

TRIGGERS

-- 1. Create a table named teachers with fields id, name, subject, experience and salary and insert 8 rows.

```
CREATE TABLE teachers (  
    id INT PRIMARY KEY AUTO_INCREMENT,  
    name VARCHAR(100),  
    subject VARCHAR(50),  
    experience INT,  
    salary DECIMAL(10, 2)  
);
```

DESC teachers;

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

	Field	Type	Null	Key	Default	Extra
▶	id	int	NO	PRI	NULL	auto_increment
	name	varchar(100)	YES		NULL	
	subject	varchar(50)	YES		NULL	
	experience	int	YES		NULL	
	salary	decimal(10,2)	YES		NULL	

INSERT INTO teachers (name, subject, experience, salary) VALUES

('John Doe', 'Math', 8, 50000),

('Jane Smith', 'Science', 12, 60000),

('Emily Davis', 'English', 5, 45000),

('Michael Brown', 'History', 3, 40000),

('Sarah Wilson', 'Geography', 15, 70000),

('David Lee', 'Physics', 10, 55000),

```

('Laura Taylor', 'Chemistry', 2, 38000),
('James Anderson', 'Biology', 7, 48000);

SELECT * FROM teachers;

```

	id	name	subject	experience	salary
▶	1	John Doe	Math	8	50000.00
	2	Jane Smith	Science	12	60000.00
	3	Emily Davis	English	5	45000.00
	4	Michael Brown	History	3	40000.00
	5	Sarah Wilson	Geography	15	70000.00
	6	David Lee	Physics	10	55000.00
	7	Laura Taylor	Chemistry	2	38000.00
	8	James Anderson	Biology	7	48000.00
✱	NULL	NULL	NULL	NULL	NULL

-- 2. Create a before insert trigger named before_insert_teacher that will raise an error “salary cannot be negative” if the salary inserted to the table is less than zero.

```
DELIMITER //
```

```
CREATE TRIGGER before_insert_teacher
```

```
BEFORE INSERT ON teachers
```

```
FOR EACH ROW
```

```
BEGIN
```

```
    IF NEW.salary < 0 THEN
```

```
        SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Salary cannot be negative';
```

```
    END IF;
```

```
END //
```

```
DELIMITER ;
```

```
INSERT INTO teachers (name, subject, experience, salary)
VALUES('Johny Alwy', 'Mathematics', 10, -50000.00);
```

✖ 3 10:16:45 INSERT INTO teachers (name, subject, experience, salary) VALUES('Johny Alwy', '...' Error Code: 1644. Salary cannot be negative

-- 3. Create an after insert trigger named after_insert_teacher that inserts a row with teacher_id, action, timestamp to a table called teacher_log when a new entry gets inserted to the teacher table. teacher_id -> column of teacher table, action -> the trigger action, timestamp -> time at which the new row has got inserted.

```
CREATE TABLE teacher_log (
    log_id INT PRIMARY KEY AUTO_INCREMENT,
    teacher_id INT,
    action VARCHAR(50),
    log_timestamp DATETIME
);
```

```
DESC teacher_log;
```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

	Field	Type	Null	Key	Default	Extra
▶	log_id	int	NO	PRI	NULL	auto_increment
	teacher_id	int	YES		NULL	
	action	varchar(50)	YES		NULL	
	log_timestamp	datetime	YES		NULL	

```
DELIMITER //
```

```
CREATE TRIGGER after_insert_teacher
AFTER INSERT ON teachers
```

FOR EACH ROW

BEGIN

INSERT INTO teacher_log (teacher_id, action, log_timestamp)

VALUES (NEW.id, 'INSERT', NOW());

END //

DELIMITER ;

INSERT INTO teachers (name, subject, experience, salary)

VALUES('Symon Karle', 'Mathematics', 9, 57000.00);

select * from teachers;

	id	name	subject	experience	salary
▶	1	John Doe	Math	8	50000.00
	2	Jane Smith	Science	12	60000.00
	3	Emily Davis	English	5	45000.00
	4	Michael Brown	History	3	40000.00
	5	Sarah Wilson	Geography	15	70000.00
	6	David Lee	Physics	10	55000.00
	7	Laura Taylor	Chemistry	2	38000.00
	8	James Anderson	Biology	7	48000.00
	9	Symon Karle	Mathematics	9	57000.00
*	NULL	NULL	NULL	NULL	NULL

select * from teacher_log;

	log_id	teacher_id	action	log_timestamp
▶	1	9	INSERT	2024-11-21 10:19:56
*	NULL	NULL	NULL	NULL

-- 4. Create a before delete trigger that will raise an error when you try to delete a row that has experience greater than 10 years.

DELIMITER //

CREATE TRIGGER before_delete_teacher

BEFORE DELETE ON teachers

FOR EACH ROW

BEGIN

IF OLD.experience > 10 THEN

SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Cannot delete a teacher with experience greater than 10 years';

END IF;

END //

DELIMITER ;

DELETE FROM TEACHERS WHERE EXPERIENCE=10;

9 10:23:01 DELETE FROM TEACHERS WHERE EXPERIENCE=10

1 row(s) affected

DELETE FROM TEACHERS WHERE EXPERIENCE=15;

15 10:25:49 DELETE FROM TEACHERS WHERE EXPERIENCE=15

Error Code: 1644. Cannot delete a teacher with experience greater than 10 years

-- 5. Create an after delete trigger that will insert a row to teacher_log table when that row is deleted from teacher table.

DELIMITER //

CREATE TRIGGER after_delete_teacher

AFTER DELETE ON teachers

FOR EACH ROW

BEGIN

INSERT INTO teacher_log (teacher_id, action, log_timestamp)

VALUES (OLD.id, 'DELETE', NOW());

END //

```
DELIMITER ;
```

```
DELETE FROM TEACHERS WHERE ID= 2;
```

```
SELECT * FROM TEACHERS ;
```

```
select * from teacher_log;
```

	log_id	teacher_id	action	log_timestamp
▶	1	9	INSERT	2024-11-21 10:19:56
	2	6	DELETE	2024-11-21 10:23:01
*	NULL	NULL	NULL	NULL