



# INSTITUTO TECNOLÓGICO SUPERIOR DE JEREZ

Jerez de García Salinas  
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## **“Ingeniería en Sistemas Computacionales”**

Materia: Taller de Base de Datos

Quinto Semestre

Actividad 2: “Practica Triggers”



TECNOLÓGICO  
NACIONAL DE MÉXICO

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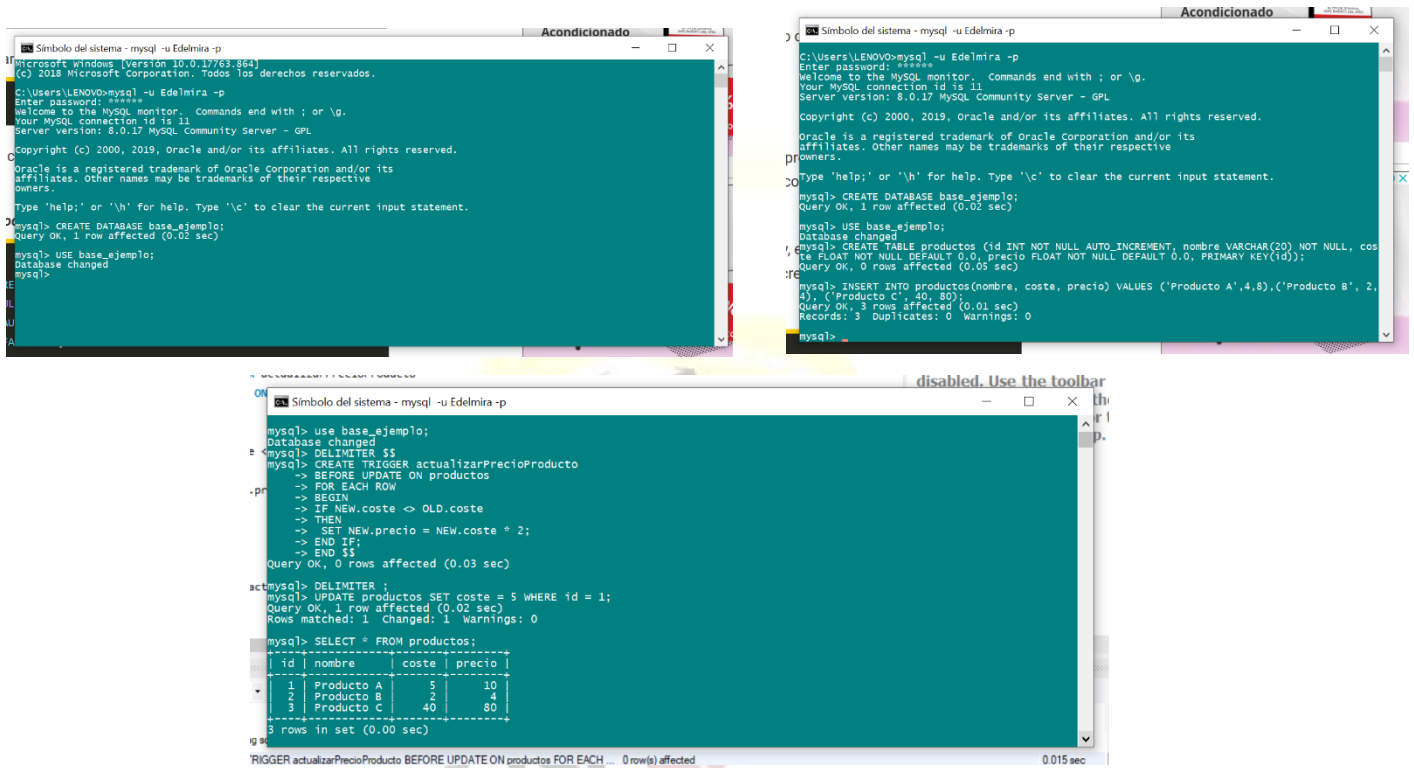
Docente: MTI, ISC Salvador Acevedo Sandoval



## Practica TRIGGERS

Realizar las practicas que se muestran en lo siguientes enlaces:

1. <https://www.neoguias.com/como-crear-y-utilizar-triggers-en-mysql/>



```
Símbolo del sistema - mysql -u Edelmira -p
Microsoft Windows [Version 10.0.17763.864]
(c) 2018 Microsoft Corporation. Todos los derechos reservados.

C:\Users\LENOVO>mysql -u Edelmira -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 8.0.17 MySQL Community Server - GPL

Copyright (c) 2000, 2019, Oracle and/or its affiliates. All rights reserved.
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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 base_ejemplo;
Query OK, 1 row affected (0.02 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 (0.05 sec)

mysql> INSERT INTO productos(nombre, coste, precio) VALUES ('Producto A',4,8),('Producto B', 2,
1), ('Producto C',40, 80);
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0

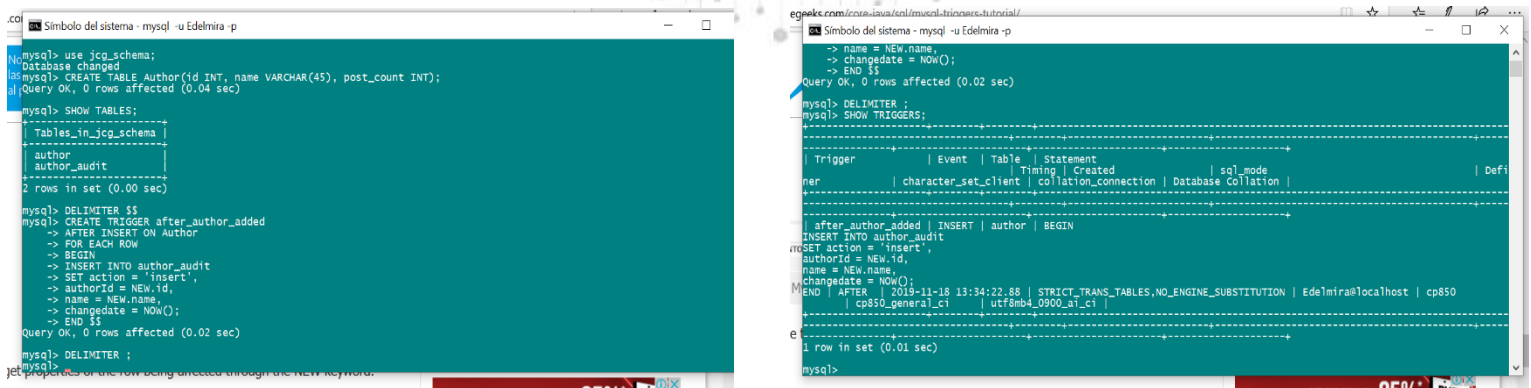
mysql>

mysql> use base_ejemplo;
Database changed
mysql> DELIMITER $$
mysql> CREATE TRIGGER actualizarPrecioProducto
-> BEFORE UPDATE ON productos
-> FOR EACH ROW
-> BEGIN
-> IF NEW.coste <> OLD.coste
-> THEN
-> SET NEW.precio = NEW.coste * 2;
-> END IF;
-> END $$
Query OK, 0 rows affected (0.03 sec)

mysql> DELIMITER ;
mysql> UPDATE productos SET coste = 5 WHERE id = 1;
Query OK, 1 row affected (0.02 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)
```

2. <https://examples.javacodegeeks.com/core-java/sql/mysql-triggers-tutorial/>



```
Símbolo del sistema - mysql -u Edelmira -p

mysql> use jcg_schema;
Database changed
mysql> CREATE TABLE Author(id INT, name VARCHAR(45), post_count INT);
Query OK, 0 rows affected (0.04 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_jcg_schema |
+-----+
| author                |
| author_audit          |
+-----+
2 rows in set (0.00 sec)

mysql> DELIMITER $$
mysql> CREATE TRIGGER after_author_added
-> AFTER INSERT ON Author
-> FOR EACH ROW
-> BEGIN
-> INSERT INTO author_audit
-> SET action = 'insert',
-> authorId = NEW.id,
-> name = NEW.name,
-> changedate = NOW();
-> END $$
Query OK, 0 rows affected (0.02 sec)

mysql> DELIMITER ;

mysql> INSERT INTO author(name, post_count) VALUES('John Doe', 1);
Query OK, 1 row affected (0.01 sec)
```

```
Símbolo del sistema - mysql -u Edelmira -p
mysql> INSERT INTO author_audit (id, authorId, name, changedate, action)
VALUES (1, 7, 'Vyom', NOW(), 'insert');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Author (id, name, post_count) VALUES (7, 'Vyom', 27);
Query OK, 1 row affected (0.02 sec)

mysql> SELECT * FROM author_audit;
+----+-----+-----+-----+-----+
| id | authorId | name | changedate | action |
+----+-----+-----+-----+-----+
| 1 | 7 | Vyom | 2019-11-18 13:36:32 | insert |
+----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

3. <https://www.geeksforgeeks.org/different-types-of-mysql-triggers-with-examples/>

## 1. Before Update Trigger

```
Símbolo del sistema - mysql -u Edelmira -p
mysql> DELIMITER $$
mysql> CREATE TRIGGER update_cus
--> before UPDATE ON customer
--> FOR EACH ROW
--> BEGIN
--> INSERT INTO mini_statement VALUES(old.acc_no, old.avail_balance);
--> END $$
Query OK, 0 rows affected (0.02 sec)

mysql> DELIMITER ;
mysql> update customer set avail_balance = avail_balance + 3000 where acc_no = 1001;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update customer set avail_balance = avail_balance + 3000 where acc_no = 1000;
Query OK, 1 row affected (0.01 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

```
Símbolo del sistema - mysql -u Edelmira -p
mysql> DELIMITER $$
mysql> CREATE TRIGGER update_cus
--> before UPDATE ON customer
--> FOR EACH ROW
--> BEGIN
--> INSERT INTO mini_statement VALUES(old.acc_no, old.avail_balance);
--> END $$
Query OK, 0 rows affected (0.02 sec)

mysql> DELIMITER ;
mysql> update customer set avail_balance = avail_balance + 3000 where acc_no = 1001;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update customer set avail_balance = avail_balance + 3000 where acc_no = 1000;
Query OK, 1 row affected (0.01 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>
```

### 3. Before Insert Trigger

```
mysql> Query OK, 0 rows affected, 1 warning (0.05 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 NEW.created_date = SYSDATE();
-- SET NEW.created_by = vuser;
-- END //
Query OK, 0 rows affected (0.02 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 (0.02 sec)

mysql> SELECT * FROM contacts;
+-----+-----+-----+-----+-----+
| contact_id | last_name | first_name | birthday | created_date | created_by |
+-----+-----+-----+-----+-----+
| 1 | Newton | Enigma | 1999-08-19 | 2019-11-18 | Edelmira@localhost |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

### 4. After Insert Trigger

```
mysql> create table contacts_2 (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));
Query OK, 0 rows affected, 1 warning (0.11 sec)

mysql> create table contacts_audit (contact_id integer, created_date date, created_by varchar (30));
Query OK, 0 rows affected (0.09 sec)

mysql> DELIMITER //
mysql> CREATE TRIGGER conctcts_after_insert
-- AFTER INSERT
-- ON contacts_2 FOR EACH ROW
-- BEGIN
-- DECLARE vuser_2 VARCHAR(50);
-- SELECT USER() INTO vuser_2;
-- INSERT INTO contacts_audit( contact_id,created_date,created_by) VALUES(NEW.contact_id, curdate(),vuser_2 );
-- END //
Query OK, 0 rows affected (0.04 sec)

mysql> DELIMITER ;
mysql> insert into contacts values (1, "Kumar", "Rupesh", str_to_date ("20-06-1999", "%d-%m-%Y"));
ERROR 1130 (21501): column count doesn't match value count at row 1
mysql> insert into contacts_2 values (1, "Kumar", "Rupesh", str_to_date ("20-06-1999", "%d-%m-%Y"));
Query OK, 1 row affected (0.03 sec)

mysql> SELECT * FROM contacts_audit;
+-----+-----+-----+
| contact_id | created_date | created_by |
+-----+-----+-----+
| 1 | 2019-11-18 | Edelmira@localhost |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

### 5. Before Delete Trigger

```
mysql> 1 row in set (0.00 sec)

mysql> create table contacts_4 (contact_id int (11) NOT NULL AUTO_INCREMENT, last_name VARCHAR (30) NOT NULL, first_name VARCHAR (25), birthday DATE, created_date DATE, created_by VARCHAR (30), CONSTRAINT contacts_pk PRIMARY KEY (contact_id));
Query OK, 0 rows affected, 1 warning (0.17 sec)

mysql> create table contacts_audit_3 (contact_id integer, deleted_date date, deleted_by varchar(20));
Query OK, 0 rows affected (0.09 sec)

mysql> DELIMITER //
mysql> CREATE TRIGGER contacts_after_delete
-- AFTER DELETE
-- ON contacts_4 FOR EACH ROW
-- BEGIN
-- DECLARE vuser_4 varchar(50);
-- SELECT USER() INTO vuser_4;
-- INSERT INTO contacts_audit_3 (contact_id, deleted_date, deleted_by) VALUES (OLD.contact_id, SYSDATE(), vUser_4 );
-- END //
Query OK, 0 rows affected (0.04 sec)

mysql> DELIMITER ;
mysql> insert into contacts_4 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 (0.02 sec)

mysql> delete from contacts_4 where first_name="Isaac";
Query OK, 1 row affected (0.03 sec)

mysql> select *from contacts_audit_3;
+-----+-----+-----+
| contact_id | deleted_date | deleted_by |
+-----+-----+-----+
| 1 | 2019-11-18 | Edelmira@localhost |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

## 6. After Delete Trigger

```
Símbolo del sistema - mysql -u Edelmira -p
1 row in set (0.00 sec)

mysql> create table contacts_4 (contact_id int (11) NOT NULL AUTO INCREMENT, last_name VARCHAR (30) NOT NULL, first_name
VARCHAR (25), birthday DATE, created_date DATE, created_by VARCHAR (30), CONSTRAINT contacts_pk PRIMARY KEY (contact_id
));
Query OK, 0 rows affected, 1 warning (0.17 sec)

mysql> create table contacts_audit_3 (contact_id integer, deleted_date date, deleted_by varchar(20));
Query OK, 0 rows affected (0.09 sec)

mysql> DELIMITER //
mysql> CREATE TRIGGER contacts_after_delete
-> AFTER DELETE
-> ON contacts_4 FOR EACH ROW
-> BEGIN
-> DECLARE vUser_4 varchar(50);
-> SELECT USER() into vUser_4;
-> INSERT into contacts_audit_3 (contact_id, deleted_date, deleted_by) VALUES (OLD.contact_id, SYSDATE(), vUser_4 );
-> END //
Query OK, 0 rows affected (0.04 sec)

mysql> DELIMITER ;
mysql> insert into contacts_4 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 (0.02 sec)

mysql> delete from contacts_4 where first_name="Isaac";
Query OK, 1 row affected (0.03 sec)

mysql> select *from contacts_audit_3;
+-----+-----+-----+
| contact_id | deleted_date | deleted_by |
+-----+-----+-----+
| 1 | 2019-11-18 | Edelmira@localhost |
+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

