- In PL/SQL (Procedural Language/Structured Query Language), a package is a database object that groups related functions, procedures, variables, and other PL/SQL constructs into a single, reusable unit.
- Packages are used to encapsulate and modularize code, making it easier to manage, maintain, and share code within a database.
- A package consists of two main parts:
- a **package specification** and
- a **package body**.

package pl/sql programme -1

Package Specification--- OVERVIEW

(--): commented code

```
  CREATE OR REPLACE PACKAGE my_package AS
   -- Public variables/constants
   pi CONSTANT NUMBER := 3.14159;
   g_counter NUMBER := 10;
   -- Public procedure
   declaration PROCEDURE
   squre_number(n integer);

   -- Public function declaration
   FUNCTION calculate_area(radius INNUMBER)
  RETURN NUMBER;

END my_package;
```

BODY of Package

Detail working

```
  CREATE OR REPLACE PACKAGE BODY my_package AS
   -- Implementation of the
   reset_counter procedure
   PROCEDURE squre_number( n
   integer) IS
   BEGIN
    g_counter := 0;
    dbms_output.put_line(n*n||' '||g_counter);
   dbms_output.put_line('procedure reset calling
   vai package'); END squre_number;

   -- Implementation of the calculate_area function
   FUNCTION calculate_area(radius IN NUMBER)
   RETURN NUMBER IS BEGIN
    RETURN pi * radius *
   radius; END
   calculate_area;

  END my_package;
```

Driver code---→ Execution

```
 set
 SERVEROUTP
 UT on
 DECLARE
  radius
 NUMBER := 5;
 BEGIN
  my_package.squre_number(8);
  DBMS_OUTPUT.PUT_LINE('Area: ' ||
 my_package.calculate_area(radius)); END;
```

package pl/sql programme -2

employee table

id	***name***	***salary***
1	John Doe	55100
2	Jane Smith	64100

```
3     Bob        6010
      Johnson    0
4     Vikas
      65100
8     jatin
           1350
      0
9     lakshaya    300
                  0
10    bhumi
      6000
12    null  null
7     rohit
           1250
      0
12    vikas null
12    23    23
12    23    23
13    23    23
```

Package Specification--- OVERVIEW

```
-- Create a package specification
CREATE OR REPLACE PACKAGE employee_pkg AS
 -- Public cursor declaration
-- CURSOR employee_cursor RETURN
SYS_REFCURSOR; CURSOR
employee_cursor IS
  SELECT * FROM employee;

 -- Public procedure to retrieve employee
information PROCEDURE
get_employee_info(employee_id IN
NUMBER); END employee_pkg;
```

BODY of Code

Detail working:

```
-- Create a package body
```

```
CREATE OR REPLACE PACKAGE BODY employee_pkg AS
 -- Implementation of the cursor
--  CURSOR employee_cursor IS
--   SELECT * FROM employee;

 -- Implementation of the procedure to retrieve employee
 information PROCEDURE
 get_employee_info(employee_id IN NUMBER) IS
 emp_record employee%ROWTYPE;
 BEGIN
  -- Open the
  cursor OPEN
  employee_cursor;


  -- Loop through the cursor to find the
  employee by ID LOOP
   FETCH employee_cursor INTO
   emp_record; EXIT WHEN
   employee_cursor%NOTFOUND
   ;

   -- Check if the current record matches the
   requested employee ID IF emp_record.id =
   employee_id THEN
   DBMS_OUTPUT.PUT_LINE('Employee ID: ' ||
   emp_record.id);
   DBMS_OUTPUT.PUT_LINE('Name: ' ||
   emp_record.name);
   DBMS_OUTPUT.PUT_LINE('Salary: ' ||
   emp_record.salary);


   EXI
   T;
   END
   IF;
  END LOOP;

  -- Close the cursor
CLOSE
employee_cursor;
END
get_employee_info;
END
employee_pkg;
```

DRIVER CODE

```
set
SERVEROUTP
UT on
DECLARE
 emp_id NUMBER := 12; -- Replace with the
desired employee ID BEGIN
 employee_pkg.get_employee_info
(emp_id); END;
```