Project Management Exercise

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1.1. Simple Stored Procedures

1. Write a stored procedure to print 'Hello'.
2. Write a stored procedure to print 'Xin chào' (Vietnamese for 'Hello').
3. Write a stored procedure to print 'Xin chào' + @yourName, where @yourName is an input parameter representing your name.
4. Write a stored procedure to print 'Xin chào' + @ten, where @ten is an input parameter representing your Vietnamese-accented name. Suggestions:
    - Use Telex to type in Vietnamese.
    - Unicode strings must start with N (e.g., N'Tiếng Việt').
    - Use the cast function (cast(<expression> as <type>)) to convert <expression> to the <type>.
5. Write a stored procedure that takes 2 numbers @s1, @s2 as input and prints their sum @s1+@s2.
6. Write a stored procedure that takes 2 numbers @s1, @s2 as input and prints the sentence 'Sum is : @tg' where @tg=@s1+@s2.
7. Write a stored procedure that takes 2 numbers @s1, @s2 as input, calculates their sum @s1+@s2, and outputs it into the parameter @sumVal. Execute and print the value of this parameter to verify.
8. Write a stored procedure that takes 2 numbers @s1, @s2 as input, calculates their sum @s1+@s2, and outputs it into the parameter @sumVal. Execute and print the value of this parameter as 'Sum is : @tg' where @tg = @s1+@s2.
9. Write a stored procedure that takes 2 numbers @s1, @s2 as input and prints the maximum of them.
10. Write a stored procedure that takes 2 numbers @s1, @s2 as input and prints the sentence 'The maximum number of @s1 and @s2 is @max' where @s1, @s2, and @max are their respective values.
11. Write a stored procedure that takes 2 numbers @s1, @s2 as input, determines their min and max, and outputs them into the parameters @max, @min. Execute and print the values of these parameters to verify.

1.2. Stored Procedure with Loops

12. Write a stored procedure that takes an integer @n as input and prints numbers from 1 to @n.
13. Write a stored procedure that takes an integer @n as input and prints the sum of even numbers from 1 to @n.
14. Write a stored procedure that takes an integer @n as input, then prints the sum and count of even numbers from 1 to @n.
15. Write a stored procedure that takes 2 numbers as input and prints their greatest common divisor (GCD) using the following guidelines:
    b1. Start by assuming a <= A.
    b2. If A is divisible by a, then: (a,A) = a

otherwise: (a,A) = (A%a,a) or (a,A) = (a,A-a)

b3. Repeat b1, b2 until the condition in b2 is satisfied.

16. Write a stored procedure that takes two integers @s1 and @s2 as input. Output the greatest common divisor (GCD) of @s1 and @s2 to the parameter @gcd. Execute and use the 'select' command to print the value of this parameter for verification in the format 'Result: gcd(@s1,@s2) = @gcd', replacing @s1, @s2, and @gcd with their respective values.

1.3. Stored procedure with Cursor

17. Write a stored procedure with the following content: Use the 'print' command to display a list of employee ids.
18. Write a stored procedure with the following content: Use the 'print' command to display a list of employee ids and their first names.

1.4 Trigger

Simple trigger

19. Write a trigger that, when adding, editing the FAMILYMEMBER, prints a notification: 'A family member has been added'.
    Suggestion: Check if the trigger has been created by using a block of commands to avoid data modification:
    begin tran
        insert, update, delete
    rollback

Assuming the following update operations are executed on the database. Identify all constraints that may be violated with each operation. For each case, provide different approaches to ensure that those constraints are not violated.

20. Insert row < 'Tuan', 'Minh', Tran', '943775543', '6/21/42', '23/65 Tran Binh Trong Q5, TP HCM', 'Male', 58000, '888665555', 1> into EMPLOYEE table.
21. Insert row <'Project A', 4, 'Vung Tau', 2> into PROJECT table.
22. Insert row <'Production', 4, '943775543', '10/01/88'> into DEPARTMENT table.
23. Insert row <'677678989',null, 40.0> into ASSIGNMENT table.
24. Insert row <'453453453', 'Tien', 'Male', '12/12/60', 'Spouse'> into FAMILYMEMBER table.
25. Update ASSIGNMENT table, setting all rows where EMPLOYEE_ID = '333445555' to 'Aoa'.
26. Delete rows from EMPLOYEE table where EMPLOYEE_ID='987654321'.
27. Delete rows from PROJECT table where PROJECTNAME= 'Project X'.
28. Update values in the attributes DEPARTMENT_HEAD, APPOINTMENT_DATE in DEPARTMENT table where DEPARTMENT_ID= 5 to '123456789' and '01/10/88'.
29. Update values in the attribute DURATION to 5 in ASSIGNMENT table where EMPLOYEE_ID ='999887777' and PROJECT_ID= 10.