

# SQL Server Procedures and Triggers - Exercises and Quiz

## Matching Exercise: Stored Procedures

Match the stored procedure to its function:

- A. sp\_GetAllStudents
- B. sp\_InsertStudent
- C. sp\_DeleteStudent
- D. sp\_UpdateGPA
- E. sp\_StudentsAboveGPA

- 1. Deletes a student by ID
- 2. Updates a student's GPA
- 3. Returns all student records
- 4. Inserts a new student into the database
- 5. Returns students with GPA above a certain value

Answer Key:

- A - 3
- B - 4
- C - 1
- D - 2
- E - 5

## Quiz: Stored Procedures

Quiz: Stored Procedures

- 1. What is the main advantage of using a stored procedure?
  - A. Saves space on the server
  - B. Avoids writing SQL
  - C. Allows precompiled, reusable logic
  - D. Replaces all queries
  
- 2. Which command is used to execute a procedure named sp\_GetAllStudents?
  - A. CALL sp\_GetAllStudents
  - B. RUN sp\_GetAllStudents
  - C. EXEC sp\_GetAllStudents
  - D. BEGIN sp\_GetAllStudents

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3. True or False: You must always provide parameters when executing any stored procedure.

Answer Key:

1 - C

2 - C

3 - False

## Practice Assignment: Stored Procedures

Practice Assignment: Stored Procedures

Task 1: Write a procedure to return students whose names start with 'A'.

Task 2: Write a procedure to delete students with GPA below 2.0.

Task 3: Write a procedure to update all students and add 0.1 to their GPA.

Task 4: Write a procedure to count how many students enrolled in the last 30 days.

Sample Answer for Task 1:

```
CREATE PROCEDURE sp_StudentsStartingWithA
AS
BEGIN
    SELECT * FROM Students WHERE Name LIKE 'A%';
END;
```

## Matching Exercise: Triggers

Match the trigger to its function:

- A. trg\_LogInsert
- B. trg\_ValidateGPA
- C. trg\_ArchiveOnDelete
- D. trg\_GPACheck
- E. trg\_AutoTimestamp

- 1. Ensures GPA does not exceed 4.0
- 2. Logs GPA updates into a log table
- 3. Adds a timestamp when a record is updated
- 4. Logs a message when a new student is inserted

## SQL Server Procedures and Triggers - Exercises and Quiz

5. Saves deleted student data to an archive table

Answer Key:

A - 4

B - 1

C - 5

D - 2

E - 3

### Quiz: Triggers

Quiz: Triggers

1. What does an AFTER trigger do?

- A. Prevents the operation from executing
- B. Executes before the operation
- C. Executes after the operation completes
- D. Deletes the operation

2. Which virtual table holds the newly inserted data?

- A. deleted
- B. updated
- C. inserted
- D. temp

3. True or False: Triggers can call other triggers.

Answer Key:

1 - C

2 - C

3 - True

### Practice Assignment: Triggers

Practice Assignment: Triggers

Task 1: Create a trigger to prevent inserting students named 'Anonymous'.

Task 2: Create a trigger to log changes in GPA.

## SQL Server Procedures and Triggers - Exercises and Quiz

Task 3: Create a trigger to auto-calculate and update a 'Status' column based on GPA.

Task 4: Create a trigger to count and print the total number of students after an insert.

Sample Answer for Task 1:

```
CREATE TRIGGER trg_PreventAnonymous
ON Students
AFTER INSERT
AS
BEGIN
    IF EXISTS (SELECT 1 FROM inserted WHERE Name = 'Anonymous')
    BEGIN
        RAISERROR('Anonymous is not allowed as a student name.', 16, 1);
        ROLLBACK;
    END
END;
```