Ex. No:11 **Roll No: 231901054**

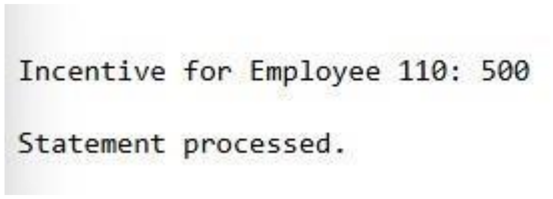
Date:09/11/2024 **Name: SUDHARSAN S**

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;
```

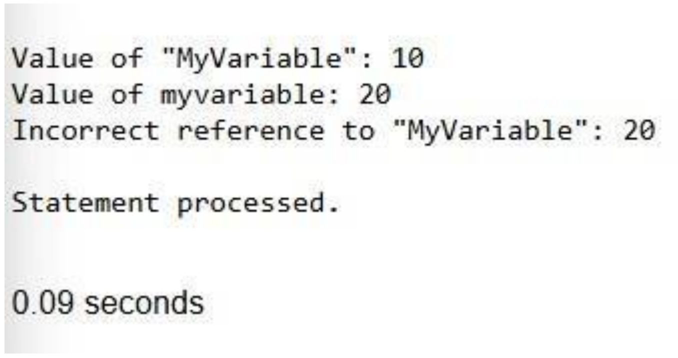


```
Incentive for Employee 110: 500

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;
```

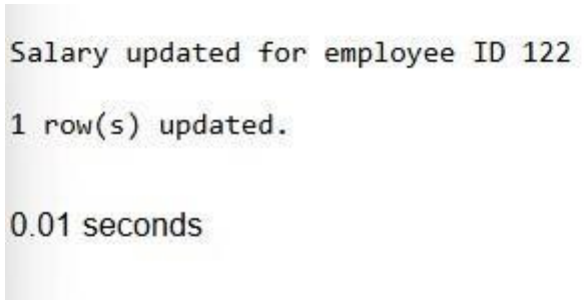


```
Value of "MyVariable": 10
Value of myvariable: 20
Incorrect reference to "MyVariable": 20

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;
```

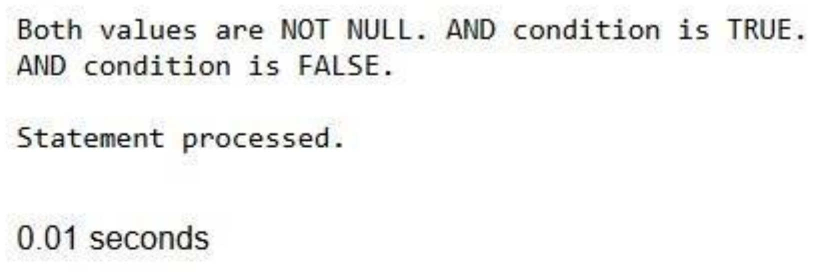


```
Salary updated for employee ID 122

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;
```

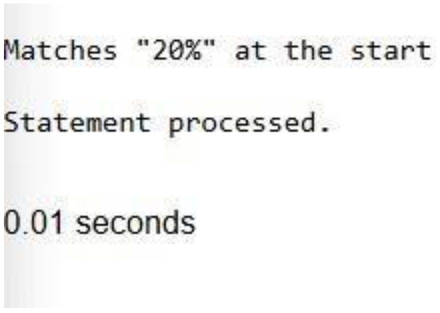


```
Both values are NOT NULL. AND condition is TRUE.
AND condition is FALSE.

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;
```

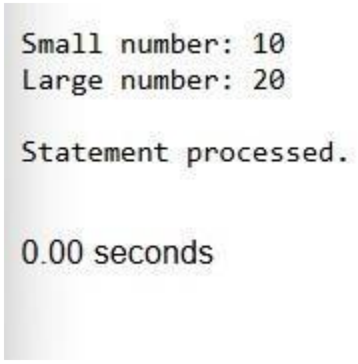


```
Matches "20%" at the start

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;
```

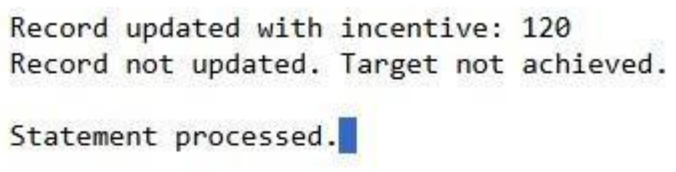


```
Small number: 10
Large number: 20

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;
```



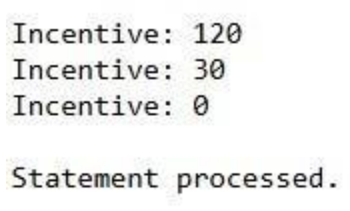
```
Record updated with incentive: 120
Record not updated. Target not achieved.

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;
```

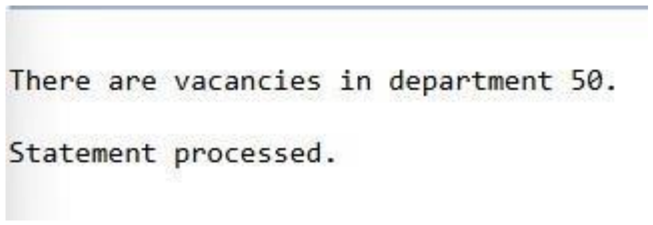


```
Incentive: 120
Incentive: 30
Incentive: 0

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;
```

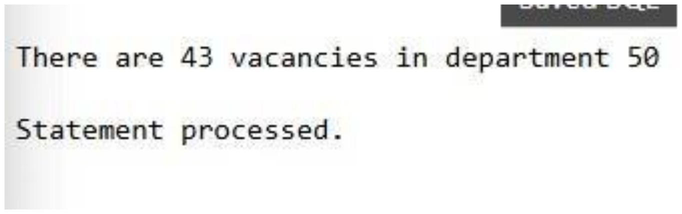


```
There are vacancies in department 50.

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;
```



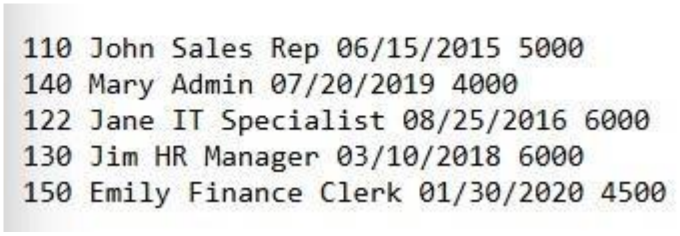
```
There are 43 vacancies in department 50

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;
```

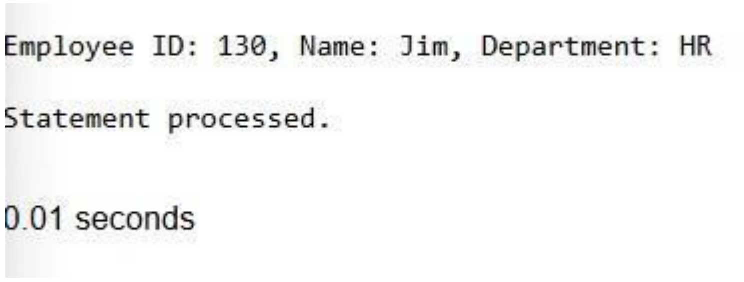


```
110 John Sales Rep 06/15/2015 5000
140 Mary Admin 07/20/2019 4000
122 Jane IT Specialist 08/25/2016 6000
130 Jim HR Manager 03/10/2018 6000
150 Emily Finance Clerk 01/30/2020 4500
```

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;
```

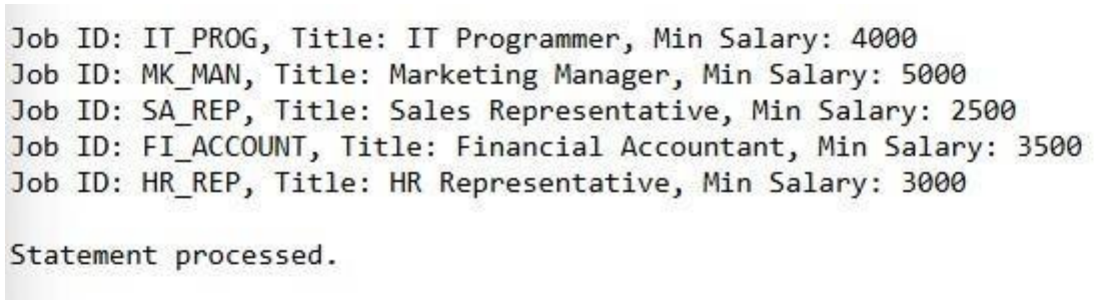


```
Employee ID: 130, Name: Jim, Department: HR

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;
```

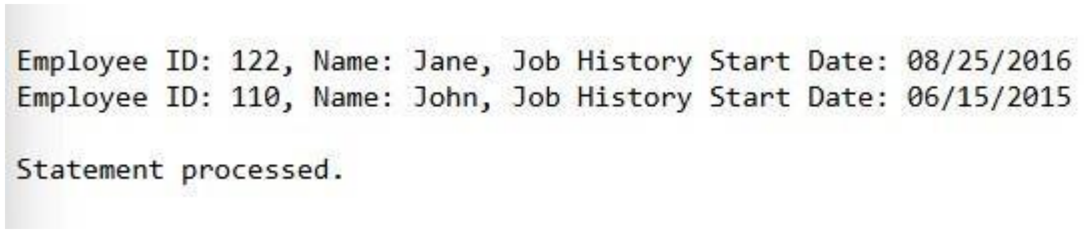


```
Job ID: IT_PROG, Title: IT Programmer, Min Salary: 4000
Job ID: MK_MAN, Title: Marketing Manager, Min Salary: 5000
Job ID: SA_REP, Title: Sales Representative, Min Salary: 2500
Job ID: FI_ACCOUNT, Title: Financial Accountant, Min Salary: 3500
Job ID: HR_REP, Title: HR Representative, Min Salary: 3000

Statement processed.
```

PROGRAM 14

Write a PL/SQL program to display the employee IDs, names, and job history start dates of all Employees.

```
BEGIN
   FOR emp IN (SELECT e.employee_id, e.first_name, j.start_date
            FROM employees e
            JOIN job_history j ON e.employee_id = j.employee_id)
   LOOP
      DBMS_OUTPUT.PUT_LINE('Employee ID: ' || emp.employee_id ||
                   ', Name: ' || emp.first_name ||
                   ', Job History Start Date: ' || emp.start_date);
   END LOOP;
END;
```

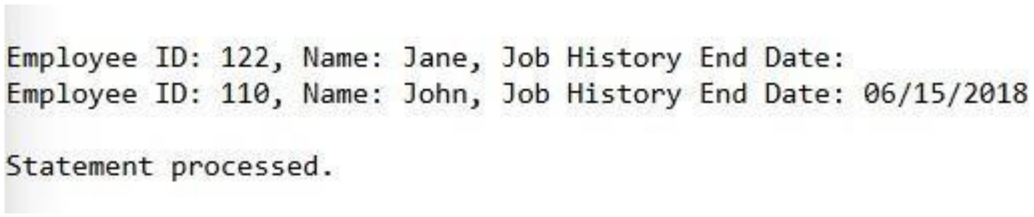


```
Employee ID: 122, Name: Jane, Job History Start Date: 08/25/2016
Employee ID: 110, Name: John, Job History Start Date: 06/15/2015

Statement processed.
```

PROGRAM 15

Write a PL/SQL program to display the employee IDs, names, and job history end dates of all Employees.

```
BEGIN
   FOR emp IN (SELECT e.employee_id, e.first_name, j.end_date
            FROM employees e
            JOIN job_history j ON e.employee_id = j.employee_id)
   LOOP
      DBMS_OUTPUT.PUT_LINE('Employee ID: ' || emp.employee_id ||
                     ', Name: ' || emp.first_name ||
                  ', 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.
```