Creating a package

```
CREATE OR REPLACE PACKAGE TEST_PACKAGE AS
    FUN CTION TEST_F UNCTION RETURN VARCHAR2;
    PRO CEDURE TEST_P ROC EDURE;
END TEST_P ACKAGE;
/
CREATE OR REPLACE PACKAGE BODY TEST_P ACKAGE AS
        FUN CTION TEST_F UNCTION RETURN VARCHAR2 AS
                V_TEST VARCHA R2(10);
                V_TEST2 VARCHA R2(10) NOT NULL :=
'test2';
        BEGIN
                V_TEST := 'test';
                RETURN V_TEST;
        END TEST_F UNC TION;
         PRO CEDURE TEST_P ROC EDURE IS
         BEGIN
                NULL;
        END TEST_P ROC EDURE;
END TEST_P ACKAGE;
/
```

A package consists of a **specification** and a **body**.

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Creating an object type

```
-- an abstract object
CREATE OR REPLACE TYPE RECTANGLE FORCE AS
      OBJECT (
              LENGTH NUMBER,
              WIDTH NUMBER,
            NOT INSTAN TIABLE NOT FINAL MEMBER
PROCEDURE DISPLAY,
            -- define a map or order function
for comparison
            NOT INSTAN TIABLE NOT FINAL MAP
MEMBER FUNCTION AREA
                            RETURN NUMBER
      ) NOT INSTAN TIABLE NOT FINAL;
/
CREATE OR REPLACE TYPE SQUARE UNDER RECTANGLE (
      CON STR UCTOR FUNCTION SQUARE (LENGTH
NUMBER, WIDTH NUMBER)
              RETURN SELF AS RESULT,
      OVE RRIDING FINAL MEMBER PROCEDURE DISPLAY,
      OVE RRIDING FINAL MAP MEMBER FUNCTION AREA
RETURN NUMBER,
      STATIC FUNCTION TEST RETURN VARCHAR2
) FINAL;
/
CREATE OR REPLACE TYPE BODY SQUARE AS
      CON STR UCTOR FUNCTION SQUARE (LENGTH
NUMBER, WIDTH NUMBER)
              RETURN SELF AS RESULT AS
      BEGIN
              SEL F.L ENGTH := LENGTH;
              SEL F.WIDTH := WIDTH;
              RETURN;
      END;
      OVE RRIDING FINAL MEMBER PROCEDURE DISPLAY
AS
      BEGIN
              DBM S_O UTP UT.P UT _LI NE( 'Sq -
uare: '
                                              -
      || SELF.L ENGTH);
      END;
      OVE RRIDING FINAL MAP MEMBER FUNCTION AREA
```

Creating an object type (cont)

```
>     RETURN NUMBER AS
  BEGIN
    RETURN LENGTH * LENGTH;
  END;
  STATIC FUNCTION TEST RETURN VARCHAR2 AS
  BEGIN
    -- SELF and instance attributes are not available
    -- in static functions
    RETURN 'test';
  END;
END;
/
```

SELF refers to the current instance of an object. It is an **implicit** parameter for methods - **IN** for functions and **IN OUT** for procedures. It may be omitted when used with **MEMBER** methods. Objects support only Oracle types - **no user defined types** are supported in attributes and methods.

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