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| **Part A** |
| **Aim:** SQL commands:   1. Understand the basics of PL/SQL programming 2. Declare variables, use loops, and implement conditional statements in a PL/SQL |
| **Prerequisite:** Oracle |
| **Outcome:** Getting specific output using PL/SQL Statements |
| **Theory:**  **Part 1: Declaring Variables**   * Variable student\_name of type VARCHAR2 to hold a student's name. * Variable student\_id of type NUMBER to store the student's ID. * Variable birth\_date of type DATE to store the student's birthdate.     **Part 2: Using Loops**  Write a PL/SQL block that uses a FOR loop to print the numbers from 1 to 10.    Write a PL/SQL block that uses a WHILE loop to print the even numbers between 2 and 20.    **Part 3: Using Conditional Statements**  Write a PL/SQL block that checks if a given number is positive, negative, or zero.    Write a PL/SQL block that assigns a grade based on the score using a CASE statement. The grading scale is as follows:   * 90 and above: 'A' * 80-89: 'B' * 70-79: 'C' * 60-69: 'D' * Below 60: 'F' |
| **Procedure:**   1. Formulate the query for given problem. 2. Write the SQL query with proper input. 3. Execute the query. |
| **Practice Exercise**   |  |  | | --- | --- | | 1 | Write a PL/SQL block that:   1. Declares a variable counter initialized to 1. 2. Uses a FOR loop to print the square of numbers from 1 to 5. 3. If the square of the number is greater than 10, print a message "Square exceeds 10". | | 2 | Write a PL/SQL block that declares the following variables with default values:   * first\_name (VARCHAR2) * age (NUMBER) * joining\_date (DATE)   Initialize these variables with your details | | 3 | Write a PL/SQL block that uses a FOR loop to print the first 10 multiples of 5 (i.e., 5, 10, 15, ..., 50). | | 4 | Write a PL/SQL block that uses a WHILE loop to calculate and print the factorial of a given number | | 5 | Write a PL/SQL block that checks whether a given number is positive, negative, or zero. Additionally, if the number is positive, check if it is even or odd, and display an appropriate message. | | 6 | Write a PL/SQL block that declares three variables:   * first\_name (VARCHAR2) * last\_name (VARCHAR2) * full\_name (VARCHAR2)   Concatenate the first and last names to form the full name and display it. Ensure to add a space between the first and last names. | | 7 | Write a PL/SQL block that calculates the sum of its digits. For example, for the number 123, the output should be 6 (1+2+3). | |
| **Instructions:**   1. Write and execute the query in [Oracle Live SQL](https://livesql.oracle.com/) server. 2. Paste the snapshot of the output in input & output section. |
| **Part B** |
| **Code and Output:**  Perform the operation and paste the running code here. |
| **Observation & Learning:**  Write your observation and learning after performing the task. |
| **Conclusion:**  Write statement of conclusion here. |
| **Questions:**   1. What is the difference between Char, Varchar2, Nchar and NVarchar2? 2. What is the difference between Entry and Exit controlled loops? Explain with the help of an example. 3. What are the advantages of PL/SQL? 4. Explain with examples when would you prefer to use if…else and switch…case. |