



DATABASE PROGRAMMING

Instructions

- Complete all tasks below.
- **TOPIC:** WORKING WITH FUNCTIONS AND STORED PROCEDURES

QUESTION

1. Creating a Simple Function

- Write a SQL function to calculate the total price (price * quantity) of a given product based on its `product_id`.

2. Using a Function in a Query

- Write a query that calls the function you created in question 1 to find the total price for all products in the `products` table.

3. Creating a Stored Procedure

- Write a stored procedure that accepts an `employee_id` and updates their salary based on a given percentage.

4. Calling a Stored Procedure

- Write a SQL statement to call the stored procedure created in question 3 to increase the salary of an employee with `employee_id = 5` by 10%.

5. Stored Procedure with Multiple Parameters

- Write a stored procedure that accepts a `customer_id` and a `status`, and updates the status of all orders for that customer.

6. Handling Errors in Stored Procedures

- Write a stored procedure that implements error handling to ensure that an error message is returned if an invalid `customer_id` is provided.

7. Using Cursors in Stored Procedures

- Write a stored procedure that uses a cursor to loop through all products and print their names and prices.

8. Function with Conditional Logic

- Write a function that classifies a student's grades into "Pass" or "Fail" based on their score.

9. Nested Stored Procedures

- Write a stored procedure that calls another stored procedure to calculate the average salary of employees in a specific department.

10. Returning a Result Set

- Write a stored procedure that returns a list of all orders made by a specific customer.

11. Transaction Management in Stored Procedures

- Write a stored procedure that transfers funds between two accounts, including proper handling of transactions to ensure data integrity.

12. Using Dynamic SQL

- Write a stored procedure that accepts a table name and dynamically queries that table for a specific condition.

13. Optimizing Functions

- Explain how to optimize a function for performance and provide an example of a scenario where optimization would be necessary.

14. Triggers vs. Stored Procedures

- Write a simple trigger that automatically updates a `last_updated` timestamp column whenever a record in the `employees` table is modified.

15. Function with Table Return Value

- Write a function that returns all products whose price is greater than a specified amount as a table.

END