

Experiment 3

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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.
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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

```
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.