DBMSL ASSIGNMENT - 5

Roll No. : 31446

Write a Stored Procedure namely proc_Grade for the categorization of student.

If marks scored by students in examination is <=1500 and marks>=990 then student will be placed in distinction category

If marks scored are between 989 and 900 category is first class,

If marks 899 and 825 category is Higher Second Class.

Write a PL/SQLblock to use procedure created with above requirement.

Stud_Marks(name, total_marks)

Result(Roll,Name, Class)

1) CREATE TABLES

```
CREATE TABLE Stud_Marks(
      Roll INT PRIMARY KEY,
      Name VARCHAR(50),
      Total_Marks INT NOT NULL
);
```

```
DESC Stud_Marks;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| Roll        | int         | NO   | PRI | NULL    |       |
| Name        | varchar(50) | YES  |     | NULL    |       |
| Total_Marks | int         | NO   |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
```

```
CREATE TABLE Result(
      Roll INT PRIMARY KEY NOT NULL,
      Name VARCHAR(50),
      Class VARCHAR(20)
);
```

```
DESC Result;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| Roll  | int         | NO   | PRI | NULL    |       |
| Name  | varchar(50) | YES  |     | NULL    |       |
| Class | varchar(20) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
```

2) INSERT SAMPLE RECORDS

```
INSERT INTO Stud_Marks(Roll, Name, Total_Marks) VALUES
(101,'Kiran',900),
(102,'Atul',950),
(103,'Nitin',1050),
(104,'Raj',850),
(105,'Sanket',1000),
(106,'Yash',830);
```

```
SELECT * FROM Stud_Marks;
+------+--------+-------------+
| Roll | Name   | Total_Marks |
+------+--------+-------------+
|  101 | Kiran  |         900 |
|  102 | Atul   |         950 |
|  103 | Nitin  |        1050 |
|  104 | Raj    |         850 |
|  105 | Sanket |        1000 |
|  106 | Yash   |         830 |
+------+--------+-------------+
6 rows in set (0.00 sec)
```

3) STORED PROCEDURE

```
DELIMITER $$
CREATE PROCEDURE proc_Grade(
      IN p_roll INT
)
BEGIN
      DECLARE v_name VARCHAR(50);
      DECLARE v_marks INT;
      DECLARE v_class VARCHAR(20);

      DECLARE EXIT HANDLER FOR SQLEXCEPTION
      BEGIN
            SELECT 'Error occurred while processing the procedure!' AS MESSAGE;
      END;

      DECLARE EXIT HANDLER FOR NOT FOUND
      BEGIN
            SELECT CONCAT('No record found for Roll = ', p_roll) AS MESSAGE;
      END;

      SELECT Name, Total_Marks INTO v_name, v_marks FROM Stud_Marks WHERE Roll =
      p_roll;

      IF v_marks <= 1500 AND v_marks >= 990 THEN
            SET v_class = 'Distinction';
      ELSEIF v_marks <= 989 AND v_marks >= 900 THEN
            SET v_class = 'First Class';
      ELSEIF v_marks <= 899 AND v_marks >= 825 THEN
            SET v_class = 'Higher Second Class';
      ELSE
            SET v_class = 'No Category';
      END IF;

      INSERT INTO Result VALUES(p_roll, v_name, v_class);
      SELECT 'Record inserted successfully!' AS MESSAGE;
END $$
DELIMITER ;
```

4) EXECUTE PROCEDURE

```
CALL proc_Grade(101);
+-------------------------------+
| MESSAGE                       |
+-------------------------------+
| Record inserted successfully! |
+-------------------------------+

CALL proc_Grade(102);
+-------------------------------+
| MESSAGE                       |
+-------------------------------+
| Record inserted successfully! |
+-------------------------------+
```

```
CALL proc_Grade(103);
+------------------------------+
| MESSAGE                      |
+------------------------------+
| Record inserted successfully! |
+------------------------------+


CALL proc_Grade(104);
+------------------------------+
| MESSAGE                      |
+------------------------------+
| Record inserted successfully! |
+------------------------------+

CALL proc_Grade(105);
+------------------------------+
| MESSAGE                      |
+------------------------------+
| Record inserted successfully! |
+------------------------------+

CALL proc_Grade(106);
+------------------------------+
| MESSAGE                      |
+------------------------------+
| Record inserted successfully! |
+------------------------------+

CALL proc_Grade(107);
+-------------------------------+
| MESSAGE                       |
+-------------------------------+
| No record found for Roll = 107 |
+-------------------------------+


SELECT * FROM Result;
+------+--------+---------------------+
| Roll | Name   | Class               |
+------+--------+---------------------+
|  101 | Kiran  | First Class         |
|  102 | Atul   | First Class         |
|  103 | Nitin  | Distinction         |
|  104 | Raj    | Higher Second Class |
|  105 | Sanket | Distinction         |
|  106 | Yash   | Higher Second Class |
+------+--------+---------------------+
```

5) STORED FUNCTION

```
DELIMITER $$
CREATE FUNCTION func_Grade(
      p_roll INT
)
RETURNS VARCHAR(20)
DETERMINISTIC
BEGIN
      DECLARE v_marks INT;
      DECLARE v_class VARCHAR(20);

      DECLARE EXIT HANDLER FOR SQLEXCEPTION
    BEGIN
      RETURN 'Error occurred!';
      END;

    DECLARE EXIT HANDLER FOR NOT FOUND
    BEGIN
        RETURN 'No record found!';
    END;

      SELECT Total_Marks INTO v_marks FROM Stud_Marks WHERE Roll = p_roll;

      IF v_marks <= 1500 AND v_marks >= 990 THEN
          SET v_class = 'Distinction';
      ELSEIF v_marks <= 989 AND v_marks >= 900 THEN
      SET v_class = 'First Class';
      ELSEIF v_marks <= 899 AND v_marks >= 825 THEN
          SET v_class = 'Higher Second Class';
      ELSE
          SET v_class = 'No Category';
      END IF;

    RETURN v_class;

END $$
DELIMITER ;
```

6) EXECUTE FUNCTION

```
SELECT func_Grade(101);
+-----------------+
| func_Grade(101) |
+-----------------+
| First Class     |
+-----------------+

SELECT Roll, Name, Total_Marks, func_Grade(Roll) AS Grade FROM Stud_Marks;
+------+--------+-------------+---------------------+
| Roll | Name   | Total_Marks | Grade               |
+------+--------+-------------+---------------------+
|  101 | Kiran  |         900 | First Class         |
|  102 | Atul   |         950 | First Class         |
|  103 | Nitin  |        1050 | Distinction         |
|  104 | Raj    |         850 | Higher Second Class |
|  105 | Sanket |        1000 | Distinction         |
|  106 | Yash   |         830 | Higher Second Class |
+------+--------+-------------+---------------------+
6 rows in set (0.00 sec)
```

```
INSERT INTO Result(Roll, Name, Class) SELECT Roll, Name, func_Grade(Roll) FROM
Stud_Marks WHERE Roll = 101;

INSERT INTO Result(Roll, Name, Class) SELECT Roll, Name, func_Grade(Roll) FROM
Stud_Marks WHERE Roll = 102;

INSERT INTO Result(Roll, Name, Class) SELECT Roll, Name, func_Grade(Roll) FROM
Stud_Marks WHERE Roll = 103;

INSERT INTO Result(Roll, Name, Class) SELECT Roll, Name, func_Grade(Roll) FROM
Stud_Marks WHERE Roll = 104;

INSERT INTO Result(Roll, Name, Class) SELECT Roll, Name, func_Grade(Roll) FROM
Stud_Marks WHERE Roll = 105;

INSERT INTO Result(Roll, Name, Class) SELECT Roll, Name, func_Grade(Roll) FROM
Stud_Marks WHERE Roll = 106;

SELECT * FROM Result;
+------+--------+---------------------+
| Roll | Name   | Class               |
+------+--------+---------------------+
|  101 | Kiran  | First Class         |
|  102 | Atul   | First Class         |
|  103 | Nitin  | Distinction         |
|  104 | Raj    | Higher Second Class |
|  105 | Sanket | Distinction         |
|  106 | Yash   | Higher Second Class |
+------+--------+---------------------+
6 rows in set (0.00 sec)
```