**Instructions:**

Please share your answers filled in line in the Word document. Submitcode

separately wherever applicable.

Please ensure you update all the details:

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**Topic: Introduction to Database**

1. **Write an SQL query to accomplish the following tasks:**

* 1. Create a database named **student\_db**.

CREATE DATABASE IF NOT EXISTS student\_db;

* 1. Create a table named **students\_details** with columns **id** (integer), **name** (varchar), **age** (integer), and **grade** (float). id should be set as the primary key

CREATE TABLE IF NOT EXISTS students\_details (

id INT PRIMARY KEY,

name VARCHAR(50),

age INT,

grade FLOAT

);

* 1. Insert any four records into **students\_details**.

INSERT INTO students\_details (id, name, age, grade) VALUES

(1, 'John', 17, 85.5),

(2, 'Alice', 19, 92.3),

(3, 'Bob', 21, 78.9),

(4, 'Emily', 16, 88.2);

* 1. Create a new table named **students\_details\_copy** with the same columns as **students\_details**. **id** should also be set as the primary key.

CREATE TABLE IF NOT EXISTS students\_details\_copy LIKE students\_details;

* 1. Create a trigger named **after\_insert\_details** that inserts a new record into **students\_details\_copy** every time a record is inserted into students\_details.

DELIMITER //

CREATE TRIGGER after\_insert\_details

AFTER INSERT ON students\_details

FOR EACH ROW

BEGIN

INSERT INTO students\_details\_copy (id, name, age, grade)

VALUES (NEW.id, NEW.name, NEW.age, NEW.grade);

END;

//

DELIMITER ;

* 1. Insert a new record into **students\_details.**

INSERT INTO students\_details (id, name, age, grade) VALUES (5, 'Sofia', 18, 91.7);

* 1. check whether a record is filling in **students\_details\_copy** as you insert value in **students\_details.**

SELECT \* FROM students\_details\_copy;

1. **Write an SQL question that accomplishes the following tasks:**

* 1. use **student\_db ,**

USE student\_db;

* 1. Create a trigger named **update\_grade** that automatically updates the **grade** column every time a record in **students\_details** is updated based on the following criteria:
  2. If the updated record has an age value less than 18, multiply the grade by 0.9.
  3. If the updated record has an age value between 18 and 20 (inclusive), multiply the grade by 1.1.

* 1. If the updated record has an age value greater than 20, multiply the grade by 1.05.
  2. Update the age value of one of the records in students\_new to see the trigger in action.

DELIMITER //

CREATE TRIGGER update\_grade

BEFORE UPDATE ON students\_details

FOR EACH ROW

BEGIN

IF NEW.age < 18 THEN

SET NEW.grade = NEW.grade \* 0.9;

ELSEIF NEW.age >= 18 AND NEW.age <= 20 THEN

SET NEW.grade = NEW.grade \* 1.1;

ELSE

SET NEW.grade = NEW.grade \* 1.05;

END IF;

END;

//

DELIMITER ;

UPDATE students\_details SET age = 17 WHERE id = 1;

1. **Explain the difference between the AFTER and INSTEAD OF trigger operators in SQL.**

AFTER Trigger: An AFTER trigger in SQL is executed after the triggering event (such as INSERT, UPDATE, DELETE) has occurred and the changes have been applied to the database. This type of trigger is commonly used for tasks that need to be performed after the data modification operation has completed.

INSTEAD OF Trigger: An INSTEAD OF trigger in SQL is executed instead of the triggering event. It provides an alternative action to be taken instead of the default action that would occur due to the triggering event. INSTEAD OF triggers are often used with views or to handle special cases where the default behavior of a database operation needs to be overridden.

1. **What is the purpose of the INSTEAD OF DELETE trigger operator in SQL?**

An INSTEAD OF DELETE trigger in SQL is used to specify an alternative action to be performed instead of the default deletion operation when rows are deleted from a table. This type of trigger is commonly used to control or restrict the deletion of rows based on certain conditions, or to perform additional tasks such as logging or archiving data before it is deleted.