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Subqueries separated by " ***** "
Questions separated by " ====== "
18. Trigger
a) Write a update, delete trigger on clientmstr table. The System should keep track
records that ARE BEING updated or deleted. The old value of updated or deleted
records
should be added in audit_trade table. (separate implementation using both row and
statement
triggers).
ANSWER: -
CREATE DATABASE practest;
Use practest;
************
CREATE TABLE clientmstr (
   client_id INT PRIMARY KEY,
   client_name VARCHAR(100),
   client_email VARCHAR(100),
   client_phone VARCHAR(20)
);
CREATE TABLE audit_trade (
   audit_id INT AUTO_INCREMENT PRIMARY KEY,
   client_id INT,
   client_name VARCHAR(100),
   client_email VARCHAR(100),
   client_phone VARCHAR(20),
                            -- 'UPDATE' or 'DELETE'
   operation VARCHAR(10),
   operation_time TIMESTAMP DEFAULT CURRENT_TIMESTAMP
INSERT INTO clientmstr (client_id, client_name, client_email, client_phone) VALUES
(1, 'Aarav Sharma', 'aarav.sharma@example.com', '987-654-3210'), (2, 'Priya Gupta', 'priya.gupta@example.com', '998-765-4321'), (3, 'Rahul Patel', 'rahul.patel@example.com', '967-843-2101');
*****
DELIMITER $$
CREATE TRIGGER after_update_clientmstr_row
AFTER UPDATE ON clientmstr
FOR EACH ROW
BEGIN
   INSERT INTO audit_trade (client_id, client_name, client_email, client_phone,
operation)
   VALUES (OLD.client_id, OLD.client_name, OLD.client_email, OLD.client_phone,
'UPDATE');
END$$
DELIMITER;
*******
DELIMITER $$
```

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CREATE TRIGGER after_delete_clientmstr_row
AFTER DELETE ON clientmstr
FOR EACH ROW
BEGIN
  INSERT INTO audit_trade (client_id, client_name, client_email, client_phone,
operation)
  VALUES (OLD.client_id, OLD.client_name, OLD.client_email, OLD.client_phone,
'DELETE');
END$$
DELIMITER;
**************************
******
UPDATE clientmstr
SET client_name = 'Siddhi Seth', client_email = 'siddhi.seth@gmail.com'
WHERE client_id = 1;
DELETE FROM clientmstr WHERE client id = 2;
******************
SELECT * FROM audit trade;
______
______
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18.Trigger
b) Write a before trigger for Insert, update event considering following
requirement:
Emp(e_no, e_name, salary) I) Trigger action should be initiated when salary is
tried to be
inserted is less than Rs. 50,000/- II) Trigger action should be initiated when
salary is tried to be
updated for value less than Rs. 50,000/- Action should be rejection of update or
Insert
operation by displaying appropriate error message. Also the new values expected to
be inserted
will be stored in new table Tracking(e_no, salary).
ANSWER: -
CREATE DATABASE practest;
                ******
Use practest;
CREATE TABLE Emp (
  e_no INT PRIMARY KEY,
  e_name VARCHAR(50),
  salary DECIMAL(10, 2)
DELIMITER $$
CREATE TRIGGER before_insert_emp
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```
BEFORE INSERT ON Emp
FOR EACH ROW
BEGIN
   IF NEW.salary < 50000 THEN
       SIGNAL SQLSTATE '45000'
       SET MESSAGE_TEXT = 'Salary cannot be less than Rs. 50,000 for new
employees.';
   END IF;
END$$
DELIMITER;
*************************
DELIMITER $$
CREATE TRIGGER before_update_emp
BEFORE UPDATE ON Emp
FOR EACH ROW
BEGIN
   IF NEW.salary < 50000 THEN
       SIGNAL SOLSTATE '45000'
       SET MESSAGE_TEXT = 'Salary cannot be reduced to less than Rs. 50,000.';
   END IF;
END$$
DELIMITER;
****************************
******
INSERT INTO Emp (e_no, e_name, salary) VALUES (1, 'Rahul Singh', 60000);
INSERT INTO Emp (e_no, e_name, salary) VALUES (2, 'Anita Deshmukh', 75000); INSERT INTO Emp (e_no, e_name, salary) VALUES (3, 'Vikas Kumar', 52000);
INSERT INTO Emp (e_no, e_name, salary) VALUES (4, 'Priya Mehta', 45000);
-- Expected result: An error message saying, "Salary cannot be less than Rs. 50,000
for new employees."
*************************
******
UPDATE Emp SET salary = 40000 WHERE e_no = 1;
--Expected result: An error message saying, "Salary cannot be reduced to less than
Rs. 50,000."
```