

EXNO:11

## PL SQL PROGRAMS

### PROGRAM 1

Write a PL/SQL block to calculate the incentive of an employee whose ID is 110.

```
DECLARE
    incentive NUMBER;
BEGIN
    SELECT salary * 0.1 INTO incentive
    FROM employees
    WHERE employee_id = 110;
    DBMS_OUTPUT.PUT_LINE('Incentive for Employee 110: ' || incentive);
END;
```

```
Incentive for Employee 110: 500
```

```
Statement processed.
```

### PROGRAM 2

Write a PL/SQL block to show an invalid case-insensitive reference to a quoted and without quoted user-defined identifier.

```
DECLARE
    "MyVariable" NUMBER := 10; -- Quoted identifier (case-sensitive)
    myvariable NUMBER := 20; -- Unquoted identifier (case-insensitive)
BEGIN
    DBMS_OUTPUT.PUT_LINE('Value of "MyVariable": ' || "MyVariable");
    DBMS_OUTPUT.PUT_LINE('Value of myvariable: ' || myvariable);

    -- Attempting invalid case-insensitive reference
    DBMS_OUTPUT.PUT_LINE('Incorrect reference to "MyVariable": ' || myVariable); -- This will
    cause an error
EXCEPTION
    WHEN OTHERS THEN
        DBMS_OUTPUT.PUT_LINE('An error occurred: ' || SQLERRM);
END;
```

```
Value of "MyVariable": 10
Value of myvariable: 20
Incorrect reference to "MyVariable": 20
```

```
Statement processed.
```

```
0.09 seconds
```

### PROGRAM 3

Write a PL/SQL block to adjust the salary of the employee whose ID 122.

Sample table: employees

```
BEGIN
    UPDATE employees
    SET salary = salary + 500
    WHERE employee_id = 122;

    COMMIT;

    DBMS_OUTPUT.PUT_LINE('Salary updated for employee ID 122');
EXCEPTION
    WHEN OTHERS THEN
        DBMS_OUTPUT.PUT_LINE('Error: ' || SQLERRM);
END;
```

```
Salary updated for employee ID 122
```

```
1 row(s) updated.
```

```
0.01 seconds
```

### PROGRAM 4

Write a PL/SQL block to create a procedure using the "IS [NOT] NULL Operator" and show AND operator returns TRUE if and only if both operands are TRUE.

```
DECLARE
    PROCEDURE check_values(v1 IN VARCHAR2, v2 IN VARCHAR2) IS
    BEGIN
        IF v1 IS NOT NULL AND v2 IS NOT NULL THEN
            DBMS_OUTPUT.PUT_LINE('Both values are NOT NULL. AND condition is TRUE.');
```

```

ELSE
    DBMS_OUTPUT.PUT_LINE('AND condition is FALSE.');
```

END IF;

```

END;
```

BEGIN

```

    -- Example call to the procedure
    check_values('Hello', 'World'); -- Both values are not NULL
    check_values('Hello', NULL);    -- One value is NULL
END;
```

Both values are NOT NULL. AND condition is TRUE.  
AND condition is FALSE.

Statement processed.

0.01 seconds

#### PROGRAM 5

Write a PL/SQL block to describe the usage of LIKE operator including wildcard characters and escape character.

```

DECLARE
    v_text VARCHAR2(20) := '20% off';
BEGIN
    IF v_text LIKE '20\%%' ESCAPE '\' THEN
        DBMS_OUTPUT.PUT_LINE('Matches "20%" at the start');
    ELSIF v_text LIKE '_0%' THEN
        DBMS_OUTPUT.PUT_LINE('Second character is "0"');
    END IF;
END;
```

Matches "20%" at the start

Statement processed.

0.01 seconds

#### PROGRAM 6

Write a PL/SQL program to arrange the number of two variable in such a way that the small number will store in num\_small variable and large number will store in num\_large variable.

```
DECLARE
    num1 NUMBER := 10; -- Example value
    num2 NUMBER := 20; -- Example value
    num_small NUMBER;
    num_large NUMBER;
BEGIN
    IF num1 < num2 THEN
        num_small := num1;
        num_large := num2;
    ELSE
        num_small := num2;
        num_large := num1;
    END IF;

    DBMS_OUTPUT.PUT_LINE('Small number: ' || num_small);
    DBMS_OUTPUT.PUT_LINE('Large number: ' || num_large);
END;
```

```
Small number: 10
Large number: 20

Statement processed.

0.00 seconds
```

#### PROGRAM 7

Write a PL/SQL procedure to calculate the incentive on a target achieved and display the message either the record updated or not.

```
DECLARE
    PROCEDURE calculate_incentive(target IN NUMBER, actual_sales IN NUMBER) IS
        incentive NUMBER;
    BEGIN
        IF actual_sales >= target THEN
            incentive := actual_sales * 0.1; -- 10% incentive
            DBMS_OUTPUT.PUT_LINE('Record updated with incentive: ' || incentive);
        ELSE
```

```

        DBMS_OUTPUT.PUT_LINE('Record not updated. Target not achieved.');
```

END IF;

END;

BEGIN

```

    -- Example call to the procedure
    calculate_incentive(1000, 1200); -- Target achieved
    calculate_incentive(1000, 800);  -- Target not achieved
END;
```

```

Record updated with incentive: 120
Record not updated. Target not achieved.
```

```
Statement processed.█
```

## PROGRAM 8

Write a PL/SQL procedure to calculate incentive achieved according to the specific sale limit.

```

DECLARE
    PROCEDURE calculate_incentive(sales IN NUMBER) IS
        incentive NUMBER;
    BEGIN
        IF sales >= 1000 THEN
            incentive := sales * 0.1; -- 10% incentive for sales >= 1000
        ELSIF sales >= 500 THEN
            incentive := sales * 0.05; -- 5% incentive for sales >= 500
        ELSE
            incentive := 0; -- No incentive for sales < 500
        END IF;

        DBMS_OUTPUT.PUT_LINE('Incentive: ' || incentive);
    END;
BEGIN
    -- Example calls
    calculate_incentive(1200); -- High sales, 10% incentive
    calculate_incentive(600);  -- Medium sales, 5% incentive
    calculate_incentive(400);  -- Low sales, no incentive
END;
```

```
Incentive: 120  
Incentive: 30  
Incentive: 0
```

```
Statement processed.
```

#### PROGRAM 9

Write a PL/SQL program to count number of employees in department 50 and check whether this department have any vacancies or not. There are 45 vacancies in this department.

```
DECLARE  
    emp_count NUMBER;  
    vacancies NUMBER := 45;  
BEGIN  
    -- Count the number of employees in department 50  
    SELECT COUNT(*) INTO emp_count  
    FROM employees  
    WHERE department_id = 50;  
  
    -- Check if there are vacancies  
    IF emp_count < vacancies THEN  
        DBMS_OUTPUT.PUT_LINE('There are vacancies in department 50.');    ELSE  
        DBMS_OUTPUT.PUT_LINE('No vacancies in department 50.');    END IF;  
END;
```

```
There are vacancies in department 50.
```

```
Statement processed.
```

#### PROGRAM 10

Write a PL/SQL program to count number of employees in a specific department and check whether this department have any vacancies or not. If any vacancies, how many vacancies are in that department.

```
DECLARE  
    dept_id NUMBER := 50; -- Example department ID
```

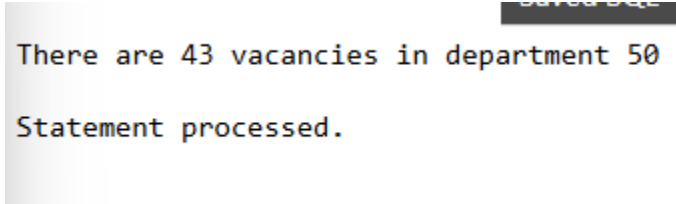
```

emp_count NUMBER;
total_vacancies NUMBER := 45; -- Total vacancies in the department
vacancies NUMBER;
BEGIN
  -- Count the number of employees in the specific department
  SELECT COUNT(*) INTO emp_count
  FROM employees
  WHERE department_id = dept_id;

  -- Calculate vacancies based on total vacancies and current employees
  vacancies := total_vacancies - emp_count;

  -- Check if there are vacancies
  IF vacancies > 0 THEN
    DBMS_OUTPUT.PUT_LINE('There are ' || vacancies || ' vacancies in department ' ||
dept_id);
  ELSE
    DBMS_OUTPUT.PUT_LINE('No vacancies in department ' || dept_id);
  END IF;
END;

```



```

There are 43 vacancies in department 50

Statement processed.

```

#### PROGRAM 11

Write a PL/SQL program to display the employee IDs, names, job titles, hire dates, and salaries of all employees.

```

BEGIN
  FOR emp IN (SELECT employee_id, first_name, job_title, hire_date, salary
              FROM employees)
  LOOP
    DBMS_OUTPUT.PUT_LINE(emp.employee_id || ' ' || emp.first_name || ' ' || emp.job_title || '
' || emp.hire_date || ' ' || emp.salary);
  END LOOP;
END;

```

```
110 John Sales Rep 06/15/2015 5000
140 Mary Admin 07/20/2019 4000
122 Jane IT Specialist 08/25/2016 6000
130 Jim HR Manager 03/10/2018 6000
150 Emily Finance Clerk 01/30/2020 4500
```

#### PROGRAM 12

Write a PL/SQL program to display the employee IDs, names, and department names of all Employees.

```
BEGIN
  FOR emp IN (SELECT e.employee_id, e.first_name, d.department_name
               FROM employees e
               JOIN departments d ON e.department_id = d.department_id)
  LOOP
    DBMS_OUTPUT.PUT_LINE('Employee ID: ' || emp.employee_id ||
                          ', Name: ' || emp.first_name ||
                          ', Department: ' || emp.department_name);
  END LOOP;
END;
```

```
Employee ID: 130, Name: Jim, Department: HR
```

```
Statement processed.
```

```
0.01 seconds
```

#### PROGRAM 13

Write a PL/SQL program to display the job IDs, titles, and minimum salaries of all jobs.

```
BEGIN
  FOR job IN (SELECT job_id, job_title, min_salary
               FROM jobs)
  LOOP
    DBMS_OUTPUT.PUT_LINE('Job ID: ' || job.job_id ||
                          ', Title: ' || job.job_title ||
                          ', Min Salary: ' || job.min_salary);
  END LOOP;
END;
```





```
        ', Job History End Date: ' || emp.end_date);  
    END LOOP;  
END;
```

```
Employee ID: 122, Name: Jane, Job History End Date:  
Employee ID: 110, Name: John, Job History End Date: 06/15/2018  
  
Statement processed.
```