Coding: Procedural SQL 1

Instructions
You will write a single PL/SQL script which solves the following 4 programming problems.

Pre-requisite:

1. You must be able to develop your script with access to an Oracle instance, preferably from data.cs.purdue.edu.
2. You will need the following SQL statements to create and populate a table called person:
    1. ```
       CREATE TABLE person (id integer, name
       varchar2(20));
       INSERT INTO person values(1, 'Alice');
       INSERT INTO person values(2, 'Bob');
       INSERT INTO person values(3, 'Charlie');
       INSERT INTO person values(4, 'David');
       COMMIT;
       ```

Objective:

For each programming problem below, you must implement a solution making use of the PL/SQL features specified for each task.

Tasks:

1. You can use this simple algorithm to determine if a number is prime: a number n is prime if no number (between 2 and n-1, inclusive) evenly divides n. Gather a positive integer from the terminal using a substitution variable. Then demonstrate that you can implement this algorithm using (at least) a loop, MOD, and if-statement. Print "Prime"
       ```

or "Non-prime" based on whether the gathered positive integer is prime.
2. Demonstrate that you can print all prime numbers between 1 and 100 inclusive using (at least) a loop and your solution from task 1. You may either copy and paste your solution from task 1 into task 2 or you may create a function to check for prime.
3. Demonstrate that you can print all names from the person table which have more than 3 characters. You must use (at least) a cursor, loop, if-statement, and LENGTH.
4. Demonstrate that you can produce the following JSON by iterating over records in the person table. You must use (at least) a cursor and loop. HINTS: You'll likely want to create a variable to append to as you iterate and you can concatenate text with the || operator. Example JSON: {"myFavoritePeople": ["Alice","Bob","Charlie","David"]}
    1. BONUS: It is actually possible to accomplish this task using only SQL queries. For an additional 10 bonus points, you may complete task 4 without using any PL/SQL (loops, cursors, if-statements, etc). For the full 10 points, you must also write a description (within comments in your script) of any SQL keywords or techniques that you used which we have not discussed in this course.

Submitting your work:

1. All work must be submitted via a single SQL script. The file name should be in the format "CSCI311-ProceduralSQL1-last_name-first-name.sql" where last_name and first_name are your actual names.
2. Your script should run without error from beginning to end and produce the desired result sets.
3. The solution for each task should be contained within a code block (BEGIN and END) and have a comment at the top specifying which task the block corresponds to.
4. Upload your script to this assignment in Brightspace.

Grading:

Criteria	Points
Adheres to submission instructions and template	10
Task 1	25
Task 2	15
Task 3	25
Task 4	25
TOTAL	100

IMPORTANT ADVICE:

- Work to format your code nicely. Code which is poorly formatted may run, but is definitely harder to read and graders may not be able to identify all of your hard work.
- Even if you don't have a full solution, submit what you do have. Some points are better than none.
- Upload your submission before the due date. You don't want to miss points due to an issue with Oracle.

Submissions

CSCI311-ProceduralSQL1-... (2.79 KB) Nov 4, 2024 11:36 AM

Drop files here, or click below!

Upload Record Choose Existing

You can upload files up to a maximum of 2.86 GB.

Comments

Paragraph

Activity Details

Well done! You have completed the assignment

Due November 4 at 11:59 PM

Assessment

100 / 100

100 %

Last Visited Dec 20, 2024 12:52 PM