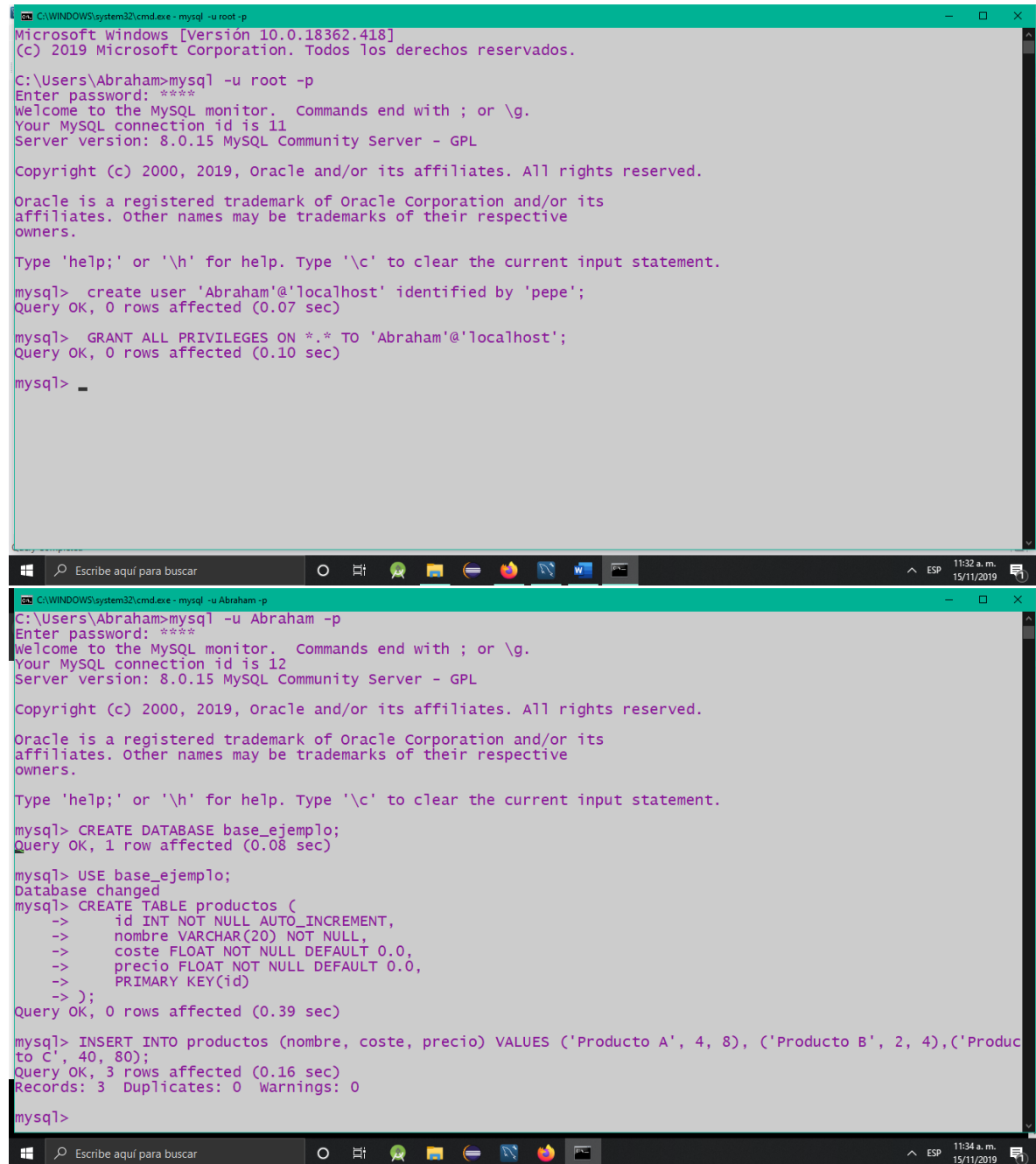


Practica 1

Creacion del usuario:



```
C:\WINDOWS\system32\cmd.exe - mysql -u root -p
Microsoft Windows [Versión 10.0.18362.418]
(c) 2019 Microsoft Corporation. Todos los derechos reservados.

C:\Users\Abraham>mysql -u root -p
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

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

mysql> create user 'Abraham'@'localhost' identified by 'pepe';
Query OK, 0 rows affected (0.07 sec)

mysql> GRANT ALL PRIVILEGES ON *.* TO 'Abraham'@'localhost';
Query OK, 0 rows affected (0.10 sec)

mysql>

C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p
C:\Users\Abraham>mysql -u Abraham -p
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 12
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

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

mysql> CREATE DATABASE base_ejemplo;
Query OK, 1 row affected (0.08 sec)

mysql> USE base_ejemplo;
Database changed
mysql> CREATE TABLE productos (
->   id INT NOT NULL AUTO_INCREMENT,
->   nombre VARCHAR(20) NOT NULL,
->   coste FLOAT NOT NULL DEFAULT 0.0,
->   precio FLOAT NOT NULL DEFAULT 0.0,
->   PRIMARY KEY(id)
-> );
Query OK, 0 rows affected (0.39 sec)

mysql> INSERT INTO productos (nombre, coste, precio) VALUES ('Producto A', 4, 8), ('Producto B', 2, 4), ('Producto C', 40, 80);
Query OK, 3 rows affected (0.16 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql>
```

```
C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -ppepe

C:\Users\Abraham>mysql -u Abraham -ppepe
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 22
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

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

mysql> use base_ejemplo;
Database changed
mysql> DELIMITER $$
mysql> SHOW TABLES
-> $$
+-----+
| Tables_in_base_ejemplo |
+-----+
| productos              |
+-----+
1 row in set (0.00 sec)

mysql> CREATE TRIGGER actualizarPrecioProducto BEFORE UPDATE ON productos FOR EACH ROW
-> BEGIN IF NEW.coste <> OLD.coste THEN SET NEW.precio = NEW.coste * 2; END IF ;
-> END $$
Query OK, 0 rows affected (0.10 sec)

mysql> DELIMITER ;
mysql>
```

```
C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -ppepe
+-----+
1 row in set (0.00 sec)

mysql> CREATE TRIGGER actualizarPrecioProducto BEFORE UPDATE ON productos FOR EACH ROW
-> BEGIN IF NEW.coste <> OLD.coste THEN SET NEW.precio = NEW.coste * 2; END IF ;
-> END $$
Query OK, 0 rows affected (0.10 sec)

mysql> DELIMITER ;
mysql> SELECT*FROM productos;
+----+-----+-----+-----+
| id | nombre | coste | precio |
+----+-----+-----+-----+
| 1  | Producto A | 4     | 8      |
| 2  | Producto B | 2     | 4      |
| 3  | Producto C | 40    | 80     |
+----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> UPDATE productos SET coste = 5 WHERE id = 1;
Query OK, 1 row affected (0.18 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT*FROM productos;
+----+-----+-----+-----+
| id | nombre | coste | precio |
+----+-----+-----+-----+
| 1  | Producto A | 5     | 10     |
| 2  | Producto B | 2     | 4      |
| 3  | Producto C | 40    | 80     |
+----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

Practica 2

```
C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p
C:\Users\Abraham>mysql -u Abraham -p
Enter password: ***
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 30
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

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

mysql> CREATE DATABASE bd_ejemplo2;
Query OK, 1 row affected (0.07 sec)

mysql> USE BD_EJEMPLO2;
Database changed
mysql> CREATE TABLE Author (id int, name varchar(45), post_count int);
Query OK, 0 rows affected (0.22 sec)

mysql> CREATE TABLE author_audit (id INT AUTO_INCREMENT PRIMARY KEY, authorId INT NOT NULL, name VARCHAR(50) NOT NULL, changedate DATETIME DEFAULT NULL, action VARCHAR(50) DEFAULT NULL);
Query OK, 0 rows affected (0.25 sec)

mysql> DELIMITER $$
mysql> CREATE TRIGGER after_author_added
-> AFTER INSERT ON Author FOR EACH ROW
-> BEGIN
-> INSERT INTO author_audit SET action = 'insert', authorId = NEW.id, name = NEW.name, changedate = NOW();
-> END$$
```

```
C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 31
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

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

mysql> use bd_ejemplo2;
Database changed
mysql> show triggers;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Trigger | Event | Table | Statement | Timing | Created | sql_mode |
| Definer | character_set_client | collation_connection | Database Collation |
+-----+-----+-----+-----+-----+-----+-----+
| after_author_added | INSERT | author | BEGIN
INSERT INTO author_audit SET action = 'insert', authorId = NEW.id, name = NEW.name, changedate = NOW();
END | AFTER | 2019-11-15 15:53:17.50 | STRICT_TRANS_TABLES,NO_ENGINE_SUBSTITUTION | Abraham@localhost | cp850
| cp850_general_ci | utf8mb4_0900_ai_ci |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.05 sec)

mysql>
```

```
C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p
(c) 2019 Microsoft Corporation. Todos los derechos reservados.
C:\Users\Abraham>mysql -u Abraham -p
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 32
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

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

mysql> use bd_ejemplo2;
Database changed
mysql>
mysql> SELECT * FROM author_audit;
Empty set (0.00 sec)

mysql> INSERT INTO Author (id, name, post_count) VALUES (7, 'vyom', 27);
Query OK, 1 row affected (0.13 sec)

mysql> SELECT * FROM author_audit;
+----+-----+-----+-----+-----+
| id | authorId | name | changedate | action |
+----+-----+-----+-----+-----+
| 1  |         | 7    | 2019-11-15 16:04:11 | insert |
+----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

Practica 3

1. Before Update Trigger:

```
C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p
C:\Users\Abraham>mysql -u Abraham -p
Enter password: ***
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 37
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

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

mysql> create database Before_Update_Trigger;
Query OK, 1 row affected (0.07 sec)

mysql> use Before_Update_Trigger;
Database changed
mysql> create table customer (acc_no integer primary key, cust_name varchar(20),
                                avail_balance decimal);create table mini_statement (acc_no integer,
                                avail_balance decimal, foreign key(acc_no) references customer(acc_no) on delete cascade);
Query OK, 0 rows affected (0.31 sec)
Query OK, 0 rows affected (0.30 sec)

mysql> insert into customer values (1000, "Fanny", 7000);insert into customer values (1001, "Peter", 12000);
Query OK, 1 row affected (0.11 sec)
Query OK, 1 row affected (0.10 sec)

mysql> DELIMITER $$
mysql> create trigger update_cus      before update on customer      for each row      begin      insert into m

C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p
mysql> DELIMITER $$
mysql> create trigger update_cus      before update on customer      for each row      begin      insert into m
ini_statement values (old.acc_no, old.avail_balance);      end $$
Query OK, 0 rows affected (0.03 sec)

mysql> delimiter ;
mysql> update customer set avail_balance = avail_balance + 3000 where acc_no = 1001;update customer set avail_b
alance = avail_balance + 3000 where acc_no = 1000;
Query OK, 1 row affected (0.08 sec)
Rows matched: 1  Changed: 1  Warnings: 0

Query OK, 1 row affected (0.14 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select *from mini_statement;
+-----+-----+
| acc_no | avail_balance |
+-----+-----+
| 1001   | 12000         |
| 1000   | 7000          |
+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

2. After Update Trigger:

```
C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p
C:\Users\Abraham>mysql -u Abraham -p
Enter password: ***
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 43
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

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

mysql> CREATE DATABASE After_Update_Trigger;
Query OK, 1 row affected (0.08 sec)

mysql> create table customer (acc_no integer primary key, cust_name varchar(20),
                                avail_balance decimal);create table mini_statement (acc_no integer,
                                avail_balance decimal, foreign key(acc_no) references customer(acc_no) on delete cascade);
ERROR 1046 (3D000): No database selected
ERROR 1046 (3D000): No database selected
mysql> USE After_Update_Trigger;
Database changed
mysql> create table customer (acc_no integer primary key, cust_name varchar(20),
                                avail_balance decimal);create table mini_statement (acc_no integer,
                                avail_balance decimal, foreign key(acc_no) references customer(acc_no) on delete cascade);
Query OK, 0 rows affected (0.23 sec)

Query OK, 0 rows affected (0.24 sec)

mysql> create table micro_statement (acc_no integer, avail_balance decimal,
                                foreign key(acc_no) references customer(acc_no) on delete cascade);
Query OK, 0 rows affected (0.27 sec)

mysql> insert into customer values (1002, "Janitor", 4500);
Query OK, 1 row affected (0.06 sec)

mysql> delimiter //
mysql> create trigger update_after after update on customer for each row begin insert
into micro_statement values(new.acc_no, new.avail_balance); end //
Query OK, 0 rows affected (0.11 sec)

mysql> delimiter ;
mysql> update customer set avail_balance = avail_balance + 1500 where acc_no = 1002;
Query OK, 1 row affected (0.08 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select *from micro_statement;
+-----+-----+
| acc_no | avail_balance |
+-----+-----+
| 1002 | 6000 |
+-----+-----+
1 row in set (0.00 sec)

mysql>
```

3. Before Insert Trigger:

```
C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p

C:\Users\Abraham>mysql -u Abraham -p
Enter password: ***
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 47
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

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

mysql> CREATE DATABASE Before_Insert_Trigger;
Query OK, 1 row affected (0.06 sec)

mysql> USE Before_Insert_Trigger;
Database changed
mysql> create table contacts (contact_id INT (11) NOT NULL AUTO_INCREMENT, last_n
ame VARCHAR (30) NOT NULL, first_name VARCHAR (25), birthday DATE, created_date DA
TE, created_by VARCHAR(30),
PRIMARY KEY (contact_id));
Query OK, 0 rows affected (0.70 sec)

mysql> DELIMITER //
mysql> create trigger contacts_before_insert before insert on contacts for each row
begin DECLARE vUser varchar(50); select USER() into vUser; SET N
EW.created_date = SYSDATE(); SET NEW.created_by = vUser; end //
Query OK, 0 rows affected (0.23 sec)

mysql> DELIMITER ;
mysql> insert into contacts values (1, "Newton", "Enigma", str_to_date ("19-08-1999", "%d-%m-%Y"), str_to_date ("17-03-2018", "%d-%m-%Y"), "xyz");
Query OK, 1 row affected (0.05 sec)

mysql> select *from contacts;
+-----+-----+-----+-----+-----+-----+
| contact_id | last_name | first_name | birthday | created_date | created_by |
+-----+-----+-----+-----+-----+-----+
| 1 | Newton | Enigma | 1999-08-19 | 2019-11-15 | Abraham@localhost |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

4. After Insert Trigger:

```
C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p

C:\Users\Abraham>mysql -u Abraham -p
Enter password: ***
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 58
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

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

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

mysql> USE After_Insert_Trigger;
Database changed
mysql> create table contacts (contact_id int (11) NOT NULL AUTO_INCREMENT, last_name VARCHAR(30) NOT NULL, first_name VARCHAR(25), birthday DATE,
CONSTRAINT contacts_pk PRIMARY KEY (contact_id));create table contacts_audit (contact_id integer,
created_date date, created_by varchar (30));
Query OK, 0 rows affected (0.30 sec)
Query OK, 0 rows affected (0.31 sec)

mysql> DELIMITER //
mysql> create trigger contacts_after_insert after insert on contacts for each row begin DECLARE vUser varchar
r(50); SELECT USER() into vUser; INSERT into contacts_audit( contact_id,created_date,created_by) VALUES(NEW.contact_id, curdate(),vUser );
END //
Query OK, 0 rows affected (0.14 sec)

C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p

ame VARCHAR(30) NOT NULL, first_name VARCHAR(25), birthday DATE,
CONSTRAINT contacts_pk PRIMARY KEY (contact_id));create table contacts_audit (contact_id integer,
created_date date, created_by varchar (30));
Query OK, 0 rows affected (0.30 sec)
Query OK, 0 rows affected (0.31 sec)

mysql> DELIMITER //
mysql> create trigger contacts_after_insert after insert on contacts for each row begin DECLARE vUser varchar
r(50); SELECT USER() into vUser; INSERT into contacts_audit( contact_id,created_date,created_by) VALUES(NEW.contact_id, curdate(),vUser );
END //
Query OK, 0 rows affected (0.14 sec)

mysql> DELIMITER ;
mysql> insert into contacts values (1, "Kumar", "Rupesh", str_to_date("20-06-1999", "%d-%m-%Y"));
Query OK, 1 row affected (0.07 sec)

mysql> select *from contacts_audit;
+-----+-----+-----+
| contact_id | created_date | created_by |
+-----+-----+-----+
| 1 | 2019-11-15 | Abraham@localhost |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

5. Before Delete Trigger:


```
C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p
C:\Users\Abraham>mysql -u abraham -p
Enter password: ***
ERROR 1045 (28000): Access denied for user 'abraham'@'localhost' (using password: YES)

C:\Users\Abraham>mysql -u Abraham -p
Enter password: ***
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 51
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

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

mysql> use Before_Delete_Trigger;
Database changed
mysql> show tables;
+-----+
| Tables_in_before_delete_trigger |
+-----+
| contacts                         |
| contacts_audit                   |
+-----+
2 rows in set (0.00 sec)

mysql> delimiter //
mysql> create trigger contacts_before_delete before delete on contacts for each row begin DECLARE vUser
er varchar(50); SELECT USER() into vUser; INSERT into contacts_audit( contact_id,deleted_date,deleted_by)VALUES(
_OLD.contact_id,SYSDATE(),vUser ); end //
Query OK, 0 rows affected (0.10 sec)

mysql> delimiter //
mysql> create trigger contacts_before_delete before delete on contacts for each row begin DECLARE vUser
er varchar(50); SELECT USER() into vUser; INSERT into contacts_audit( contact_id,deleted_date,deleted_by)VALUES(
_OLD.contact_id,SYSDATE(),vUser ); end //
Query OK, 0 rows affected (0.10 sec)

mysql> delimiter ;
mysql> insert into contacts values (1, "Bond", "Ruskin", str_to_date ("19-08-1995",
"%d-%m-%Y"), str_to_date ("27-04-2018", "%d-%m-%Y"), "xyz");
Query OK, 1 row affected (0.05 sec)

mysql> delete from contacts where last_name="Bond";
Query OK, 1 row affected (0.14 sec)

mysql> select *from contacts_audit;
+-----+-----+-----+
| contact_id | deleted_date | deleted_by |
+-----+-----+-----+
| 1          | 2019-11-15   | Abraham@localhost |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

6. After Delete Trigger:

```
C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p

C:\Users\Abraham>mysql -u Abraham -p
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 54
Server version: 8.0.15 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> USE After_Delete_Trigger;
Database changed
mysql> create table contacts (contact_id int (11) NOT NULL AUTO_INCREMENT, last_name
    VARCHAR (30) NOT NULL, first_name VARCHAR (25), birthday DATE, created_date DATE, c
    reated_by VARCHAR (30), CONSTRAINT contacts_pk PRIMARY KEY (contact_id));create tabl
    e contacts_audit (contact_id integer, deleted_date date, deleted_by varchar(20));
Query OK, 0 rows affected (0.34 sec)

Query OK, 0 rows affected (0.28 sec)

mysql> delimiter //
mysql> create trigger contacts_after_delete after delete on contacts for each row begin DECLARE vUser varchar(50
); SELECT USER() into vUser; INSERT into contacts_audit(contact_id,deleted_date,deleted_by)VALUES( OLD.contact_id
,SYSDATE(),vUser );end //
Query OK, 0 rows affected (0.10 sec)

mysql> delimiter ;
mysql> insert into contacts values (1, "Newton", "Isaac", str_to_date ("19-08-1985"
, "%d-%m-%Y"), str_to_date ("23-07-2018", "%d-%m-%Y"), "xyz");
Query OK, 1 row affected (0.05 sec)

C:\WINDOWS\system32\cmd.exe - mysql -u Abraham -p

Database changed
mysql> create table contacts (contact_id int (11) NOT NULL AUTO_INCREMENT, last_name
    VARCHAR (30) NOT NULL, first_name VARCHAR (25), birthday DATE, created_date DATE, c
    reated_by VARCHAR (30), CONSTRAINT contacts_pk PRIMARY KEY (contact_id));create tabl
    e contacts_audit (contact_id integer, deleted_date date, deleted_by varchar(20));
Query OK, 0 rows affected (0.34 sec)

Query OK, 0 rows affected (0.28 sec)

mysql> delimiter //
mysql> create trigger contacts_after_delete after delete on contacts for each row begin DECLARE vUser varchar(50
); SELECT USER() into vUser; INSERT into contacts_audit(contact_id,deleted_date,deleted_by)VALUES( OLD.contact_id
,SYSDATE(),vUser );end //
Query OK, 0 rows affected (0.10 sec)

mysql> delimiter ;
mysql> insert into contacts values (1, "Newton", "Isaac", str_to_date ("19-08-1985"
, "%d-%m-%Y"), str_to_date ("23-07-2018", "%d-%m-%Y"), "xyz");
Query OK, 1 row affected (0.05 sec)

mysql> delete from contacts where first_name="Isaac";
Query OK, 1 row affected (0.16 sec)

mysql> select *from contacts_audit;
+-----+-----+-----+
| contact_id | deleted_date | deleted_by |
+-----+-----+-----+
|          1 | 2019-11-15 | Abraham@localhost |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```