUES (2, 'Medium', 'Moderate issue that has some impact on operations');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO severity (s_id, s_level, s_descr) VALUES (3, 'High', 'Major issue that has significant impact on operations');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO severity (s_id, s_level, s_descr) VALUES (4, 'Critical', 'Critical issue that has severe impact on operations');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM severity;
+----+-----+-----+
| s_id | s_level | s_descr |
+----+-----+-----+
| 1 | Low      | Minor issue that has minimal impact on operations |
| 2 | Medium    | Moderate issue that has some impact on operations |
| 3 | High     | Major issue that has significant impact on operations |
| 4 | Critical  | Critical issue that has severe impact on operations |
+----+-----+-----+
4 rows in set (0.00 sec)
```

## -- product table

```
mysql> INSERT INTO product (p_id, name, p_descr) VALUES (1, 'Laptop', 'A personal computer for mobile use');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (2, 'Smartphone', 'A mobile phone that performs many of the functions of a computer');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (3, 'Smart TV', 'A television set with integrated Internet and interactive "Web 2.0" features');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (4, 'Tablet', 'A portable computer that uses a touchscreen as its primary input device');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (5, 'Headphones', 'A pair of small loudspeaker drivers worn on or around the head over a user\'s ears');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (6, 'Desktop Computer', 'A personal computer designed for regular use at a desk or workstation');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (7, 'Camera', 'A device used to capture still photographs or video footage');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (8, 'Gaming Console', 'A specialized computer system designed for playing video games');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (9, 'Smartwatch', 'A wearable computing device worn on the wrist that can run mobile apps and connect to a smartphone');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (10, 'Wireless Speaker', 'A speaker that can connect to a device using Bluetooth or Wi-Fi to play music or other audio');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (11, 'Printer', 'A device used to produce hard copies of digital documents or images');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (12, 'Fitness Tracker', 'A wearable device that tracks physical activity, heart rate, and other health metrics');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (13, 'External Hard Drive', 'A portable storage device that connects to a computer or other device via USB or another interface');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (14, 'Virtual Reality Headset', 'A device used to experience immersive virtual reality environments');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO product (p_id, name, p_descr) VALUES (15, 'E-reader', 'A device used to read electronic books and other digital publications');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM product;
+----+-----+-----+
| p_id | name          | p_descr           |
+----+-----+-----+
| 1 | Laptop        | A personal computer for mobile use
| 2 | Smartphone    | A mobile phone that performs many of the functions of a computer
| 3 | Smart TV       | A television set with integrated Internet and interactive "Web 2.0" features
| 4 | Tablet         | A portable computer that uses a touchscreen as its primary input device
| 5 | Headphones     | A pair of small loudspeaker drivers worn on or around the head over a user's ears
| 6 | Desktop Computer | A personal computer designed for regular use at a desk or workstation
| 7 | Camera         | A device used to capture still photographs or video footage
| 8 | Gaming Console | A specialized computer system designed for playing video games
| 9 | Smartwatch     | A wearable computing device worn on the wrist that can run mobile apps and connect to a smartphone
| 10 | Wireless Speaker | A speaker that can connect to a device using Bluetooth or Wi-Fi to play music or other audio
| 11 | Printer        | A device used to produce hard copies of digital documents or images
| 12 | Fitness Tracker | A wearable device that tracks physical activity, heart rate, and other health metrics
| 13 | External Hard Drive | A portable storage device that connects to a computer or other device via USB or another interface
| 14 | Virtual Reality Headset | A device used to experience immersive virtual reality environments
| 15 | E-reader        | A device used to read electronic books and other digital publications
+----+-----+-----+
15 rows in set (0.00 sec)
```

## -- resolution table

```
mysql> INSERT INTO resolution (r_id, r_descr) VALUES (435, 'Replaced laptop power supply');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (436, 'Replaced smartphone screen');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (437, 'Reset Smart TV network settings');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (438, 'Cleared tablet cache and optimized settings');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (439, 'Replaced defective headphone speaker');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (440, 'Replaced laptop battery');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (441, 'Replaced smartphone battery');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (442, 'Reprogrammed Smart TV remote control');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (443, 'Restarted tablet and cleared RAM');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (444, 'Replaced defective headphone cord');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (445, 'Replaced graphics card in desktop computer');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (446, 'Replaced laptop hard drive and restored operating system');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (447, 'Replaced camera lens');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (448, 'Calibrated gaming console display settings');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (449, 'Reset smartwatch to factory settings and reconnected to phone');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (450, 'Reset wireless speaker and reconnected to Bluetooth devices');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (451, 'Cleaned and recalibrated printer ink cartridges');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (452, 'Replaced fitness tracker battery and recalibrated step tracker');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (453, 'Reformatted external hard drive and updated drivers');
Query OK, 1 row affected (0.01 sec)
```

```

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (454, 'Adjusted virtual reality headset display settings to reduce motion sickness');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO resolution (r_id, r_descr) VALUES (455, 'Replaced e-reader battery and restored factory settings');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM resolution;
+----+-----+-----+
| r_id | r_descr | r_time |
+----+-----+-----+
| 435 | Replaced laptop power supply | 2023-05-03 02:01:01 |
| 436 | Replaced smartphone screen | 2023-05-03 02:01:05 |
| 437 | Reset Smart TV network settings | 2023-05-03 02:01:11 |
| 438 | Cleared tablet cache and optimized settings | 2023-05-03 02:01:15 |
| 439 | Replaced defective headphone speaker | 2023-05-03 02:01:18 |
| 440 | Replaced laptop battery | 2023-05-03 02:01:22 |
| 441 | Replaced smartphone battery | 2023-05-03 02:01:26 |
| 442 | Reprogrammed Smart TV remote control | 2023-05-03 02:01:30 |
| 443 | Restarted tablet and cleared RAM | 2023-05-03 02:01:33 |
| 444 | Replaced defective headphone cord | 2023-05-03 02:01:36 |
| 445 | Replaced graphics card in desktop computer | 2023-05-03 02:01:39 |
| 446 | Replaced laptop hard drive and restored operating system | 2023-05-03 02:01:42 |
| 447 | Replaced camera lens | 2023-05-03 02:01:46 |
| 448 | Calibrated gaming console display settings | 2023-05-03 02:01:53 |
| 449 | Reset smartwatch to factory settings and reconnected to phone | 2023-05-03 02:02:00 |
| 450 | Reset wireless speaker and reconnected to Bluetooth devices | 2023-05-03 02:02:04 |
| 451 | Cleaned and recalibrated printer ink cartridges | 2023-05-03 02:02:15 |
| 452 | Replaced fitness tracker battery and recalibrated step tracker | 2023-05-03 02:02:25 |
| 453 | Reformatted external hard drive and updated drivers | 2023-05-03 02:02:31 |
| 454 | Adjusted virtual reality headset display settings to reduce motion sickness | 2023-05-03 02:02:36 |
| 455 | Replaced e-reader battery and restored factory settings | 2023-05-03 02:02:43 |
+----+-----+-----+
21 rows in set (0.00 sec)

```

## -- complaint table

```
mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (690, 'The laptop is not powering on', 1511, 435, 1);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (691, 'The smartphone screen is cracked', 1512, 436, 2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (692, 'The Smart TV is not connecting to the Internet', 1513, 437, 3);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (693, 'The tablet is running slowly', 1514, 438, 4);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (694, 'The headphones are not producing sound', 1516, 439, 5);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (695, 'The laptop battery is not charging', 1517, 440, 1);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (696, 'The smartphone is not charging', 1518, 441, 2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (697, 'The Smart TV remote control is not working', 1519, 442, 3);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (698, 'The tablet screen is frozen', 1520, 443, 4);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (699, 'The headphones are producing distorted sound', 1521, 444, 5);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (700, 'The desktop computer is not booting up', 1522, 446, 6);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (701, 'The camera lens is not focusing properly', 1523, 447, 7);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (702, 'The gaming console is displaying an error message', 1524, 448, 8);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (703, 'The smartwatch is not receiving notifications', 1525, 449, 9);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (704, 'The wireless speaker is not connecting to Bluetooth', 1526, 450, 10);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (705, 'The printer is not printing properly', 1527, 451, 11);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (706, 'The fitness tracker is not tracking steps accurately', 1528, 452, 12);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (707, 'The external hard drive is not being recognized by the computer', 1529, 453, 13);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (708, 'The virtual reality headset is causing nausea', 1530, 454, 14);
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO complaint (com_id, com_descr, cus_id, r_id, p_id) VALUES (709, 'The e-reader is not turning on', 1531, 455, 15);
Query OK, 1 row affected (0.01 sec)
```

```
mysql> SELECT * FROM complaint;
```

com_id	com_descr	com_time	cus_id	r_id	p_id
690	The laptop is not powering on	2023-05-03 02:11:35	1511	435	1
691	The smartphone screen is cracked	2023-05-03 02:11:42	1512	436	2
692	The Smart TV is not connecting to the Internet	2023-05-03 02:11:45	1513	437	3
693	The tablet is running slowly	2023-05-03 02:11:49	1514	438	4
694	The headphones are not producing sound	2023-05-03 02:11:52	1516	439	5
695	The laptop battery is not charging	2023-05-03 02:11:56	1517	440	1
696	The smartphone is not charging	2023-05-03 02:12:00	1518	441	2
697	The Smart TV remote control is not working	2023-05-03 02:12:04	1519	442	3
698	The tablet screen is frozen	2023-05-03 02:12:07	1520	443	4
699	The headphones are producing distorted sound	2023-05-03 02:12:10	1521	444	5
700	The desktop computer is not booting up	2023-05-03 02:12:13	1522	446	6
701	The camera lens is not focusing properly	2023-05-03 02:12:17	1523	447	7
702	The gaming console is displaying an error message	2023-05-03 02:12:20	1524	448	8
703	The smartwatch is not receiving notifications	2023-05-03 02:12:25	1525	449	9
704	The wireless speaker is not connecting to Bluetooth	2023-05-03 02:12:28	1526	450	10
705	The printer is not printing properly	2023-05-03 02:12:33	1527	451	11
706	The fitness tracker is not tracking steps accurately	2023-05-03 02:12:38	1528	452	12
707	The external hard drive is not being recognized by the computer	2023-05-03 02:12:42	1529	453	13
708	The virtual reality headset is causing nausea	2023-05-03 02:12:47	1530	454	14
709	The e-reader is not turning on	2023-05-03 02:12:51	1531	455	15

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

## -- feedback table

```
mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (101, 4, 'The technician was very knowledgeable and helpful. My laptop is running much faster now.', 1511);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (102, 3, 'The replacement screen looks great, but it took longer than expected to get it installed.', 1512);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (103, 5, 'The TV is working perfectly now after the technician reset the network settings. Thank you!', 1513);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (104, 2, 'I still seem to be having some issues with my tablet even after the technician cleared the cache and optimized the settings.', 1514);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (105, 4, 'The new speaker works great and the technician was very friendly and professional.', 1516);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (106, 5, 'The new battery has greatly improved the battery life of my laptop. Thank you!', 1517);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (107, 4, 'The technician replaced my smartphone battery quickly and efficiently. I appreciate the great service.', 1518);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (108, 3, 'The technician was able to fix my remote control, but it took longer than I expected.', 1519);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (109, 5, 'My tablet is running much smoother now after the technician restarted it and cleared the RAM.', 1520);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (100, 4, 'The technician was able to replace my headphone cord and now they work perfectly. Thank you!', 1521);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (111, 5, 'The new graphics card has greatly improved the performance of my desktop computer. Thank you!', 1522);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (112, 4, 'The technician was able to replace my laptop hard drive and restore the operating system, which has greatly improved its performance.', 1523);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (113, 3, 'The replacement camera lens works well, but it took longer than expected to get it installed.', 1524);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (114, 4, 'The gaming console display looks much better now that it has been calibrated. Thank you!', 1525);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (115, 5, 'My smartwatch is working perfectly now that it has been reset to factory settings and reconnected to my phone. Thank you!', 1526);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (116, 4, 'The wireless speaker is working well now that it has been reset and reconnected to my Bluetooth devices. Thank you!', 1527);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (117, 3, 'The technician was able to clean and recalibrate my printer ink cartridges, but it took longer than expected.', 1528);
Query OK, 1 row affected (0.00 sec)
```

```

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (118, 4, 'The technician was able to replace my fitness tracker battery and recalibrate the step tracker. Thank you!', 1529);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (119, 5, 'My external hard drive is working much better now that it has been reformatted and updated with new drivers. Thank you!', 1530);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (120, 3, 'The virtual reality headset display settings have been adjusted, but I am still experiencing some motion sickness.', 1531);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO feedback (f_id, rating, comment, cus_id) VALUES (121, 4, 'The technician was able to replace the battery and restore the factory settings on my e-reader, which has greatly improved its performance. Thank you!', 1532);
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM feedback;
+----+----+-----+
| f_id | rating | comment | cus_id |
+----+----+-----+
| 100 | 4 | The technician was able to replace my headphone cord and now they work perfectly. Thank you! | 1521 |
| 101 | 4 | The technician was very knowledgeable and helpful. My laptop is running much faster now. | 1511 |
| 102 | 3 | The replacement screen looks great, but it took longer than expected to get it installed. | 1512 |
| 103 | 5 | The TV is working perfectly now after the technician reset the network settings. Thank you! | 1513 |
| 104 | 2 | I still seem to be having some issues with my tablet even after the technician cleared the cache and optimized the settings. | 1514 |
| 105 | 4 | The new speaker works great and the technician was very friendly and professional. | 1516 |
| 106 | 5 | The new battery has greatly improved the battery life of my laptop. Thank you! | 1517 |
| 107 | 4 | The technician replaced my smartphone battery quickly and efficiently. I appreciate the great service. | 1518 |
| 108 | 3 | The technician was able to fix my remote control, but it took longer than I expected. | 1519 |
| 109 | 5 | My tablet is running much smoother now after the technician restarted it and cleared the RAM. | 1520 |
| 111 | 5 | The new graphics card has greatly improved the performance of my desktop computer. Thank you! | 1522 |
| 112 | 4 | The technician was able to replace my laptop hard drive and restore the operating system, which has greatly improved its performance. | 1523 |
| 113 | 3 | The replacement camera lens works well, but it took longer than expected to get it installed. | 1524 |
| 114 | 4 | The gaming console display looks much better now that it has been calibrated. Thank you! | 1525 |
| 115 | 5 | My smartwatch is working perfectly now that it has been reset to factory settings and reconnected to my phone. Thank you! | 1526 |
| 116 | 4 | The wireless speaker is working well now that it has been reset and reconnected to my Bluetooth devices. Thank you! | 1527 |
| 117 | 3 | The technician was able to clean and recalibrate my printer ink cartridges, but it took longer than expected. | 1528 |
| 118 | 4 | The technician was able to replace my fitness tracker battery and recalibrate the step tracker. Thank you! | 1529 |
| 119 | 5 | My external hard drive is working much better now that it has been reformatted and updated with new drivers. Thank you! | 1530 |
| 120 | 3 | The virtual reality headset display settings have been adjusted, but I am still experiencing some motion sickness. | 1531 |
| 121 | 4 | The technician was able to replace the battery and restore the factory settings on my e-reader, which has greatly improved its performance. Thank you! | 1532 |
+----+----+-----+
21 rows in set (0.00 sec)

```

## -- priority table

```

mysql> INSERT INTO priority (prio_id, prio_level, prio_descr) VALUES (1, 'Low', 'Low priority issue that can be resolved in a reasonable amount of time');
Query OK, 1 row affected (0.00 sec)

```

```

mysql> INSERT INTO priority (prio_id, prio_level, prio_descr) VALUES (2, 'Medium', 'Medium priority issue that needs attention but can wait');
Query OK, 1 row affected (0.00 sec)

```

```

mysql> INSERT INTO priority (prio_id, prio_level, prio_descr) VALUES (3, 'High', 'High priority issue that needs to be resolved urgently');
Query OK, 1 row affected (0.00 sec)

```

```

mysql> INSERT INTO priority (prio_id, prio_level, prio_descr) VALUES (4, 'Urgent', 'Urgent priority issue that needs immediate attention');
Query OK, 1 row affected (0.00 sec)

```

```

mysql> SELECT * FROM priority;

```

```

+----+----+-----+
| prio_id | prio_level | prio_descr |
+----+----+-----+
| 1 | Low | Low priority issue that can be resolved in a reasonable amount of time |
| 2 | Medium | Medium priority issue that needs attention but can wait |
| 3 | High | High priority issue that needs to be resolved urgently |
| 4 | Urgent | Urgent priority issue that needs immediate attention |
+----+----+-----+
4 rows in set (0.00 sec)

```

-- ticket table

```
mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-01-01 10:00:00', '2023-01-05 11:00:00', 690, 2955, 4, 3);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-01-15 11:30:00', '2023-01-07 12:30:00', 691, 2956, 4, 4);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-01-16 13:00:00', '2023-01-20 14:00:00', 692, 2957, 1, 1);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-01-25 15:00:00', '2023-02-01 16:00:00', 693, 2958, 2, 2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-01-27 17:00:00', '2023-02-02 18:00:00', 694, 2955, 3, 4);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-02-02 10:00:00', '2023-02-05 11:00:00', 695, 2960, 2, 3);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-02-10 12:00:00', '2023-03-15 13:00:00', 696, 2962, 2, 2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-02-18 14:00:00', '2023-02-22 01:00:00', 697, 2963, 2, 3);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-02-24 14:00:00', '2023-02-27 01:00:00', 698, 2964, 1, 2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-02-26 14:00:00', '2023-03-01 01:00:00', 699, 2955, 4, 4);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-03-08 10:00:00', '2023-03-11 11:00:00', 700, 2956, 2, 2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-03-12 11:30:00', '2023-03-16 12:30:00', 701, 2957, 3, 3);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-03-15 13:00:00', '2023-03-19 14:00:00', 702, 2958, 1, 2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-03-20 15:00:00', '2023-03-25 16:00:00', 703, 2959, 2, 2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-03-28 17:00:00', '2023-04-03 18:00:00', 704, 2960, 1, 2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-03-28 10:00:00', '2023-04-05 11:00:00', 705, 2961, 1, 2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-04-10 12:00:00', '2023-04-15 13:00:00', 706, 2962, 4, 2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-04-18 14:00:00', '2023-04-22 01:00:00', 707, 2963, 2, 4);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-04-24 14:00:00', '2023-04-28 01:00:00', 708, 2964, 4, 4);
Query OK, 1 row affected (0.00 sec)
```

```

mysql> INSERT INTO ticket (generate_time, update_time, com_id, a_id, s_id, prio_id) VALUES ('2023-04-26 14:00:00', '2023-04-29 01:00:00', 709, 2960, 1, 1);
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM ticket;
+---+-----+-----+-----+-----+
| t_id | generate_time | update_time | com_id | a_id | s_id | prio_id |
+---+-----+-----+-----+-----+
| 2 | 2023-01-01 10:00:00 | 2023-01-05 11:00:00 | 690 | 2955 | 4 | 3 |
| 3 | 2023-01-15 11:30:00 | 2023-01-07 12:30:00 | 691 | 2956 | 4 | 4 |
| 4 | 2023-01-16 13:00:00 | 2023-01-20 14:00:00 | 692 | 2957 | 1 | 1 |
| 5 | 2023-01-25 15:00:00 | 2023-02-01 16:00:00 | 693 | 2958 | 2 | 2 |
| 6 | 2023-01-27 17:00:00 | 2023-02-02 18:00:00 | 694 | 2955 | 3 | 4 |
| 7 | 2023-02-02 10:00:00 | 2023-02-05 11:00:00 | 695 | 2960 | 2 | 3 |
| 8 | 2023-02-10 12:00:00 | 2023-03-15 13:00:00 | 696 | 2962 | 2 | 2 |
| 9 | 2023-02-18 14:00:00 | 2023-02-22 01:00:00 | 697 | 2963 | 2 | 3 |
| 10 | 2023-02-24 14:00:00 | 2023-02-27 01:00:00 | 698 | 2964 | 1 | 2 |
| 11 | 2023-02-26 14:00:00 | 2023-03-01 01:00:00 | 699 | 2955 | 4 | 4 |
| 12 | 2023-03-08 10:00:00 | 2023-03-11 11:00:00 | 700 | 2956 | 2 | 2 |
| 13 | 2023-03-12 11:30:00 | 2023-03-16 12:30:00 | 701 | 2957 | 3 | 3 |
| 14 | 2023-03-15 13:00:00 | 2023-03-19 14:00:00 | 702 | 2958 | 1 | 2 |
| 15 | 2023-03-20 15:00:00 | 2023-03-25 16:00:00 | 703 | 2959 | 2 | 2 |
| 16 | 2023-03-28 17:00:00 | 2023-04-03 18:00:00 | 704 | 2960 | 1 | 2 |
| 17 | 2023-03-28 10:00:00 | 2023-04-05 11:00:00 | 705 | 2961 | 1 | 2 |
| 18 | 2023-04-10 12:00:00 | 2023-04-15 13:00:00 | 706 | 2962 | 4 | 2 |
| 19 | 2023-04-18 14:00:00 | 2023-04-22 01:00:00 | 707 | 2963 | 2 | 4 |
| 20 | 2023-04-24 14:00:00 | 2023-04-28 01:00:00 | 708 | 2964 | 4 | 4 |
| 21 | 2023-04-26 14:00:00 | 2023-04-29 01:00:00 | 709 | 2960 | 1 | 1 |
+---+-----+-----+-----+-----+
20 rows in set (0.00 sec)

```

## 9. Query

### Single row subquery

1. Find the name and hire date of the agent assigned to the complaint with ID 690.

```
mysql> SELECT name, hiredate
    -> FROM agent
    -> WHERE a_id = (SELECT a_id FROM ticket WHERE com_id =690);
+-----+-----+
| name | hiredate |
+-----+-----+
| David Kim | 2021-01-01 |
+-----+-----+
1 row in set (0.00 sec)
```

2. Show the name of the customer who made the complaint with ID 123:

```
mysql> SELECT cus_id, name, email, city, phone
-> FROM customer
-> WHERE cus_id = (
->   SELECT cus_id
->     FROM complaint
->   WHERE com_id = 700
-> );
+-----+-----+-----+-----+
| cus_id | name          | email           | city            | phone          |
+-----+-----+-----+-----+
| 1522  | Soap Mactravish | soapMac@gmail.com | Los Angeles    | 843-467-3320 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

## Multiple row subquery

1. Retrieve the names of all products that have at least one complaint:

```
mysql> SELECT name FROM product
-> WHERE p_id IN (
->     SELECT p_id FROM complaint
-> );
+-----+
| name |
+-----+
| Laptop          |
| Smartphone      |
| Smart TV         |
| Tablet           |
| Headphones       |
| Desktop Computer |
| Camera           |
| Gaming Console   |
| Smartwatch        |
| Wireless Speaker  |
| Printer          |
| Fitness Tracker   |
| External Hard Drive |
| Virtual Reality Headset |
| E-reader          |
+-----+
15 rows in set (0.00 sec)
```

2. Show the details of all tickets that are assigned to agents with an active status:

```
mysql> SELECT *
->   FROM ticket
-> WHERE a_id IN (
->   SELECT a_id
->     FROM agent
->   WHERE active_status = 'Active'
-> );
+---+-----+-----+-----+-----+-----+-----+
| t_id | generate_time      | update_time      | com_id | a_id | s_id | prio_id |
+---+-----+-----+-----+-----+-----+-----+
| 2  | 2023-01-01 10:00:00 | 2023-01-05 11:00:00 | 690  | 2955 | 4    | 3      |
| 6  | 2023-01-27 17:00:00 | 2023-02-02 18:00:00 | 694  | 2955 | 3    | 4      |
| 11 | 2023-02-26 14:00:00 | 2023-03-01 01:00:00 | 699  | 2955 | 4    | 4      |
| 4  | 2023-01-16 13:00:00 | 2023-01-20 14:00:00 | 692  | 2957 | 1    | 1      |
| 13 | 2023-03-12 11:30:00 | 2023-03-16 12:30:00 | 701  | 2957 | 3    | 3      |
| 5  | 2023-01-25 15:00:00 | 2023-02-01 16:00:00 | 693  | 2958 | 2    | 2      |
| 14 | 2023-03-15 13:00:00 | 2023-03-19 14:00:00 | 702  | 2958 | 1    | 2      |
| 7  | 2023-02-02 10:00:00 | 2023-02-05 11:00:00 | 695  | 2960 | 2    | 3      |
| 16 | 2023-03-28 17:00:00 | 2023-04-03 18:00:00 | 704  | 2960 | 1    | 2      |
| 21 | 2023-04-26 14:00:00 | 2023-04-29 01:00:00 | 709  | 2960 | 1    | 1      |
| 8  | 2023-02-10 12:00:00 | 2023-03-15 13:00:00 | 696  | 2962 | 2    | 2      |
| 18 | 2023-04-10 12:00:00 | 2023-04-15 13:00:00 | 706  | 2962 | 4    | 2      |
| 9  | 2023-02-18 14:00:00 | 2023-02-22 01:00:00 | 697  | 2963 | 2    | 3      |
| 19 | 2023-04-18 14:00:00 | 2023-04-22 01:00:00 | 707  | 2963 | 2    | 4      |
+---+-----+-----+-----+-----+-----+-----+
14 rows in set (0.01 sec)
```

## Aggregate function

1. Calculate the average rating for all feedback:

```
mysql> SELECT AVG(rating) FROM feedback;
+-----+
| AVG(rating) |
+-----+
|      3.9524 |
+-----+
1 row in set (0.00 sec)
```

## Joining

1. Show the details of all complaints and their associated customers  
(Inner join)

```
mysql> SELECT c.com_id, c.com_descr, c.com_time, cus.cus_id, cus.name
-> FROM complaint c, customer cus
-> WHERE c.cus_id = cus.cus_id;
+-----+-----+-----+-----+
| com_id | com_descr | com_time | cus_id | name
+-----+-----+-----+-----+
| 690 | The laptop is not powering on | 2023-05-03 02:11:35 | 1511 | John Doe
| 691 | The smartphone screen is cracked | 2023-05-03 02:11:42 | 1512 | Jane Smith
| 692 | The Smart TV is not connecting to the Internet | 2023-05-03 02:11:45 | 1513 | Bob Johnson
| 693 | The tablet is running slowly | 2023-05-03 02:11:49 | 1514 | Mary Brown
| 694 | The headphones are not producing sound | 2023-05-03 02:11:52 | 1516 | Sarah Nguyen
| 695 | The laptop battery is not charging | 2023-05-03 02:11:56 | 1517 | Michael Chen
| 696 | The smartphone is not charging | 2023-05-03 02:12:00 | 1518 | Jennifer Kim
| 697 | The Smart TV remote control is not working | 2023-05-03 02:12:04 | 1519 | Tom Wilson
| 698 | The tablet screen is frozen | 2023-05-03 02:12:07 | 1520 | Emily Rodriguez
| 699 | The headphones are producing distorted sound | 2023-05-03 02:12:10 | 1521 | Ema Watson
| 700 | The desktop computer is not booting up | 2023-05-03 02:12:13 | 1522 | Soap Mactravish
| 701 | The camera lens is not focusing properly | 2023-05-03 02:12:17 | 1523 | Jack Johnson
| 702 | The gaming console is displaying an error message | 2023-05-03 02:12:20 | 1524 | Samantha Lee
| 703 | The smartwatch is not receiving notifications | 2023-05-03 02:12:25 | 1525 | George Smith
| 704 | The wireless speaker is not connecting to Bluetooth | 2023-05-03 02:12:28 | 1526 | Emma Garcia
| 705 | The printer is not printing properly | 2023-05-03 02:12:33 | 1527 | William Davis
| 706 | The fitness tracker is not tracking steps accurately | 2023-05-03 02:12:38 | 1528 | Megan Brown
| 707 | The external hard drive is not being recognized by the computer | 2023-05-03 02:12:42 | 1529 | Ryan Wilson
| 708 | The virtual reality headset is causing nausea | 2023-05-03 02:12:47 | 1530 | Olivia Nguyen
| 709 | The e-reader is not turning on | 2023-05-03 02:12:51 | 1531 | Benjamin Kim
+-----+-----+-----+-----+
20 rows in set (0.00 sec)
```

## 2. Show the details of customer and their feedbacks (Outer join)

```
mysql> SELECT c.cus_id, c.name, f.comment as Feedback
-> FROM customer c, feedback f
-> WHERE f.cus_id = c.cus_id;
+-----+-----+
| cus_id | name      | Feedback
+-----+-----+
| 1521  | Ema Watson | The technician was able to replace my headphone cord and now they work perfectly. Thank you!
| 1511  | John Doe   | The technician was very knowledgeable and helpful. My laptop is running much faster now.
| 1512  | Jane Smith  | The replacement screen looks great, but it took longer than expected to get it installed.
| 1513  | Bob Johnson | The TV is working perfectly now after the technician reset the network settings. Thank you!
| 1514  | Mary Brown  | I still seem to be having some issues with my tablet even after the technician cleared the cache and optimized the settings.
| 1516  | Sarah Nguyen | The new speaker works great and the technician was very friendly and professional.
| 1517  | Michael Chen | The new battery has greatly improved the battery life of my laptop. Thank you!
| 1518  | Jennifer Kim | The technician replaced my smartphone battery quickly and efficiently. I appreciate the great service.
| 1519  | Tom Wilson  | The technician was able to fix my remote control, but it took longer than I expected.
| 1520  | Emily Rodriguez | My tablet is running much smoother now after the technician restarted it and cleared the RAM.
| 1522  | Soap Mactravish | The new graphics card has greatly improved the performance of my desktop computer. Thank you!
| 1523  | Jack Johnson | The technician was able to replace my laptop hard drive and restore the operating system, which has greatly improved its performance.
| 1524  | Samantha Lee | The replacement camera lens works well, but it took longer than expected to get it installed.
| 1525  | George Smith | The gaming console display looks much better now that it has been calibrated. Thank you!
| 1526  | Emma Garcia  | My smartwatch is working perfectly now that it has been reset to factory settings and reconnected to my phone. Thank you!
| 1527  | William Davis | The wireless speaker is working well now that it has been reset and reconnected to my Bluetooth devices. Thank you!
| 1528  | Megan Brown  | The technician was able to clean and recalibrate my printer ink cartridges, but it took longer than expected.
| 1529  | Ryan Wilson  | The technician was able to replace my fitness tracker battery and recalibrate the step tracker. Thank you!
| 1530  | Olivia Nguyen | My external hard drive is working much better now that it has been reformatted and updated with new drivers. Thank you!
| 1531  | Benjamin Kim  | The virtual reality headset display settings have been adjusted, but I am still experiencing some motion sickness.
| 1532  | Sophia Rodriguez | The technician was able to replace the battery and restore the factory settings on my e-reader, which has greatly improved its performance. Thank you!
+-----+-----+
21 rows in set (0.00 sec)
```

# View

(Complex view)

1. Create a view that shows the details of all resolved complaints and their associated products.

```
mysql> CREATE VIEW resolved_complaints AS
-> SELECT c.com_id, c.com_descr, c.com_time, r.r_descr AS Resolution, p.name AS Product
-> FROM complaint c, resolution r, product p
-> WHERE c.r_id = r.r_id and c.p_id = p.p_id;
Query OK, 0 rows affected (0.02 sec)

mysql> SELECT * FROM resolved_complaints;
+-----+-----+-----+-----+
| com_id | com_descr | com_time | Resolution | Product |
+-----+-----+-----+-----+
| 690 | The laptop is not powering on | 2023-05-03 02:11:35 | Replaced laptop power supply | Laptop |
| 691 | The smartphone screen is cracked | 2023-05-03 02:11:42 | Replaced smartphone screen | Smartpho |
| 692 | The Smart TV is not connecting to the Internet | 2023-05-03 02:11:45 | Reset Smart TV network settings | Smart TV |
| 693 | The tablet is running slowly | 2023-05-03 02:11:49 | Cleared tablet cache and optimized settings | Tablet |
| 694 | The headphones are not producing sound | 2023-05-03 02:11:52 | Replaced defective headphone speaker | Headphon |
| 695 | The laptop battery is not charging | 2023-05-03 02:11:56 | Replaced laptop battery | Laptop |
| 696 | The smartphone is not charging | 2023-05-03 02:12:00 | Replaced smartphone battery | Smartpho |
| 697 | The Smart TV remote control is not working | 2023-05-03 02:12:04 | Reprogrammed Smart TV remote control | Smart TV |
| 698 | The tablet screen is frozen | 2023-05-03 02:12:07 | Restarted tablet and cleared RAM | Tablet |
| 699 | The headphones are producing distorted sound | 2023-05-03 02:12:10 | Replaced defective headphone cord | Headphon |
| 700 | The desktop computer is not booting up | 2023-05-03 02:12:13 | Replaced laptop hard drive and restored operating system | Desktop |
| 701 | The camera lens is not focusing properly | 2023-05-03 02:12:17 | Replaced camera lens | Camera |
| 702 | The gaming console is displaying an error message | 2023-05-03 02:12:20 | Calibrated gaming console display settings | Gaming C |
| 703 | The smartwatch is not receiving notifications | 2023-05-03 02:12:25 | Reset smartwatch to factory settings and reconnected to phone | Smartwat |
| 704 | The wireless speaker is not connecting to Bluetooth | 2023-05-03 02:12:28 | Reset wireless speaker and reconnected to Bluetooth devices | Wireless |
| 705 | The printer is not printing properly | 2023-05-03 02:12:33 | Cleaned and recalibrated printer ink cartridges | Printer |
| 706 | The fitness tracker is not tracking steps accurately | 2023-05-03 02:12:38 | Replaced fitness tracker battery and recalibrated step tracker | Fitness |
| 707 | The external hard drive is not being recognized by the computer | 2023-05-03 02:12:42 | Reformatted external hard drive and updated drivers | External |
| 708 | The virtual reality headset is causing nausea | 2023-05-03 02:12:47 | Adjusted virtual reality headset display settings to reduce motion sickness | Virtual |
| 709 | The e-reader is not turning on | 2023-05-03 02:12:51 | Replaced e-reader battery and restored factory settings | E-reader |
+-----+-----+-----+-----+
20 rows in set (0.01 sec)
```

## **Conclusion**

In conclusion, our customer complaint tracking system is a valuable tool for businesses looking to improve their customer service and experience. The system is designed to efficiently store and retrieve data using a relational database management system. Customers can file multiple complaints, each with a unique ID, description, and time of submission. Complaints can be associated with a single ticket, and each complaint has a priority and severity level identified by a unique ID and description. The system maintains a list of agents who can work on complaints, and customers can provide feedback on the resolution of their complaint. Additionally, the system maintains information about the products associated with the complaints and stores details about the resolution of each complaint, including its unique ID, time of resolution, and description. By using our system, businesses can effectively manage customer complaints, track their resolution, and gather feedback, leading to improved customer satisfaction and experience.