Experiment 3

Student Name: Srijan Tripathi　　　　　UID: 24BAI70081
Branch: CSE - AIML　　　　　　　　　Section/Group: 24AIT_KRG G1
Semester: 4　　　　　　　　　　　　Date of Performance: 28/1/26
Subject Name: Database Management System　　　　　　　Subject
Code: 24CSH-298

Aim

To develop and execute a PL/SQL program that demonstrates variable declaration, arithmetic computation, and conditional logic for employee data processing.

Software Requirements

- Database Management System:
  - PostgreSQL
- Database Administration Tool:
  - pgAdmin

Objectives

- Recall the syntax for declaring variables and using output statements in PL/SQL.
- Explain the purpose of each section (declaration, execution) in a PL/SQL block.
- Implement a PL/SQL script to calculate House Rent Allowance (HRA) and determine tax status based on income.
- Differentiate between taxable and non-taxable income using conditional statements.
- Differentiate between taxable and non-taxable income using conditional statements.
- Differentiate between taxable and non-taxable income using conditional statements.

Problem Statement

Design a PL/SQL program that accepts employee details, computes the House Rent Allowance as a percentage of income, and determines the tax status based on a specified income threshold. The program should display all relevant information in a clear, formatted manner using output statements.

Practical/Experiment Steps

- Create a PL/SQL block with declaration and execution sections.
- Declare variables for employee ID, name, income, and HRA.
- Assign sample values to the variables.
- Calculate HRA as 35% of the income.
- Use an IF-ELSE statement to check if the income meets the tax threshold.
- Display employee details, calculated HRA, and tax status using output statements.
- Format the output for clarity.

Procedure

- Open the Oracle SQL environment or compatible tool.
- Start the PL/SQL block with the DECLARE section.
- Define variables: v_id, v_name, v_income, v_hra.
- Assign values to v_id, v_name, and v_income.
- In the BEGIN section, compute v_hra as 35% of v_income.
- Print employee details and HRA using DBMS_OUTPUT.PUT_LINE.
- Apply IF-ELSE logic to determine and print tax status.
- End the PL/SQL block with END; and execute the script.
- Review the output to verify correctness.

Input/Output Analysis

SQL Input Queries

```plsql
DECLARE

    v_id NUMBER := 202;

    v_name VARCHAR2(30) := 'PRIYA';

    v_income NUMBER := 42000;

    v_hra NUMBER;

BEGIN

    v_hra := v_income * 0.35;

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

    DBMS_OUTPUT.PUT_LINE('ID: ' || v_id);

    DBMS_OUTPUT.PUT_LINE('Name: ' || v_name);

    DBMS_OUTPUT.PUT_LINE('Monthly Income: Rs. ' || v_income);

    DBMS_OUTPUT.PUT_LINE('HRA (35%): Rs. ' || v_hra);

    IF v_income >= 50000 THEN

        DBMS_OUTPUT.PUT_LINE('Tax Status: Taxable');

    ELSE

        DBMS_OUTPUT.PUT_LINE('Tax Status: Not Taxable');

    END IF;

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

END;

Output

```
ands.sql:23: NOTICE:    --- Employee Details ---
ands.sql:23: NOTICE:    ID: 202
ands.sql:23: NOTICE:    Name: PRIYA
ands.sql:23: NOTICE:    Monthly Income: Rs. 42000
ands.sql:23: NOTICE:    HRA (35%): Rs. 14700.00
ands.sql:23: NOTICE:    Tax Status: Not Taxable
ands.sql:23: NOTICE:    -----------------------
```

Learning Outcomes

- Understanding the fundamental organisation of PL/SQL declaration and execution sections.
- Learnt to declare, initialize, and use different data types within a procedural block.
- Implementing conditional branching and basic arithmetic operations to process data dynamically.
- Utilizing built-in procedures to format and display calculated results to the user.