

```
mysql> use exp9;
Database changed
```

Trigger after update

```
mysql> create table student(id int,name varchar(20),class varchar(20),emailid
varchar(20));
Query OK, 0 rows affected (1.68 sec)
```

```
mysql> insert into student values(101,'var',9,'abc@');
Query OK, 1 row affected (0.46 sec)
```

```
mysql> insert into student values(102,'arsh',10,'asd@');
Query OK, 1 row affected (0.23 sec)
```

```
mysql> insert into student values(103,'dhar',9,'ahs@');
Query OK, 1 row affected (0.06 sec)
```

```
mysql> insert into student values(104,'abi',8,'avvg@');
Query OK, 1 row affected (0.14 sec)
```

```
create table students(user varchar(20),description varchar(225));
```

```
DELIMITER $$
CREATE TRIGGER after_update
AFTER UPDATE
ON student FOR EACH ROW
BEGIN
    INSERT INTO students VALUES (USER(), CONCAT('update stu rec', OLD.name,
'previous class', OLD.class, 'present class:', NEW.class));
END $$
DELIMITER ;
```

```
update student set class=class+1;
```

```
mysql> select*from student;
```

id	name	class	emailid
101	var	10	abc@
102	arsh	11	asd@
103	dhar	10	ahs@
104	abi	9	avvg@

```
mysql> select*from students;
```

```

+-----+-----+
| user          | description                                     |
+-----+-----+
| root@localhost | update stu recvarprevious class9present class:10 |
| root@localhost | update stu recarshprevious class10present class:11 |
| root@localhost | update stu recdharprevious class9present class:10 |
| root@localhost | update stu recabiprevious class8present class:9   |
+-----+-----+
4 rows in set (0.04 sec)

```

trigger before update

```
mysql> select*from student;
```

```

+-----+-----+-----+-----+
| id  | name | class | emailid |
+-----+-----+-----+-----+
| 101 | var  | 10    | abc@    |
| 102 | arsh | 11    | asd@    |
| 103 | dhar | 10    | ahs@    |
| 104 | abi  | 9     | avvg@   |
+-----+-----+-----+-----+
4 rows in set (0.18 sec)

```

```

mysql> DELIMITER ;trigger delete???
mysql> DROP TRIGGER IF EXISTS before_student;
Query OK, 0 rows affected (0.16 sec)

```

```

mysql> DELIMITER $$
mysql> CREATE TRIGGER before_student
-> BEFORE UPDATE ON student
-> FOR EACH ROW
-> BEGIN
->     INSERT INTO student1
->     SET action = 'update',
->         stuid = OLD.id,
->         name = OLD.name,
->         doj = CURDATE();
-> END $$

```

Query OK, 0 rows affected (0.21 sec)

```
mysql> DELIMITER ;
```

```

mysql> create table student1(stuid int,name varchar(20),doj datetime,action
varchar(20));
Query OK, 0 rows affected (0.33 sec)

```

```
mysql> desc student1;
```

Field	Type	Null	Key	Default	Extra
stuid	int	YES		NULL	
name	varchar(20)	YES		NULL	
doj	datetime	YES		NULL	
action	varchar(20)	YES		NULL	

4 rows in set (0.10 sec)

mysql> show triggers;

Trigger	Event	Table	Statement	Timing	Created	sql_mode	Definer	character_set_client	collation_connection	Database Collation
before_student	UPDATE	student	BEGIN INSERT INTO student1 SET action = 'update', stuid = OLD.id, name = OLD.name, doj = CURDATE(); END	BEFORE	2023-11-18 14:24:07.15	ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_ENGINE_SUBSTITUTION	root@localhost	cp850	cp850_general_ci	utf8mb4_0900_ai_ci
after_update	UPDATE	student	BEGIN INSERT INTO students VALUES (USER(), CONCAT('update stu rec', OLD.name, 'previous class', OLD.class, 'present class:', NEW.class)); END	AFTER	2023-11-18 13:52:16.34	ONLY_FULL_GROUP_BY,STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_ENGINE_SUBSTITUTION	root@localhost	cp850	cp850_general_ci	utf8mb4_0900_ai_ci

--+

2 rows in set (0.00 sec)

mysql> update student set name='san' where id=103;

Query OK, 1 row affected (0.11 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> select\*from student1;

```
+-----+-----+-----+-----+
| stuid | name | doj           | action |
+-----+-----+-----+-----+
| 103   | dhar | 2023-11-18 00:00:00 | update |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

AGE VALID OR INVALID

mysql> DELIMITER \$\$

mysql> CREATE TRIGGER trig\_age

-> BEFORE INSERT

-> ON trig FOR EACH ROW

-> BEGIN

-> IF NEW.age < 18 THEN

-> SIGNAL SQLSTATE '45000' SET MESSAGE\_TEXT = 'person must be older than 18';

-> END IF;

-> END \$\$

Query OK, 0 rows affected (0.18 sec)

mysql> DELIMITER ;

mysql> insert into trig values('san',19);

Query OK, 1 row affected (0.05 sec)

mysql> insert into trig values('riya',16);

ERROR 1644 (45000): person must be older than 18

mysql> select\*from trig;

```
+-----+-----+
| name | age |
+-----+-----+
| san  | 19  |
+-----+-----+
```

MEMBER TABLE

mysql> CREATE TABLE members ( id INT AUTO\_INCREMENT, name VARCHAR(100) NOT NULL, email VARCHAR(255), birthdate DATE, PRIMARY KEY (id));

Query OK, 0 rows affected (2.43 sec)

mysql> CREATE TABLE reminders ( id INT AUTO\_INCREMENT, memberId INT,

```
message VARCHAR(255) NOT NULL, PRIMARY KEY (id, memberId));
Query OK, 0 rows affected (0.47 sec)
```

```
mysql> DELIMITER #
mysql> CREATE TRIGGER after_member_insert
-> AFTER INSERT ON members
-> FOR EACH ROW
-> BEGIN
->     IF NEW.birthdate IS NULL THEN
->         INSERT INTO reminders (memberId, message)
->         VALUES (NEW.id, CONCAT('Hi ', NEW.name, ', please update your
birthdate'));
->     END IF;
-> END #
Query OK, 0 rows affected (0.23 sec)
```

```
mysql> DELIMITER ;
mysql> INSERT INTO members VALUES (NULL, 'Jai', 'abc@gmail.com', NULL), (NULL,
'Kowel', 'etq@gmail.com', '2000-01-16');
Query OK, 2 rows affected (0.35 sec)
Records: 2 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM members;
+----+-----+-----+-----+
| id | name  | email          | birthdate |
+----+-----+-----+-----+
| 1  | Jai   | abc@gmail.com  | NULL      |
| 2  | Kowel | etq@gmail.com  | 2000-01-16 |
+----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM reminders;
+----+-----+-----+
| id | memberId | message |
+----+-----+-----+
| 1  | 1        | Hi Jai, please update your birthdate |
+----+-----+-----+
1 row in set (0.00 sec)
```

#### NEGATIVEBALANCE AND LOW BALANCE

```
mysql> CREATE TABLE Bank ( AC_No INT, name VARCHAR(50), balance INT);
Query OK, 0 rows affected (0.20 sec)
```

```
mysql> DELIMITER $CREATE TRIGGER check_balanceBEFORE INSERT ON BankFOR EACH ROWBEGIN
IF NEW.balance < 0 THEN SIGNAL SQLSTATE '22003' SET MESSAGE_TEXT =
'Negative balance not allowed'; ELSEIF NEW.balance < 450 THEN SIGNAL
SQLSTATE '22003' SET MESSAGE_TEXT = 'Low balance'; END IF;END $DELIMITER ;
mysql> DELIMITER $
```

```
mysql> CREATE TRIGGER check_balance
-> BEFORE INSERT ON Bank
-> FOR EACH ROW
-> BEGIN
->     IF NEW.balance < 0 THEN
->         SIGNAL SQLSTATE '22003' SET MESSAGE_TEXT = 'Negative balance not
allowed';
->     ELSEIF NEW.balance < 450 THEN
->         SIGNAL SQLSTATE '22003' SET MESSAGE_TEXT = 'Low balance';
->     END IF;
-> END $
Query OK, 0 rows affected (0.33 sec)
```

```
mysql> DELIMITER ;
mysql> INSERT INTO Bank VALUES (103, 'John Doe', -10);
ERROR 1644 (22003): Negative balance not allowed
mysql> INSERT INTO Bank VALUES (104, 'Jane Smith', 400);
ERROR 1644 (22003): Low balance
mysql>
```