

Task 8: Triggers and Procedures

This task focuses on **automating actions** using **triggers** and **procedures** to improve database efficiency and maintainability.

Section 1: Triggers & Procedures

Objective

- ♦ **Automate actions** using **triggers** and create **procedures** for reusable database operations.

Tasks to Perform

1. Triggers

- Automatically **log updates** in a **separate table** when student records change.
- Use **AFTER UPDATE** trigger to capture changes.

2. Procedures

- Create a **stored procedure** to **update student grades** based on their performance.
- Ensure **flexibility** to handle different grading criteria.

 **Deliverable:** Automated logging and reusable grade update logic.

Section 2: Explanation of Queries

How Triggers Work

- ✓ **Triggers** execute automatically **after specific actions** (e.g., insert, update, delete).
- ✓ Used to **log changes** in a separate **audit table**.

How Procedures Work

- ✓ **Stored procedures** encapsulate **reusable** SQL operations.
 - ✓ Helps in **bulk updates** like modifying student grades based on conditions.
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Section 3: Execution & Validation

1 Define Triggers & Procedures

- **Write queries** to create triggers and procedures.

2 Test with Updates

- Perform updates to check if the **trigger logs changes** correctly.
- Run the procedure to ensure **grades update properly**.

3 Validate Results

- Check **log tables** for trigger execution.
- Verify **grades reflect the intended changes**.

Deliverables

- ✓ **Screenshots of queries & results**
- ✓ **Explanations for each query**
- ✓ **Summary of findings**

Would you like additional **examples or best practices** for database automation? 

Deadline Compliance

- **Restriction: Submit the project within 7 days** from the start date.
- **Reason:** Meeting deadlines is crucial in the real-world software development environment. This restriction helps students practice **time management** and **task prioritization**. In professional settings, tight deadlines are often the norm, and learning to meet them without compromising quality is an essential skill.
- **Learning Outcome:** Students will learn to manage their time effectively, complete projects under pressure, and **deliver results on time**, which are all important skills in the workplace.