

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](#)

Here's a stored procedure named proc_Grade that categorizes students based on their marks according to the specified criteria. This example uses MySQL syntax for creating the procedure.

SQL Code for Stored Procedure

sql

Copy code

DELIMITER \$\$

```
CREATE PROCEDURE proc_Grade(IN marks INT, OUT category VARCHAR(50))
```

```
BEGIN
```

```
    IF marks >= 990 AND marks <= 1500 THEN
```

```
        SET category = 'Distinction';
```

```
    ELSEIF marks >= 900 AND marks <= 989 THEN
```

```
        SET category = 'First Class';
```

```
    ELSEIF marks >= 825 AND marks <= 899 THEN
```

```
        SET category = 'Higher Second Class';
```

```
    ELSE
```

```
        SET category = 'No Category';
```

```
    END IF;
```

```
END $$
```

DELIMITER ;

Explanation of the Code

1. **DELIMITER:** Changes the statement delimiter temporarily to \$\$ to allow for the creation of the procedure without prematurely ending it with a semicolon (;).
2. **CREATE PROCEDURE:**
 - proc_Grade is the name of the procedure.
 - IN marks INT specifies that the procedure takes an input parameter marks of type INT.
 - OUT category VARCHAR(50) specifies that the procedure will output a category as a string.

3. **BEGIN ... END:** Defines the body of the stored procedure.

4. **IF-ELSEIF Statements:**

- The procedure checks the value of marks against defined ranges and sets the category variable accordingly.
- Categories:
 - **Distinction:** For marks between 990 and 1500.
 - **First Class:** For marks between 900 and 989.
 - **Higher Second Class:** For marks between 825 and 899.
 - **No Category:** For marks outside these ranges.

5. **DELIMITER ;** Resets the statement delimiter back to ;.

Example of Calling the Procedure

To use the proc_Grade stored procedure, you can call it as follows:

sql

Copy code

```
-- Declare a variable to hold the output category
```

```
SET @category = '';
```

```
-- Call the stored procedure with a sample mark
```

```
CALL proc_Grade(980, @category);
```

```
-- Select the output category
```

```
SELECT @category AS Student_Category;
```

Explanation of the Example

- SET @category = ''; initializes a variable to hold the output.
- CALL proc_Grade(980, @category); calls the procedure with a sample mark (980 in this case).
- SELECT @category AS Student_Category; retrieves the output category assigned by the procedure.

Testing

You can test the procedure with various input values to ensure that it categorizes students correctly based on their marks.

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