

# PL/SQL : PART II

1. Write a PL/SQL block to retrieve the total number of employees in the emp table and display it.

```
1 CREATE TABLE EMP (  
2   name VARCHAR(20),  
3   salary NUMBER  
4 );  
5  
6 INSERT INTO EMP VALUES ('Neelakandan', 30500);  
7 INSERT INTO EMP VALUES ('Mannadiyar', 20500);  
8 INSERT INTO EMP VALUES ('Sheela', 41000);  
9  
10 COMMIT;  
11  
12 SELECT * FROM EMP;  
13  
14 DECLARE  
15   total_emp NUMBER;  
16  
17 BEGIN  
18   SELECT COUNT(*) INTO total_emp FROM EMP;  
19  
20   dbms_output.put_line('Total number of employees: ' || total_emp);  
21 END;
```

Output:

NAME	SALARY
Neelakandan	30500
Mannadiyar	20500
Sheela	41000

Total number of employees: 3

2. Create an explicit cursor to fetch and display the names and salaries of employees from the emp table.

```
1 CREATE TABLE EMP (  
2   name VARCHAR(20),  
3   salary NUMBER  
4 );  
5  
6 INSERT INTO EMP VALUES ('Neelakandan', 30500);  
7 INSERT INTO EMP VALUES ('Mannadiyar', 20500);  
8 INSERT INTO EMP VALUES ('Sheela', 41000);  
9  
10 COMMIT;  
11  
12 SELECT * FROM EMP;  
13  
14 DECLARE  
15   CURSOR EMP_CURSOR IS  
16     SELECT NAME, salary FROM EMP WHERE salary > 3000;  
17   v_name EMP.NAME%TYPE;  
18   v_salary EMP.salary%TYPE;  
19  
20 BEGIN  
21   OPEN EMP_CURSOR;  
22   LOOP  
23     FETCH EMP_CURSOR INTO v_name, v_salary;  
24     EXIT WHEN EMP_CURSOR%NOTFOUND;  
25     dbms_output.put_line(v_name || ':' || v_salary);  
26   END LOOP;  
27   CLOSE EMP_CURSOR;  
28 END;  
29 /
```

Output:

NAME	SALARY
Neelakandan	30500
Mannadiyar	20500
Sheela	41000

Neelakandan:30500  
Mannadiyar:20500  
Sheela:41000

3. Write a PL/SQL block using an explicit cursor to display the names of employees who earn more than 3000.

```
1 CREATE TABLE EMP (  
2   name VARCHAR(20),  
3   salary NUMBER  
4 );  
5  
6 INSERT INTO EMP VALUES ('Neelakandan', 1500);  
7 INSERT INTO EMP VALUES ('Mannadiyar', 7500);  
8 INSERT INTO EMP VALUES ('Sheela', 2990);  
9  
10 COMMIT;  
11  
12 SELECT * FROM EMP;  
13  
14 DECLARE  
15   CURSOR EMP_CURSOR IS  
16     SELECT NAME, salary FROM EMP WHERE salary > 3000;  
17   v_name EMP.NAME%TYPE;  
18   v_salary EMP.salary%TYPE;  
19  
20 BEGIN  
21   OPEN EMP_CURSOR;  
22   LOOP  
23     FETCH EMP_CURSOR INTO v_name, v_salary;  
24     EXIT WHEN EMP_CURSOR%NOTFOUND;  
25     dbms_output.put_line(v_name || ':' || v_salary);  
26   END LOOP;  
27   CLOSE EMP_CURSOR;  
28 END;
```

Output:

NAME	SALARY
Neelakandan	1500
Mannadiyar	7500
Sheela	2990

Mannadiyar:7500

4. Write a PL/SQL block to find the salary of an employee with a specific employee number (e.g., empno = 9999). If the employee is not found, handle the NO\_DATA\_FOUND exception.

```
1 CREATE table EMP(
2   id number,
3   name varchar(20),
4   salary number
5 );
6
7 insert into EMP values (1,'Neelakandan', 30500);
8 insert into EMP values (2,'Mannadiyar', 20500);
9 insert into EMP values (3,'Sheel', 41000);
10
11 COMMIT;
12
13 DECLARE
14   a_emp EMP.id%type := 9999;
15   a_salary EMP.salary%type;
16
17 BEGIN
18   select salary into a_salary from EMP where id = a_emp;
19   dbms_output.put_line('Salary of the employee with id ' || a_emp || ' is ' || a_salary);
20
21 EXCEPTION
22   when no_data_found then
23     dbms_output.put_line('Employee with ' || a_emp || ', Not Found');
24
25 end;
```

Output:  
Employee with 9999, Not Found

5. Write a PL/SQL block using an explicit cursor to calculate and display the total salary of all employees in the emp table.

```
1 CREATE table EMP(
2   id number,
3   name varchar(20),
4   salary number
5 );
6
7 insert into EMP values (1,'Neelakandan', 30500);
8 insert into EMP values (2,'Mannadiyar', 20500);
9 insert into EMP values (3,'Sheel', 41000);
10
11 COMMIT;
12
13 DECLARE
14   cursor emp_cursor is
15     select salary from EMP;
16   sum_salary number := 0;
17   a_salary EMP.salary%type;
18
19 BEGIN
20   open emp_cursor;
21   loop
22     fetch emp_cursor into a_salary;
23     exit when emp_cursor%notfound;
24     sum_salary := sum_salary + a_salary;
25   end loop;
26
27   close emp_cursor;
28   dbms_output.put_line('Sum of salaries = ' || sum_salary);
29
30 end;
```

Output:  
Sum of salaries = 92000

6. Write a PL/SQL block that raises a user-defined exception if an employee's salary is less than 2000. Assume the employee number is known (e.g., emp no = 1).

```
1 CREATE table EMP(
2   id number,
3   name varchar(20),
4   salary number
5 );
6
7 insert into EMP values (1,'Neelakandan', 30500);
8 insert into EMP values (2,'Mannadiyar', 20500);
9 insert into EMP values (3,'Sheel', 41000);
10
11 COMMIT;
12
13 DECLARE
14   salary_low exception;
15   a_emp number := 1;
16   a_salary EMP.salary%type;
17
18 BEGIN
19   select salary into a_salary from EMP where id = a_emp;
20
21   if a_salary < 2000 then
22     raise salary_low;
23   else
24     dbms_output.put_line('Salary of the employee id ' || a_emp || ' is ' || a_salary);
25   end if;
26
27 exception
28   when salary_low then
29     dbms_output.put_line('Salary is less than 2000');
30     dbms_output.put_line('Do some work and earn money for the id: ' || a_emp);
31   when no_data_found then
32     dbms_output.put_line('no_data_found of the id: ' || a_emp);
33
34   dbms_output.put_line('Sum of salaries = ' || a_salary);
35
36 end;
```

Output:  
Salary of the employee id 1 is 30500

7. Write a PL/SQL block to fetch and display all employee names using an explicit cursor.

<pre>1 CREATE table EMP( 2   id number, 3   name varchar(20), 4   salary number 5 ); 6 7 insert into EMP values (1,'Neelakandan', 30500); 8 insert into EMP values (2,'Mannadiyar', 20500); 9 insert into EMP values (3,'Sheel', 41000); 10 11 COMMIT; 12 13 DECLARE 14   CURSOR emp_cursor IS SELECT name FROM emp; 15   emp_name emp.name%TYPE; 16 BEGIN 17   OPEN emp_cursor; 18   LOOP 19     FETCH emp_cursor INTO emp_name; 20     EXIT WHEN emp_cursor%NOTFOUND; 21     DBMS_OUTPUT.PUT_LINE('Employee: '    emp_name); 22   END LOOP; 23   CLOSE emp_cursor; 24 END; 25</pre>	<p>Output:</p> <p>Employee: Neelakandan Employee: Mannadiyar Employee: Sheel</p>
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8. Write a PL/SQL block using an explicit cursor to display the employee names and salaries only if the salary is between 2500 and 4000.

<pre>1 CREATE table EMP( 2   id number, 3   name varchar(20), 4   salary number 5 ); 6 7 insert into EMP values (1,'Neelakandan', 30500); 8 insert into EMP values (2,'Mannadiyar', 20500); 9 insert into EMP values (3,'Sheel', 41000); 10 11 COMMIT; 12 13 DECLARE 14   CURSOR emp_cursor IS SELECT name, salary FROM emp WHERE salary BETWEEN 25000 AND 35000; 15   emp_name emp.name%TYPE; 16   emp_salary emp.salary%TYPE; 17 BEGIN 18   OPEN emp_cursor; 19   LOOP 20     FETCH emp_cursor INTO emp_name, emp_salary; 21     EXIT WHEN emp_cursor%NOTFOUND; 22     DBMS_OUTPUT.PUT_LINE('Name: '    emp_name    ', Salary: '    emp_salary); 23   END LOOP; 24   CLOSE emp_cursor; 25 END; 26 27</pre>	<p>Output:</p> <p>Name: Neelakandan, Salary: 30500</p>
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9. Write a PL/SQL block to fetch the salary of an employee based on a provided employee number (emp no). If the employee does not exist, handle the NO\_DATA\_FOUND exception and display an appropriate message

<pre>1 CREATE table EMP( 2   id number, 3   name varchar(20), 4   salary number 5 ); 6 7 insert into EMP values (1,'Neelakandan', 30500); 8 insert into EMP values (2,'Mannadiyar', 20500); 9 insert into EMP values (3,'Sheel', 41000); 10 11 COMMIT; 12 13 DECLARE 14   emp_salary emp.salary%TYPE; 15   emp_no NUMBER := 99; 16 BEGIN 17   SELECT salary INTO emp_salary FROM emp WHERE id = emp_no; 18   DBMS_OUTPUT.PUT_LINE('Salary: '    emp_salary); 19 EXCEPTION 20   WHEN NO_DATA_FOUND THEN 21     DBMS_OUTPUT.PUT_LINE('Employee not found.');</pre>	<p>Output:</p> <p>Employee not found.</p>
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10. Write a PL/SQL block to calculate the average salary of all employees in the emp table using an explicit cursor. Display the result.

```

1 CREATE table EMP(
2   id number,
3   name varchar(20),
4   salary number
5 );
6
7 insert into EMP values (1,'Neelakandan', 30500);
8 insert into EMP values (2,'Mannadiyar', 20500);
9 insert into EMP values (3,'Sheel', 41000);
10
11 COMMIT;
12
13 DECLARE
14   CURSOR emp_cursor IS SELECT salary FROM emp;
15   emp_salary emp.Salary%TYPE;
16   total_salary NUMBER := 0;
17   count_employees NUMBER := 0;
18   average_salary NUMBER;
19 BEGIN
20   OPEN emp_cursor;
21   LOOP
22     FETCH emp_cursor INTO emp_salary;
23     EXIT WHEN emp_cursor%NOTFOUND;
24     total_salary := total_salary + emp_salary;
25     count_employees := count_employees + 1;
26   END LOOP;
27   CLOSE emp_cursor;
28
29   IF count_employees > 0 THEN
30     average_salary := total_salary / count_employees;
31     DBMS_OUTPUT.PUT_LINE('Average Salary: ' || average_salary);
32   ELSE
33     DBMS_OUTPUT.PUT_LINE('No employees found.');
34   END IF;
35 END;
```

Output:

Average Salary: 30666.6666666666666666666666666666666666