

### `sp_generate_exam`

Description: This stored procedure generates an exam for a given course by randomly selecting a specified number of Multiple Choice Questions (MCQ) and True/False (T/F) questions. It then creates a new exam entry in the exam table, assigns a name based on the course and the number of existing exams for that course, and links the selected questions to the new exam in the exam\_question table.

#### Parameters:

- `@course_id` INT: The ID of the course for which the exam is to be generated.
- `@mcq_questions` INT: The number of MCQ questions to include in the exam.
- `@tf_questions` INT: The number of True/False questions to include in the exam.

### `sp_generate_exam_v2`

Description: This is an alternative version of `sp_generate_exam` that serves the same purpose. It generates an exam for a given course by randomly selecting a specified number of Multiple Choice Questions (MCQ) and True/False (T/F) questions. It uses a table variable (`@SelectedQuestions`) instead of a temporary table (`#SelectedQuestions`) to store the selected question IDs. It then creates a new exam entry in the exam table, assigns a name, and links the selected questions to the new exam.

#### Parameters:

- `@course_id` INT: The ID of the course for which the exam is to be generated.
- `@mcq_questions` INT: The number of MCQ questions to include in the exam.
- `@tf_questions` INT: The number of True/False questions to include in the exam.

### `sp_get_exam`

Description: This stored procedure retrieves the details of all questions and their associated choices for a specific exam. It joins the question, exam\_question, and choice tables to provide a comprehensive view of the exam content.

#### Parameters:

- `@exam_id` INT: The ID of the exam for which to retrieve details.

### `fn_get_exam_answers`

Description: This table-valued function returns the correct answers for all questions belonging to a specified exam. It joins the question and exam\_question tables to filter questions by exam ID and retrieve their answers.

#### Parameters:

- `@exam_id` INT: The ID of the exam for which to retrieve answers.

## `dbo.sp_save_student_answers`

Description: This stored procedure saves a student's answers for a given exam. It first verifies the existence of the student and the exam/course. If the student has not previously taken this specific exam for this course, it inserts a new record into `student_exam_course`. Then, it inserts the provided question IDs and their corresponding answers into the `student_answers` table. The procedure uses a transaction for atomicity and includes error handling.

Parameters:

- `@exam_id` INT: The ID of the exam.
- `@student_full_name` VARCHAR(150): The full name of the student (first name and last name concatenated).
- `@qId1` to `@qId10` INT: The IDs of the questions (up to 10 questions).
- `@ans1` to `@ans10` VARCHAR(20): The student's answers for the corresponding questions.

## `sp_correct_exam`

Description: This stored procedure calculates and returns the correction results for a student's performance on a specific exam. It determines the number of correct answers, the total number of questions, the earned grade, the total possible grade, and the percentage score.

Parameters:

- `@exam_id` INT: The ID of the exam to be corrected.
- `@student_full_name` VARCHAR(255): The full name of the student whose exam is being corrected.

## `sp_get_track_courses`

Description: This stored procedure retrieves a list of courses associated with a specific track. It joins the `course` and `track_course` tables to filter courses by the provided track ID.

Parameters:

- `@trackId` INT: The ID of the track for which to retrieve associated courses.