**Stored Procedure: dbo.StudentExamCorrection**

**Purpose**

This stored procedure is designed to **automatically grade the answers** submitted by a specific student for a specific exam. It compares the student's answers against the correct model answers stored in the Question\_Bank table and updates the Student\_Grade for each answer in the Student\_Exam\_Answer table.

**Parameters**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Data Type** | **Description** | **Notes** |
| @StudentID | INT | The unique identifier (**Student\_ID**) of the student whose exam is being graded. | Required |
| @ExamID | INT | The unique identifier (**Exam\_ID**) of the exam being graded. | Required |

**Logic**

1. **Join Tables:**
   * The procedure performs an INNER JOIN between the dbo.Student\_Exam\_Answer table (aliased as sa) and the dbo.Question\_Bank table (aliased as qb) using the Question\_ID. This allows access to the student's submitted answer (sa.Student\_Answer), the correct model answer (qb.Question\_Model\_Answer), and the question type (qb.Question\_Type) for each question.
2. **Filter Records:**
   * The WHERE clause ensures that only the records belonging to the specific @StudentID and @ExamID passed into the procedure are processed.
3. **Grade Calculation (using CASE statement):**
   * The UPDATE statement modifies the sa.Student\_Grade column for each relevant row based on the following logic within the CASE statement:
     + **Skipped Answer:** If sa.Student\_Answer is NULL, the Student\_Grade is set to 0.
     + **True/False Question:** If qb.Question\_Type is 'True/False', it compares sa.Student\_Answer with qb.Question\_Model\_Answer **case-insensitively** (using UPPER). If they match, the Student\_Grade is set to 1.
     + **MCQ Question:** If qb.Question\_Type is 'MCQ', it compares sa.Student\_Answer with qb.Question\_Model\_Answer **case-sensitively**. If they match exactly, the Student\_Grade is set to 1.
     + **Incorrect Answer:** For all other conditions (the answers don't match according to the rules above), the Student\_Grade is set to 0.
4. **Update Grades:**
   * The calculated grade (0 or 1) is written to the Student\_Grade column for each corresponding answer row in the dbo.Student\_Exam\_Answer table.

**Usage Example**

SQL

-- Grade Exam ID 45 for Student ID 123

EXEC dbo.StudentExamCorrection @StudentID = 123, @ExamID = 45;

-- After execution, you can check the grades:

SELECT Question\_ID, Student\_Answer, Student\_Grade

FROM dbo.Student\_Exam\_Answer

WHERE Student\_ID = 123 AND Exam\_ID = 45;