Apex Institute of Technology

Department of Computer Science & Engineering

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Branch: Computer Science & Engineering (AIML) **Section/Group:**24AIT-KRG1/G2

Semester:4th

Subject Name: DBMS

1. Aim

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 understand the basic structure of an Oracle PL/SQL block
- To learn variable declaration and initialization in PL/SQL
- To implement procedural logic using the BEGIN–END execution block
- To display output using built-in procedures such as DBMS_OUTPUT.PUT_LINE
- To strengthen foundational PL/SQL skills required for database programming, backend development, and technical interviews

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3. Theory

1. A PL/SQL block consists of three main sections:

Declaration Section (DECLARE)

- Variables, constants, cursors are declared here.

Execution Section (BEGIN … END)

- Contains executable statements.

Exception Section (EXCEPTION) *(optional)*

Think of it like a human:

- **DECLARE** → Memory
- **BEGIN** → Action
- **END** → Closure

4. Problem Statement

Design and implement a simple PL/SQL program that demonstrates the **basic structure of a PL/SQL block**.
The program should:

1. Declare variables for employee details
2. Assign values to those variables
3. Display the values using output statements

5. Procedure of the Practical

1. Open **pgAdmin / SQL environment** (conceptual PL/SQL execution).
2. Enable server output:
3. SET SERVER OUTPUT ON;
4. Write a PL/SQL block with:
   - Employee ID
   - Employee Name
   - Employee Salary
5. Assign values inside the execution section.
6. Display output using DBMS_OUTPUT.PUT_LINE.
7. Execute the block and observe the output.

5. I/O Analysis (Input / Output Analysis)

Input:

Variable	Value
Emp_id	101
Emp_name	Rahul Sharma
Emp_salary	45000

Output:

Employee ID : 101

Employee Name : Rahul Sharma

Employee Salary : 45000

SQL Implementation (PgAdmin / PostgreSQL)

```
DECLARE
   emp_id      NUMBER := 101;
   emp_name    VARCHAR2(50) := 'Amit Sharma';
   emp_salary  NUMBER := 45000;
BEGIN
   DBMS_OUTPUT.PUT_LINE('Employee Details');
   DBMS_OUTPUT.PUT_LINE('----------------');
   DBMS_OUTPUT.PUT_LINE('Employee ID    : ' || emp_id);
   DBMS_OUTPUT.PUT_LINE('Employee Name  : ' || emp_name);
```

DBMS_OUTPUT.PUT_LINE('Employee Salary: ' || emp_salary);

END;

7. Learning Outcomes

- Understand the **basic structure of a PL/SQL block**
- Declare and initialize variables in PL/SQL
- Use the **BEGIN–END** execution block
- Display output using DBMS_OUTPUT.PUT_LINE
- Develop confidence in writing simple procedural database programs

7. Screenshots

```
6
7  DECLARE
8      emp_id      NUMBER := 111;
9      emp_name    VARCHAR2(50) := 'Dibyanshu Kumar';
10     emp_salary  NUMBER := 400000;
11 BEGIN
12     DBMS_OUTPUT.PUT_LINE('Employee Details');
13     DBMS_OUTPUT.PUT_LINE('----------------');
14     DBMS_OUTPUT.PUT_LINE('Employee ID    : ' || emp_id);
15     DBMS_OUTPUT.PUT_LINE('Employee Name  : ' || emp_name);
16     DBMS_OUTPUT.PUT_LINE('Employee Salary: ' || emp_salary);
17 END;
```

Query result | Script output | DBMS output | Explain Plan | SQL history

```
Employee Details
----------------
Employee ID    : 111
Employee Name  : Dibyanshu Kumar
Employee Salary: 400000


PL/SQL procedure successfully completed.

Elapsed: 00:00:00.007
```