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**Course:** BE. CSE-(AIML)       **Subject:** DBMS (24CSH-298)

**Date :** 28<sup>th</sup> Jan 2026       **Section** : KRG-G1

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# Experiment 3 :

### 1. Aim of the Session-

To understand the basic structure of a PL/SQL program by creating and executing a simple PL/SQL block that includes **declaration** and **execution** sections, and to display output using built-in procedures.

### 2. Objective of the Session

To create a simple PL/SQL program demonstrating **Declaration Section** and **Execution Section**.

### 3 . Problem Statement:

Design and implement a simple PL/SQL program that demonstrates the basic structure of a PL/SQL block. The program should include a declaration section to define variables and an execution section to perform operations using those variables and display the results using appropriate output statements.

**#Declaration Section (DECLARE)**

- Variables are declared and initialized:
    - **emp_id** → Employee ID
    - **emp_name** → Employee Name
    - **emp_salary** → Employee Salary

**# Execution Section (BEGIN … END)**

- DBMS_OUTPUT.PUT_LINE is used to display output.

## 4. Theory :

PL/SQL is a block-structured programming language provided by Oracle that allows SQL statements to be combined with procedural constructs. It enables the use of variables, conditional logic, and calculations within a single program unit.

A PL/SQL program is organized into logical blocks. The first part is used for defining required variables and constants. The next part contains the main logic of the program, where operations and calculations are performed. An additional section may be included to manage errors that occur during execution.

In this experiment, a basic PL/SQL block is implemented to initialize employee-related data, perform salary and bonus calculations, and display the computed results using output statements.

## 5.Software Requirements

- **Database Management System:** Oracle Database

- **Database Administration Tool:** Oracle Live SQL

## 6.Procedure of the Practical:

1. Start the system and open the Oracle database environment.

2. Write a PL/SQL block starting with the DECLARE keyword.

3. Declare variables such as employee ID, employee name, and salary.

4. Use the BEGIN section to perform calculations like bonus and total salary.

5. Display the output using DBMS_OUTPUT.PUT_LINE.

6. End the block using END; followed by / to execute it.

7. Verify the output displayed in the DBMS output panel.

**## Program Code ##**

```
DECLARE

  v_emp_id      NUMBER := 99;
```

```
    v_emp_name     VARCHAR2(50) := 'Krish Latawa';

    v_basic_salary  NUMBER := 57000;

    v_bonus_amount  NUMBER;

    v_final_salary  NUMBER;


BEGIN

    v_bonus_amount := v_basic_salary * 0.10;


    v_final_salary := v_basic_salary + v_bonus_amount;


    DBMS_OUTPUT.PUT_LINE('Employee Details');

    DBMS_OUTPUT.PUT_LINE('----------------------');

    DBMS_OUTPUT.PUT_LINE('Employee ID       : ' || v_emp_id);

    DBMS_OUTPUT.PUT_LINE('Employee Name     : ' || v_emp_name);

    DBMS_OUTPUT.PUT_LINE('Employee Base Salary : ' || v_basic_salary);

    DBMS_OUTPUT.PUT_LINE('Bonus given (10%)   : ' || v_bonus_amount);

    DBMS_OUTPUT.PUT_LINE('Total Salary       : ' || v_final_salary);
END;
```

## 8. Output:

The program successfully displays employee details, bonus amount, and total salary using DBMS output.

```
13          -- Calculate Bonus
14          v_Bonus := (v_Salary * v_BonusPercentage) / 100;
15
16          -- Calculate Final Salary (Base Salary + Bonus)
17          v_FinalSalary := v_Salary + v_Bonus;
18
19          -- Print the variables and calculated values
20          DBMS_OUTPUT.PUT_LINE('========== Employee Information ==========');
21          DBMS_OUTPUT.PUT_LINE('Employee Name: ' || v_EmployeeName);
22          DBMS_OUTPUT.PUT_LINE('Age: ' || v_Age);
23          DBMS_OUTPUT.PUT_LINE('Base Salary: ' || v_Salary);
24          DBMS_OUTPUT.PUT_LINE('========== Bonus Calculation ==========');
25          DBMS_OUTPUT.PUT_LINE('Bonus Percentage: ' || v_BonusPercentage || '%');
26          DBMS_OUTPUT.PUT_LINE('Bonus Amount: ' || v_Bonus);
27          DBMS_OUTPUT.PUT_LINE('========== Final Salary ==========');
28          DBMS_OUTPUT.PUT_LINE('Final Salary (Base + Bonus): ' || v_FinalSalary);
29          DBMS_OUTPUT.PUT_LINE('=========================================');
30   END;
31   /
32
```

Query result    Script output    DBMS output    Explain Plan    SQL history

```
        v_Age NUMBER := 30;
        v_Salary NUMBER(10, 2) := 50000.00;...
Show more...


========== Employee Information ==========
Employee Name: Yashraj Jangra
Age: 30
Base Salary: 50000
========== Bonus Calculation ==========
Bonus Percentage: 10%
Bonus Amount: 5000
========== Final Salary ==========
Final Salary (Base + Bonus): 55000
=========================================

PL/SQL procedure successfully completed.

Elapsed: 00:00:00.005
```

## 9.Result

The program ran without errors. Variable declarations were made in the declaration block, computations were performed in the execution block, and the output was printed using **DBMS_OUTPUT.PUT_LINE**.

## 10.Learning Outcomes

1. Understand the **basic structure of a PL/SQL block** including the DECLARE, BEGIN, and END sections.
2. Learn how to **declare, initialize, and use variables** of different data types in PL/SQL.
3. Perform **arithmetic operations** in PL/SQL to calculate values such as bonus and total salary.
4. Use the **DBMS_OUTPUT.PUT_LINE** statement to display output from a PL/SQL program.
5. Gain practical knowledge of **executing PL/SQL programs in Oracle** and handling common syntax errors.