```
SQL> cl scr

SQL> SET SERVEROUTPUT ON
SQL> SET VERIFY OFF
SQL> cl scr

SQL> DECLARE
  2  V_Empno      NUMBER := &EnterEmpno;
  3  V_EName      VARCHAR2(30);
  4  V_Job        VARCHAR2(30);
  5  V_Sal        NUMBER(7, 2);
  6  BEGIN
  7  SELECT
  8  Ename, Job, Sal
  9  INTO
 10  V_Ename, V_Job, V_Sal
 11  FROM EMP
 12  WHERE Empno = V_Empno;
 13  DBMS_OUTPUT.PUT_LINE('The Name : '||V_Ename);
 14  DBMS_OUTPUT.PUT_LINE('The job : '||V_Job);
 15  DBMS_OUTPUT.PUT_LINE('The Sal: '||V_Sal);
 16  END;
 17  /
Enter value for enterempno: 7839
The Name : KING
The job : PRESIDENT
The Sal: 5000

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> DECLARE
  2  V_Empno      NUMBER(4):=&EnterEmpno;
  3  V_EName      VARCHAR2(30);
  4  V_Sal        NUMBER(7,2);
  5  V_Comm       NUMBER(7,2);
  6  BEGIN
  7  SELECT
  8  EName, Sal, Comm
  9  INTO V_EName, V_Sal, V_Comm
 10  FROM EMP
 11  WHERE Empno = V_Empno;
 12  DBMS_OUTPUT.PUT_LINE('The Name : '||INITCAP(V_Ename));
 13  DBMS_OUTPUT.PUT_LINE('The Salary : '||TO_CHAR(V_Sal, '99,999.99'));
 14  DBMS_OUTPUT.PUT_LINE('The Commission : '||NVL(TO_CHAR(V_Comm), 'No
Commission'));
 15  DBMS_OUTPUT.PUT_LINE('The Total Sal is : '||TO_CHAR(V_Sal + NVL(V_Comm,
0)));
 16  END;
 17  /
Enter value for enterempno: 7654
The Name : Martin
The Salary :   1,250.00
The Commission : 1400
```

The Total Sal is : 2650

PL/SQL procedure successfully completed.

SQL> cl scr

```
SQL> DECLARE
  2   V_Empno              NUMBER(4)    :=      &EnterEmpNo;
  3   V_Ename              VARCHAR2(30);
  4   V_Deptno     NUMBER(2);
  5   V_Job        VARCHAR2(30);
  6   V_MGR        NUMBER(4);
  7   V_HireDate   DATE;
  8   V_Sal        NUMBER(7,2);
  9   V_Comm       NUMBER(7,2);
 10   BEGIN
 11    SELECT
 12    Ename, Deptno, Job, MGR, HireDate, Sal, Comm
 13    INTO
 14    V_Ename, V_Deptno, V_Job, V_MGR, V_HireDate, V_Sal, V_Comm
 15    FROM Emp
 16    WHERE Empno = V_Empno;
 17   DBMS_OUTPUT.PUT_LINE('The Details of Employee Number '||V_Empno||'
Requested by You Are ...');
 18   DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||V_Ename);
 19   DBMS_OUTPUT.PUT_LINE('The Department Number : '||V_Deptno);
 20   DBMS_OUTPUT.PUT_LINE('The Designation : '||V_Job);
 21   DBMS_OUTPUT.PUT_LINE('The Manager Number :  '||V_MGR);
 22   DBMS_OUTPUT.PUT_LINE('The Joining Date : '||V_HireDate);
 23   DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||V_Sal);
 24   DBMS_OUTPUT.PUT_LINE('The Commission Earned : '||V_Comm);
 25   END;
 26   /
Enter value for enterempno: 7654
The Details of Employee Number 7654 Requested by You Are ...
The Employee Name :  MARTIN
The Department Number : 30
The Designation : SALESMAN
The Manager Number :  7698
The Joining Date : 28-SEP-81
The Basic Salary : 1250
The Commission Earned : 1400
```

PL/SQL procedure successfully completed.

```
SQL> /
Enter value for enterempno: 7839
The Details of Employee Number 7839 Requested by You Are ...
The Employee Name :  KING
The Department Number : 10
The Designation : PRESIDENT
The Manager Number :
The Joining Date : 17-NOV-81
The Basic Salary : 5000
The Commission Earned :
```

```
PL/SQL procedure successfully completed.

SQL> DECLARE
  2  V_Empno          NUMBER(4) := &EnterEmpNo;
  3  V_Ename          VARCHAR2(30);
  4  V_Deptno    NUMBER(2);
  5  V_Job       VARCHAR2(30);
  6  V_MGR       NUMBER(4);
  7  V_HireDate  DATE;
  8  V_Sal       NUMBER(7,2);
  9  V_Comm      NUMBER(7,2);
 10  V_MGRName   VARCHAR2(30);
 11  BEGIN
 12  SELECT
 13  Ename, Deptno, Job, MGR, HireDate, Sal, Comm
 14  INTO
 15  V_Ename , V_Deptno, V_Job, V_MGR, V_HireDate, V_Sal, V_Comm
 16  FROM Emp
 17  WHERE Empno = V_Empno;
 18  IF V_MGR IS NOT NULL THEN
 19   SELECT Ename INTO V_MGRName
 20   FROM Emp
 21   WHERE Empno = V_MGR;
 22  ELSE
 23   SELECT Ename INTO V_MGRName
 24   FROM Emp
 25   WHERE MGR IS NULL;
 26  END IF;
 27  DBMS_OUTPUT.PUT_LINE('The Details of Employee Number '||V_Empno||'
Requested by You Are ...');
 28  DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||INITCAP(V_Ename));
 29  DBMS_OUTPUT.PUT_LINE('The Department Number : '||V_Deptno);
 30  DBMS_OUTPUT.PUT_LINE('The Designation : '||INITCAP(V_Job));
 31  DBMS_OUTPUT.PUT_LINE('The Manager Number :  '||NVL(TO_CHAR(V_MGR),'"Cannot
be Managed"')||', and his Name is : '||V_MGRName);
 32  DBMS_OUTPUT.PUT_LINE('The Joining Date : '||TO_CHAR(V_HireDate,'FMDD, Month
Year'));
 33  DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||CONCAT('INR
',TO_CHAR(V_Sal,'99,999.99')));
 34  DBMS_OUTPUT.PUT_LINE('The Commission Earned : '||NVL(TO_CHAR(V_Comm),'No
Commission...Sorry!'));
 35  END;
 36  /
Enter value for enterempno: 7654
The Details of Employee Number 7654 Requested by You Are ...
The Employee Name :  Martin
The Department Number : 30
The Designation : Salesman
The Manager Number :  7698, and his Name is : BLAKE
The Joining Date : 28, September Nineteen Eighty-One
The Basic Salary : INR   1,250.00
The Commission Earned : 1400

PL/SQL procedure successfully completed.
```

```
SQL> /
Enter value for enterempno: 7839
The Details of Employee Number 7839 Requested by You Are ...
The Employee Name :  King
The Department Number : 10
The Designation : President
The Manager Number :  "Cannot be Managed", and his Name is : KING
The Joining Date : 17, November Nineteen Eighty-One
The Basic Salary : INR   5,000.00
The Commission Earned : No Commission...Sorry!

PL/SQL procedure successfully completed.

SQL> DECLARE
  2  V_Empno            NUMBER(4) := &EnterEmpNo;
  3  V_Ename            VARCHAR2(30);
  4  V_Deptno      NUMBER(2);
  5  V_Job         VARCHAR2(30);
  6  V_MGR         NUMBER(4);
  7  V_HireDate    DATE;
  8  V_Sal         NUMBER(7, 2);
  9  V_Comm        NUMBER(7, 2);
 10  V_MGRName     VARCHAR2(30);
 11  V_OrgMaxSal NUMBER(7, 2);
 12  V_OrgMinSal  NUMBER(7, 2);
 13  V_OrgAvgSal  NUMBER(7, 2);
 14  V_DeptAvgSal NUMBER(7, 2);
 15  BEGIN
 16  SELECT
 17  Ename, Deptno, Job, MGR, HireDate, Sal, Comm
 18  INTO
 19  V_Ename , V_Deptno, V_Job, V_MGR, V_HireDate, V_Sal, V_Comm
 20  FROM Emp
 21  WHERE Empno = V_Empno;
 22  IF V_MGR IS NOT NULL THEN
 23   SELECT Ename INTO V_MGRName
 24   FROM Emp
 25   WHERE Empno = V_MGR;
 26  ELSE
 27   SELECT Ename INTO V_MGRName
 28   FROM Emp
 29   WHERE MGR IS NULL;
 30  END IF;
 31  SELECT MAX(Sal), MIN(Sal), AVG(Sal) INTO V_OrgMaxSal, V_OrgMinSal,
V_OrgAvgSal
 32  FROM Emp;
 33  SELECT AVG(Sal) INTO  V_DeptAvgSal
 34  FROM Emp
 35  WHERE Deptno = V_Deptno;
 36  DBMS_OUTPUT.PUT_LINE('The Details of Employee Number '||V_Empno||'
Requested by You Are ...');
 37  DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||INITCAP(V_Ename));
 38  DBMS_OUTPUT.PUT_LINE('The Department Number : '||V_Deptno);
 39  DBMS_OUTPUT.PUT_LINE('The Designation : '||INITCAP(V_Job));
```

```
 40   DBMS_OUTPUT.PUT_LINE('The Manager Number :  '||NVL(TO_CHAR(V_MGR),'"Cannot
be Managed"')||', and his Name is : '||V_MGRName);
 41   DBMS_OUTPUT.PUT_LINE('The Joining Date : '||TO_CHAR(V_HireDate,'FMDD, Month
Year'));
 42   DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||CONCAT('INR
',TO_CHAR(V_Sal,'99,999.99')));
 43   DBMS_OUTPUT.PUT_LINE('The Commission Earned : '||NVL(TO_CHAR(V_Comm),'No
Commission...Sorry!'));
 44   DBMS_OUTPUT.PUT_LINE('Displaying The Summaries...');
 45   DBMS_OUTPUT.PUT_LINE('The Organization Maximum Salary is : '||V_OrgMaxSal);
 46   DBMS_OUTPUT.PUT_LINE('The Organization Minimum Salary is : '||V_OrgMinSal);
 47   DBMS_OUTPUT.PUT_LINE('The Organization Average Salary is : '||V_OrgAvgSal);
 48   DBMS_OUTPUT.PUT_LINE('The Department Average Salary is : '||V_DeptAvgSal);
 49   END;
 50   /
Enter value for enterempno: 7654
The Details of Employee Number 7654 Requested by You Are ...
The Employee Name :  Martin
The Department Number : 30
The Designation : Salesman
The Manager Number :  7698, and his Name is : BLAKE
The Joining Date : 28, September Nineteen Eighty-One
The Basic Salary : INR   1,250.00
The Commission Earned : 1400
Displaying The Summaries...
The Organization Maximum Salary is : 5000
The Organization Minimum Salary is : 800
The Organization Average Salary is : 2073.21
The Department Average Salary is : 1566.67

PL/SQL procedure successfully completed.

SQL> SPOOL OFF
SQL> cl scr

SQL> DECLARE
  2   V_Empno      Emp.Empno%TYPE := &EnterEmpno;
  3   V_EName      Emp.EName%TYPE;
  4   V_job        Emp.Job%TYPE;
  5   V_Sal        Emp.Sal%TYPE;
  6   BEGIN
  7   SELECT
  8   Ename, Job, Sal
  9   INTO
 10   V_Ename, V_job, V_Sal
 11   FROM EMP
 12   WHERE Empno = V_Empno;
 13   DBMS_OUTPUT.PUT_LINE('The Name : '||V_Ename);
 14   DBMS_OUTPUT.PUT_LINE('The job : '||V_Job);
 15   DBMS_OUTPUT.PUT_LINE('The Sal: '||V_Sal);
 16   END;
 17   /
Enter value for enterempno: 7839
The Name : KING
The job : PRESIDENT
```

```
The Sal: 5000

PL/SQL procedure successfully completed.

SQL> /
Enter value for enterempno: 7654
The Name : MARTIN
The job : SALESMAN
The Sal: 1250

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> DECLARE
  2   V_Empno            Emp.Empno%TYPE := &EnterEmpNo;
  3   V_Ename            Emp.Ename%TYPE;
  4   V_Deptno       Emp.Deptno%TYPE;
  5   V_Job          Emp.Job%TYPE;
  6   V_MGR          Emp.MGR%TYPE;
  7   V_HireDate     Emp.HireDate%TYPE;
  8   V_Sal          Emp.Sal%TYPE;
  9   V_Comm         Emp.Comm%TYPE;
 10   V_MGRName      Emp.Ename%TYPE;
 11   BEGIN
 12   SELECT Ename, Deptno, Job, MGR, HireDate, Sal, Comm INTO V_Ename , V_Deptno,
V_Job, V_MGR, V_HireDate, V_Sal, V_Comm
 13   FROM Emp
 14   WHERE Empno = V_Empno;
 15   IF V_MGR IS NOT NULL THEN
 16   SELECT Ename INTO V_MGRName
 17   FROM Emp
 18   WHERE Empno = V_MGR;
 19   ELSE
 20   SELECT Ename INTO V_MGRName
 21   FROM Emp
 22   WHERE MGR IS NULL;
 23   END IF;
 24   DBMS_OUTPUT.PUT_LINE('The Details of Employee Number  '||V_Empno||'
Requested by You Are ...');
 25   DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||INITCAP(V_Ename));
 26   DBMS_OUTPUT.PUT_LINE('The Department Number : '||V_Deptno);
 27   DBMS_OUTPUT.PUT_LINE('The Designation : '||INITCAP(V_Job));
 28   DBMS_OUTPUT.PUT_LINE('The Manager Number :  '||NVL(TO_CHAR(V_MGR),'"Cannot
be Managed"')||' , and his Name is : '||V_MGRName);
 29   DBMS_OUTPUT.PUT_LINE('The Joining Date : '||TO_CHAR(V_HireDate,'FMDD, Month
Year'));
 30   DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||CONCAT('INR
',TO_CHAR(V_Sal,'99,999.99')));
 31   DBMS_OUTPUT.PUT_LINE('The Commission Earned : '||NVL(TO_CHAR(V_Comm),'No
Commission...Sorry!'));
 32   END;
 33   /
Enter value for enterempno: 7839
The Details of Employee Number  7839 Requested by You Are ...
```

```
The Employee Name :  King
The Department Number : 10
The Designation : President
The Manager Number :  "Cannot be Managed" , and his Name is : KING
The Joining Date : 17, November Nineteen Eighty-One
The Basic Salary : INR   5,000.00
The Commission Earned : No Commission...Sorry!

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> DECLARE
  2  V_Empno               Emp.Empno%TYPE := &EnterEmpNo;
  3  V_Ename               Emp.Ename%TYPE;
  4  V_Deptno         Emp.Deptno%TYPE;
  5  V_Job            Emp.Job%TYPE;
  6  V_MGR            Emp.MGR%TYPE;
  7  V_HireDate       Emp.HireDate%TYPE;
  8  V_Sal            Emp.Sal%TYPE;
  9  V_Comm           Emp.Comm%TYPE;
 10  V_MGRName        Emp.Ename%TYPE;
 11  V_OrgMaxSal      Emp.Sal%TYPE;
 12  V_OrgMinSal      Emp.Sal%TYPE;
 13  V_OrgAvgSal      Emp.Sal%TYPE;
 14  V_DeptAvgSal Emp.Sal%TYPE;
 15  BEGIN
 16  SELECT
 17  Ename, Deptno, Job, MGR, HireDate, Sal, Comm
 18  INTO
 19  V_Ename , V_Deptno, V_Job, V_MGR, V_HireDate, V_Sal, V_Comm
 20  FROM Emp
 21  WHERE Empno = V_Empno;
 22  IF V_MGR IS NOT NULL THEN
 23   SELECT Ename INTO V_MGRName
 24   FROM Emp
 25   WHERE Empno = V_MGR;
 26  ELSE
 27   SELECT Ename INTO V_MGRName
 28   FROM Emp
 29   WHERE MGR IS NULL;
 30  END IF;
 31  SELECT MAX(Sal), MIN(Sal), AVG(Sal) INTO V_OrgMaxSal, V_OrgMinSal,
V_OrgAvgSal
 32  FROM Emp;
 33  SELECT AVG(Sal) INTO  V_DeptAvgSal
 34  FROM Emp
 35  WHERE Deptno = V_Deptno;
 36  DBMS_OUTPUT.PUT_LINE('The Details of Employee Number '||V_Empno||'
Requested by You Are ...');
 37  DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||INITCAP(V_Ename));
 38  DBMS_OUTPUT.PUT_LINE('The Department Number : '||V_Deptno);
 39  DBMS_OUTPUT.PUT_LINE('The Designation : '||INITCAP(V_Job));
 40  DBMS_OUTPUT.PUT_LINE('The Manager Number :  '||NVL(TO_CHAR(V_MGR),'"Cannot
be Managed"')||', and his Name is : '||V_MGRName);
```

```
 41  DBMS_OUTPUT.PUT_LINE('The Joining Date : '||TO_CHAR(V_HireDate,'FMDD, Month
Year'));
 42  DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||CONCAT('INR
',TO_CHAR(V_Sal,'99,999.99')));
 43  DBMS_OUTPUT.PUT_LINE('The Commission Earned : '||NVL(TO_CHAR(V_Comm),'No
Commission...Sorry!'));
 44  DBMS_OUTPUT.PUT_LINE('Displaying The Summaries...');
 45  DBMS_OUTPUT.PUT_LINE('The Organization Maximum Salary is : '||V_OrgMaxSal);
 46  DBMS_OUTPUT.PUT_LINE('The Organization Minimum Salary is : '||V_OrgMinSal);
 47  DBMS_OUTPUT.PUT_LINE('The Organization Average Salary is : '||V_OrgAvgSal);
 48  DBMS_OUTPUT.PUT_LINE('The Department Average Salary is : '||V_DeptAvgSal);
 49  END;
 50  /
Enter value for enterempno: 7654
The Details of Employee Number 7654 Requested by You Are ...
The Employee Name :  Martin
The Department Number : 30
The Designation : Salesman
The Manager Number :  7698, and his Name is : BLAKE
The Joining Date : 28, September Nineteen Eighty-One
The Basic Salary : INR   1,250.00
The Commission Earned : 1400
Displaying The Summaries...
The Organization Maximum Salary is : 5000
The Organization Minimum Salary is : 800
The Organization Average Salary is : 2073.21
The Department Average Salary is : 1566.67

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> DECLARE
  2  V_EmpRecord Emp%ROWTYPE;
  3  BEGIN
  4  SELECT  * INTO V_EmpRecord
  5  FROM EMP
  6  WHERE Empno = &EnterEmpno;
  7  DBMS_OUTPUT.PUT_LINE('The Name : '|| V_EmpRecord.Ename);
  8  DBMS_OUTPUT.PUT_LINE('The Job : '|| V_EmpRecord.Job);
  9  DBMS_OUTPUT.PUT_LINE('The Salary : '||V_EmpRecord.Sal);
 10  DBMS_OUTPUT.PUT_LINE('The Commission : '|| V_EmpRecord.Comm);
 11  DBMS_OUTPUT.PUT_LINE('The Gross Salary : ' ||(V_EmpRecord.Sal +
NVL(V_EmpRecord.Comm, 0)));
 12  END;
 13  /
Enter value for enterempno: 7839
The Name : KING
The Job : PRESIDENT
The Salary : 5000
The Commission :
The Gross Salary : 5000

PL/SQL procedure successfully completed.
```

```
SQL> ED
Wrote file afiedt.buf

  1   DECLARE
  2   V_EmpRecord Emp%ROWTYPE;
  3   BEGIN
  4   SELECT  Empno, Ename, Job, Sal, Comm
  5   INTO
  6   V_EmpRecord.Empno,
  7   V_EmpRecord.Ename,
  8   V_EmpRecord.Job,
  9   V_EmpRecord.Sal,
 10   V_EmpRecord.Comm
 11   FROM EMP
 12   WHERE Empno = &EnterEmpno;
 13   DBMS_OUTPUT.PUT_LINE('The Name : '|| V_EmpRecord.Ename);
 14   DBMS_OUTPUT.PUT_LINE('The Job : '|| V_EmpRecord.Job);
 15   DBMS_OUTPUT.PUT_LINE('The Salary : '||V_EmpRecord.Sal);
 16   DBMS_OUTPUT.PUT_LINE('The Commission : '|| V_EmpRecord.Comm);
 17   DBMS_OUTPUT.PUT_LINE('The Gross Salary : ' ||(V_EmpRecord.Sal +
NVL(V_EmpRecord.Comm, 0)));
 18* END;
SQL> /
Enter value for enterempno: 7839
The Name : KING
The Job : PRESIDENT
The Salary : 5000
The Commission :
The Gross Salary : 5000

PL/SQL procedure successfully completed.

SQL> DECLARE
  2   EmpRecord Emp%ROWTYPE;
  3   V_EmpRecord EmpRecord%TYPE;  --Sub Type Creation Out of EmpRecord Type
  4   BEGIN
  5   SELECT  * INTO V_EmpRecord
  6   FROM EMP
  7   WHERE Empno = &EnterEmpno;
  8   DBMS_OUTPUT.PUT_LINE('The Name : '|| V_EmpRecord.Ename);
  9   DBMS_OUTPUT.PUT_LINE('The Job : '|| V_EmpRecord.Job);
 10   DBMS_OUTPUT.PUT_LINE('The Salary : '||V_EmpRecord.Sal);
 11   DBMS_OUTPUT.PUT_LINE('The Commission : '|| V_EmpRecord.Comm);
 12   DBMS_OUTPUT.PUT_LINE('The Gross Salary : ' ||(V_EmpRecord.Sal +
NVL(V_EmpRecord.Comm, 0)));
 13   END;
 14   /
Enter value for enterempno: 7839
The Name : KING
The Job : PRESIDENT
The Salary : 5000
The Commission :
The Gross Salary : 5000

PL/SQL procedure successfully completed.
```

```
SQL> DECLARE
  2  V_Num1 NUMBER(2) := &GNum1;
  3  BEGIN
  4  DBMS_OUTPUT.PUT_LINE('The V_Num1 : '||V_Num1);
  5   DECLARE
  6   V_Num2 NUMBER(2) := V_Num1;
  7   BEGIN
  8   DBMS_OUTPUT.PUT_LINE('The V_Num2 : '||V_Num21);
  9   END;
 10  END;
 11  /
Enter value for gnum1: 25
      DBMS_OUTPUT.PUT_LINE('The V_Num2 : '||V_Num21);
                                            *
ERROR at line 8:
ORA-06550: line 8, column 40:
PLS-00201: identifier 'V_NUM21' must be declared
ORA-06550: line 8, column 2:
PL/SQL: Statement ignored


SQL> ED
Wrote file afiedt.buf

  1  DECLARE
  2  V_Num1 NUMBER(2) := &GNum1;
  3  BEGIN
  4  DBMS_OUTPUT.PUT_LINE('The V_Num1 : '||V_Num1);
  5   DECLARE
  6   V_Num2 NUMBER(2) := V_Num1;
  7   BEGIN
  8   DBMS_OUTPUT.PUT_LINE('The V_Num2 : '||V_Num2);
  9   END;
 10* END;
SQL> /
Enter value for gnum1: 25
The V_Num1 : 25
The V_Num2 : 25

PL/SQL procedure successfully completed.

SQL> ED
Wrote file afiedt.buf

  1  DECLARE
  2  V_Num1 NUMBER(3) := &GNum1;
  3  BEGIN
  4  DBMS_OUTPUT.PUT_LINE('The V_Num1 : '||V_Num1);
  5   DECLARE
  6   V_Num2 NUMBER(2) := V_Num1;
  7   BEGIN
  8   DBMS_OUTPUT.PUT_LINE('The V_Num2 : '||V_Num2);
  9   END;
 10* END;
```

```
SQL> /
Enter value for gnum1: 125
The V_Num1 : 125
DECLARE
*
ERROR at line 1:
ORA-06502: PL/SQL: numeric or value error: number precision too large
ORA-06512: at line 6


SQL> ED
Wrote file afiedt.buf

   1   DECLARE
   2   V_Num1 NUMBER(2) := &GNum1;
   3   BEGIN
   4   DBMS_OUTPUT.PUT_LINE('The V_Num1 : '||V_Num1);
   5    DECLARE
   6    V_Num2 V_Num1%TYPE := V_Num1;
   7    BEGIN
   8    DBMS_OUTPUT.PUT_LINE('The V_Num2 : '||V_Num2);
   9    END;
 10* END;
SQL> /
Enter value for gnum1: 25
The V_Num1 : 25
The V_Num2 : 25

PL/SQL procedure successfully completed.

SQL> /
Enter value for gnum1: 12
The V_Num1 : 12
The V_Num2 : 12

PL/SQL procedure successfully completed.

SQL> ED
Wrote file afiedt.buf

   1   DECLARE
   2   V_Num1 NUMBER(3) := &GNum1;
   3   BEGIN
   4   DBMS_OUTPUT.PUT_LINE('The V_Num1 : '||V_Num1);
   5    DECLARE
   6    V_Num2 V_Num1%TYPE := V_Num1;
   7    BEGIN
   8    DBMS_OUTPUT.PUT_LINE('The V_Num2 : '||V_Num2);
   9    END;
 10* END;
SQL> /
Enter value for gnum1: 125
The V_Num1 : 125
The V_Num2 : 125
```

```
PL/SQL procedure successfully completed.

SQL> cl scr

SQL> DECLARE
  2  V_Empno Emp.Empno%TYPE := &EnterEmpNo;
  3  V_EmpRecord Emp%ROWTYPE;
  4  V_MGRName Emp.Ename%TYPE;
  5  BEGIN
  6  SELECT
  7  Empno, Ename, Job, Sal, MGR
  8  INTO
  9  V_EmpRecord.Empno,
 10  V_EmpRecord.Ename,
 11  V_EmpRecord.Job,
 12  V_EmpRecord.Sal,
 13  V_EmpRecord.MGR
 14  FROM Emp
 15  WHERE Empno = V_Empno;
 16  IF V_EmpRecord.MGR IS NOT NULL THEN
 17  SELECT Ename INTO V_MGRName
 18  FROM Emp
 19  WHERE Empno = V_EmpRecord.MGR;
 20  ELSE
 21  SELECT Ename INTO V_MGRName
 22  FROM Emp
 23  WHERE MGR IS NULL;
 24  END IF;
 25  DBMS_OUTPUT.PUT_LINE('The Details of Employee Number
'||V_EmpRecord.Empno||' Requested by You Are ...');
 26  DBMS_OUTPUT.PUT_LINE('The Employee Name : '||INITCAP(V_EmpRecord.Ename));
 27  DBMS_OUTPUT.PUT_LINE('The Manager Number :
'||NVL(TO_CHAR(V_EmpRecord.MGR),'"Cannot be Managed"')||' , and his Name is :
'||V_MGRName);
 28  DBMS_OUTPUT.PUT_LINE('The Designation : '||INITCAP(V_EmpRecord.Job));
 29  DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||CONCAT('INR
',TO_CHAR(V_EmpRecord.Sal,'99,999.99')));
 30  END;
 31  /
Enter value for enterempno: 7654
The Details of Employee Number 7654 Requested by You Are ...
The Employee Name : Martin
The Manager Number :  7698 , and his Name is : BLAKE
The Designation : Salesman
The Basic Salary : INR  1,250.00

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> DECLARE
  2  V_Empno NUMBER(4) := &EnterEmpNo;
  3  TYPE EmpRecordType IS RECORD
  4  (
  5  V_Ename          VARCHAR2(30),
```

```
    6   V_Deptno      NUMBER(2),
    7   V_Job         VARCHAR2(30)
    8   );
    9   EmpRecord EmpRecordType;
   10   BEGIN
   11   SELECT Ename, Deptno, Job
   12   INTO
   13   EmpRecord.V_Ename , EmpRecord.V_Deptno, EmpRecord.V_Job
   14   FROM Emp
   15   WHERE Empno = V_Empno;
   16   DBMS_OUTPUT.PUT_LINE('The Details of Employee Number '||V_Empno||'
Requested by You Are ...');
   17   DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||EmpRecord.V_Ename);
   18   DBMS_OUTPUT.PUT_LINE('The Department Number : '||EmpRecord.V_Deptno);
   19   DBMS_OUTPUT.PUT_LINE('The Designation : '||EmpRecord.V_Job);
   20   END;
   21   /
Enter value for enterempno: 7654
The Details of Employee Number 7654 Requested by You Are ...
The Employee Name :  MARTIN
The Department Number : 30
The Designation : SALESMAN

PL/SQL procedure successfully completed.

SQL> ED
Wrote file afiedt.buf

    1   DECLARE
    2   V_Empno NUMBER(4) := &EnterEmpNo;
    3   V_Ename            VARCHAR2(30);
    4   V_Deptno      NUMBER(2);
    5   V_Job         VARCHAR2(30);
    6   BEGIN
    7   SELECT Ename, Deptno, Job
    8   INTO
    9   V_Ename , V_Deptno, V_Job
   10   FROM Emp
   11   WHERE Empno = V_Empno;
   12   DBMS_OUTPUT.PUT_LINE('The Details of Employee Number '||V_Empno||'
Requested by You Are ...');
   13   DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||V_Ename);
   14   DBMS_OUTPUT.PUT_LINE('The Department Number : '||V_Deptno);
   15   DBMS_OUTPUT.PUT_LINE('The Designation : '||V_Job);
   16*  END;
SQL> /
Enter value for enterempno: 7654
The Details of Employee Number 7654 Requested by You Are ...
The Employee Name :  MARTIN
The Department Number : 30
The Designation : SALESMAN

PL/SQL procedure successfully completed.

SQL> cl scr
```

```
SQL> DECLARE
  2  V_Empno NUMBER(4) := &EnterEmpNo;
  3  TYPE EmpRecordType IS RECORD
  4  (
  5   Ename VARCHAR2(30),
  6   Deptno      NUMBER(2),
  7   Job         VARCHAR2(30),
  8   MGR         NUMBER(4),
  9   HireDate    DATE,
 10   Sal         NUMBER(7,2),
 11   Comm  NUMBER(7,2)
 12  );
 13  EmpRecord EmpRecordType;
 14  BEGIN
 15  SELECT Ename, Deptno, Job, MGR, HireDate, Sal, Comm
 16  INTO
 17  EmpRecord.Ename , EmpRecord.Deptno, EmpRecord.Job, EmpRecord.MGR,
EmpRecord.HireDate, EmpRecord.Sal, EmpRecord.Comm
 18  FROM Emp
 19  WHERE Empno = V_Empno;
 20  DBMS_OUTPUT.PUT_LINE('The Details of Employee Number '||V_Empno||'
Requested by You Are ...');
 21  DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||EmpRecord.Ename);
 22  DBMS_OUTPUT.PUT_LINE('The Department Number : '||EmpRecord.Deptno);
 23  DBMS_OUTPUT.PUT_LINE('The Designation : '||EmpRecord.Job);
 24  DBMS_OUTPUT.PUT_LINE('The Manager Number :  '||EmpRecord.MGR);
 25  DBMS_OUTPUT.PUT_LINE('The Joining Date : '||EmpRecord.HireDate);
 26  DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||EmpRecord.Sal);
 27  DBMS_OUTPUT.PUT_LINE('The Commission Earned : '||EmpRecord.Comm);
 28  END;
 29  /
Enter value for enterempno: 7654
The Details of Employee Number 7654 Requested by You Are ...
The Employee Name :  MARTIN
The Department Number : 30
The Designation : SALESMAN
The Manager Number :  7698
The Joining Date : 28-SEP-81
The Basic Salary : 1250
The Commission Earned : 1400

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> DECLARE
  2  TYPE AtomicTypes IS RECORD /*Atomic Type Creation*/
  3  (
  4   Empno Emp.Empno%TYPE,
  5   MgrName Emp.Ename%TYPE
  6  );
  7  TYPE AllTablesRecord IS RECORD /*Nested Type Creation*/
  8  (
  9   EmpRecord Emp%ROWTYPE,
```

```
10   DeptRecord Dept%ROWTYPE,
11   SalGradeRecord SalGrade%ROWTYPE,
12   AtomicType  AtomicTypes /*Type Instance in Another Type*/
13   );
14   V_AllTablesRecord AllTablesRecord; /*Type Instantiation*/
15   BEGIN
16   V_AllTablesRecord.AtomicType.Empno := &EnterEmpno;
17   SELECT Ename, Deptno, Job, MGR, HireDate, Sal, Comm
18   INTO
19   V_AllTablesRecord.Emprecord.Ename ,
20   V_AllTablesRecord.Emprecord.Deptno,
21   V_AllTablesRecord.Emprecord.Job,
22   V_AllTablesRecord.Emprecord.MGR,
23   V_AllTablesRecord.Emprecord.HireDate,
24   V_AllTablesRecord.Emprecord.Sal,
25   V_AllTablesRecord.Emprecord.Comm
26   FROM Emp
27   WHERE Empno = V_AllTablesRecord.AtomicType.Empno;
28   SELECT Dname, Loc INTO V_AllTablesRecord.DeptRecord.
Dname,V_AllTablesRecord.DeptRecord.Loc
29   FROM Dept
30   WHERE Deptno = V_AllTablesRecord.Emprecord.Deptno;
31   SELECT Grade INTO V_AllTablesRecord.SalGradeRecord.Grade
32   FROM SalGrade
33   WHERE V_AllTablesRecord.Emprecord.Sal BETWEEN LoSal AND HiSal;
34   IF V_AllTablesRecord.Emprecord.MGR IS NOT NULL THEN
35   SELECT Ename INTO V_AllTablesRecord.AtomicType.MgrName
36   FROM Emp
37   WHERE Empno = V_AllTablesRecord.Emprecord.MGR;
38   ELSE
39   SELECT Ename INTO V_AllTablesRecord.AtomicType.MgrName
40   FROM Emp
41   WHERE MGR IS NULL;
42   END IF;
43   DBMS_OUTPUT.PUT_LINE('The Details of Employee Number
'||V_AllTablesRecord.AtomicType.Empno||' Requested by You Are ...');
44   DBMS_OUTPUT.PUT_LINE('The Employee Name :
'||V_AllTablesRecord.Emprecord.Ename);
45   DBMS_OUTPUT.PUT_LINE('The Department Number :
'||V_AllTablesRecord.Emprecord.Deptno||', Department Name is
'||INITCAP(V_AllTablesRecord.DeptRecord.Dname)||', and is Situated at
'||INITCAP(V_AllTablesRecord.DeptRecord.Loc));
46   DBMS_OUTPUT.PUT_LINE('The Designation :
'||V_AllTablesRecord.Emprecord.Job);
47   DBMS_OUTPUT.PUT_LINE('The Manager Number :
'||NVL(TO_CHAR(V_AllTablesRecord.Emprecord.MGR),'"Cannot be Managed"')||', and
his Name is : '||V_AllTablesRecord.AtomicType.MgrName);
48   DBMS_OUTPUT.PUT_LINE('The Joining Date :
'||V_AllTablesRecord.Emprecord.HireDate);
49   DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||CONCAT('INR
',TO_CHAR(V_AllTablesRecord.Emprecord.Sal,'99,999.99'))||' and his Grade as Per
Salary is '||V_AllTablesRecord.SalGradeRecord.Grade);
50   DBMS_OUTPUT.PUT_LINE('The Commission Earned :
'||NVL(TO_CHAR(V_AllTablesRecord.Emprecord.Comm),'No Commission...Sorry!'));
51   END;
```

```
 52  /
Enter value for enterempno: 7654
The Details of Employee Number 7654 Requested by You Are ...
The Employee Name :  MARTIN
The Department Number : 30, Department Name is Sales, and is Situated at Chicago
The Designation : SALESMAN
The Manager Number :  7698, and his Name is : BLAKE
The Joining Date : 28-SEP-81
The Basic Salary : INR   1,250.00 and his Grade as Per Salary is 2
The Commission Earned : 1400

PL/SQL procedure successfully completed.

SQL> SPOOL OFF
SQL> SET SERVEROUTPUT ON
SQL> SET VERIFY OFF
SQL> cl scr

SQL> DECLARE
  2  /*
  3  Declaration of The
  4  PL/SQL Table Data Type.
  5  */
  6  TYPE Dept_Table_Type --Name of The PL/SQL Table Type
  7  IS TABLE OF
  8  Dept.Dname%TYPE --The Data Column of The PL/SQL Table
  9  INDEX  BY  BINARY_INTEGER; --Index on The PL/SQL Table
 10  My_Dept_Table  Dept_Table_Type; --Instance of the PL/SQL Table
 11  V_Count            NUMBER(2);
 12  BEGIN
 13       SELECT   COUNT(*)
 14       INTO V_Count
 15       FROM Dept;
 16       /*
 17       Loading OR Populating The PL/SQL Table
 18       With Data into data Column Using The Index As
 19       A Reference To PL/SQL Table.
 20       */
 21       FOR  MyIndex  IN  1..V_Count  LOOP
 22            SELECT  Dname --Getting The Data For Dname Column From Database
 23            INTO  My_Dept_Table(MyIndex) --Assigning The Data To The PL/SQL
Table Index Ponited By MyIndex Variable
 24            FROM  Dept
 25            WHERE Deptno = MyIndex * 10;
 26       END  LOOP;
 27       /*
 28       Loading OR Populating The PL/SQL Table
 29       is Completed And The PL/SQL Table is Ready For
 30       Operations OR Business Logic Implementation.
 31       */
 32       /*
 33       Operations For Business Oriented Requirements
 34       On The Data Taken From The PL/SQL Table
 35       Index By Index
 36       */
```

```
 37        FOR  MYIndex IN   1..V_Count  LOOP
 38          DBMS_OUTPUT.PUT_LINE(My_Dept_Table(MyIndex)); --Referencing The
Required Data From The PL/SQL Table Through Index.
 39        END  LOOP;
 40        /*
 41        Operations For Business Oriented Requirements
 42        On The Data Taken From The PL/SQL Table
 43        Index By Index End Here
 44        */
 45  END;
 46  /
ACCOUNTING
RESEARCH
SALES
OPERATIONS

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> DECLARE
  2        TYPE Dept_Table_Type
  3        IS TABLE OF
  4        Dept%ROWTYPE
  5        INDEX  BY   BINARY_INTEGER;
  6        My_Dept_Table    Dept_Table_Type;
  7        V_Count          NUMBER(2);
  8  BEGIN
  9         SELECT  COUNT(*)
 10          INTO  V_Count
 11           FROM   Dept;
 12        FOR  MyIndex  IN  1..V_Count
 13        LOOP
 14              SELECT  *
 15              INTO  My_Dept_Table(MyIndex)
 16              FROM  Dept
 17              WHERE   Deptno = MyIndex * 10;
 18        END   LOOP;
 19        FOR  MyIndex  IN  1..V_Count
 20        LOOP
 21              DBMS_OUTPUT.PUT_LINE('Dept. '|| My_Dept_Table(MyIndex).Deptno
||' '
 22  ||My_Dept_Table(MyIndex).Dname||' is Located in ' ||
My_Dept_Table(MyIndex).Loc);
 23            END  LOOP;
 24  END;
 25  /
Dept. 10 ACCOUNTING is Located in NEW YORK
Dept. 20 RESEARCH is Located in DALLAS
Dept. 30 SALES is Located in CHICAGO
Dept. 40 OPERATIONS is Located in BOSTON

PL/SQL procedure successfully completed.

SQL> cl scr
```

```
SQL> COLUMN Empno FORMAT 9999
SQL> COLUMN Sal FORMAT 9999
SQL> COLUMN Comm FORMAT 9999
SQL> COLUMN Deptno FORMAT 99
SQL> SELECT * FROM Emp ORDER BY Empno;
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800		20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7839	KING	PRESIDENT		17-NOV-81	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

```
14 rows selected.

SQL> SELECT ROWID, Empno, Ename, Sal FROM Emp;
```

ROWID	EMPNO	ENAME	SAL
AAAMbGAAEAAAAA2AAA	7839	KING	5000
AAAMbGAAEAAAAA2AAB	7698	BLAKE	2850
AAAMbGAAEAAAAA2AAC	7782	CLARK	2450
AAAMbGAAEAAAAA2AAD	7566	JONES	2975
AAAMbGAAEAAAAA2AAE	7654	MARTIN	1250
AAAMbGAAEAAAAA2AAF	7499	ALLEN	1600
AAAMbGAAEAAAAA2AAG	7844	TURNER	1500
AAAMbGAAEAAAAA2AAH	7900	JAMES	950
AAAMbGAAEAAAAA2AAI	7521	WARD	1250
AAAMbGAAEAAAAA2AAJ	7902	FORD	3000
AAAMbGAAEAAAAA2AAK	7369	SMITH	800

ROWID	EMPNO	ENAME	SAL
AAAMbGAAEAAAAA2AAL	7788	SCOTT	3000
AAAMbGAAEAAAAA2AAM	7876	ADAMS	1100
AAAMbGAAEAAAAA2AAN	7934	MILLER	1300

```
14 rows selected.

SQL> DECLARE
  2  TYPE Emp_Table_Type
```

```
 3   IS TABLE OF
 4   Emp%ROWTYPE
 5   INDEX  BY  BINARY_INTEGER;
 6   My_Emp_Table Emp_Table_Type;
 7   V_RowID NUMBER(2) := 65;
 8   V_EmpCount NUMBER(2);
 9   BEGIN
10   SELECT COUNT(*)
11   INTO V_EmpCount
12   FROM Emp;
13   FOR  MyIndex  IN  1..V_EmpCount  LOOP
14   SELECT  *
15   INTO  My_Emp_Table(MyIndex)
16   FROM  Emp
17   WHERE SUBSTR(ROWID,18,1) = CHR(V_RowID);
18   V_RowID := V_RowID + 1;
19   END  LOOP;
20   DBMS_OUTPUT.PUT_LINE(RPAD('Employees Information', 80));
21   DBMS_OUTPUT.PUT_LINE(RPAD('-', 80,'-'));
22   DBMS_OUTPUT.PUT_LINE(RPAD('EmpNo', 8)|| RPAD('Ename', 12)||RPAD('Job',
12)||RPAD('Deptno', 8)||RPAD('Mgr', 10)||RPAD('Hiredate', 12)||RPAD('Sal',
12)||RPAD('Comm', 10));
23   DBMS_OUTPUT.PUT_LINE(RPAD('-', 80,'-'));
24   FOR  MyIndex  IN  1..V_EmpCount LOOP
25   DBMS_OUTPUT.PUT_LINE(RPAD(My_Emp_Table(MyIndex).Empno, 8)
||RPAD(My_Emp_Table(MyIndex).Ename, 12)||RPAD(My_Emp_Table(MyIndex).Job,
12)||RPAD(My_Emp_Table(MyIndex).Deptno,
8)||NVL(TO_CHAR(RPAD(My_Emp_Table(MyIndex).MGR, 10)),'No
Manager')||RPAD(My_Emp_Table(MyIndex).Hiredate,
12)||RPAD(My_Emp_Table(MyIndex).Sal,
12)||NVL(TO_CHAR(RPAD(My_Emp_Table(MyIndex).Comm, 12)),'-NA-'));
26   END  LOOP;
27   DBMS_OUTPUT.PUT_LINE(My_Emp_Table.COUNT||' Rows Selected.');
28   END;
29   /
```

```
Employees Information
--------------------------------------------------------------------------------
EmpNo    Ename        Job          Deptno   Mgr         Hiredate     Sal         Comm
--------------------------------------------------------------------------------
7839     KING         PRESIDENT    10       No Manager17-NOV-81     5000        -NA-
7698     BLAKE        MANAGER      30       7839        01-MAY-81    2850        -NA-
7782     CLARK        MANAGER      10       7839        09-JUN-81    2450        -NA-
7566     JONES        MANAGER      20       7839        02-APR-81    2975        -NA-
7654     MARTIN       SALESMAN     30       7698        28-SEP-81    1250        1400
7499     ALLEN        SALESMAN     30       7698        20-FEB-81    1600        300
7844     TURNER       SALESMAN     30       7698        08-SEP-81    1500        0
7900     JAMES        CLERK        30       7698        03-DEC-81    950         -NA-
7521     WARD         SALESMAN     30       7698        22-FEB-81    1250        500
7902     FORD         ANALYST      20       7566        03-DEC-81    3000        -NA-
7369     SMITH        CLERK        20       7902        17-DEC-80    800         -NA-
7788     SCOTT        ANALYST      20       7566        09-DEC-82    3000        -NA-
7876     ADAMS        CLERK        20       7788        12-JAN-83    1100        -NA-
7934     MILLER       CLERK        10       7782        23-JAN-82    1300        -NA-
14 Rows Selected.
```

```
PL/SQL procedure successfully completed.

SQL> DECLARE
  2        TYPE Dept_Table_Type
  3        IS TABLE OF
  4        Dept.Dname%TYPE
  5        INDEX  BY  BINARY_INTEGER;
  6        My_Dept_Table  Dept_Table_Type;
  7        V_Count          NUMBER(2);
  8        V_RecNo          NUMBER(2) := &EnterRecordNumber;
  9  BEGIN
 10        SELECT  COUNT(*)
 11        INTO V_Count
 12        FROM Dept;
 13        FOR  MyIndex  IN  1..V_Count  LOOP
 14            SELECT  Dname
 15            INTO  My_Dept_Table(MyIndex)
 16            FROM  Dept
 17            WHERE Deptno = MyIndex * 10;
 18        END  LOOP;
 19        FOR  MYIndex IN  1..V_Count  LOOP
 20                       DBMS_OUTPUT.PUT_LINE('The Department Number,
'||MyIndex*10||' is named as :  '||My_Dept_Table(MyIndex));
 21        END  LOOP;
 22        DBMS_OUTPUT.PUT_LINE('The PLSQL Table Contains
'||My_Dept_Table.COUNT||' Records.');
 23        DBMS_OUTPUT.PUT_LINE('The First Index Number of PLSQL Table is
'||My_Dept_Table.FIRST||' and the First Record is :
'||My_Dept_Table(My_Dept_Table.FIRST));
 24        DBMS_OUTPUT.PUT_LINE('The Last Index Number of PLSQL Table is
'||My_Dept_Table.LAST||' and the Last Record is :
'||My_Dept_Table(My_Dept_Table.LAST));
 25   DBMS_OUTPUT.PUT_LINE('The Previous Record of '||My_Dept_Table.LAST||'th
Record of PLSQL Table is '||My_Dept_Table.PRIOR(My_Dept_Table.LAST)||' and the
Data is : '||My_Dept_Table(My_Dept_Table.PRIOR(My_Dept_Table.LAST)));
 26   DBMS_OUTPUT.PUT_LINE('The Next Record of '||My_Dept_Table.FIRST||'st Record
of PLSQL Table is '||My_Dept_Table.NEXT(My_Dept_Table.FIRST)||' and the Data
is : '||My_Dept_Table(My_Dept_Table.NEXT(My_Dept_Table.FIRST)));
 27   IF My_Dept_Table.EXISTS(V_RecNo) THEN
 28   DBMS_OUTPUT.PUT_LINE('The Department Exists');
 29   DBMS_OUTPUT.PUT_LINE('The Department Name is, '||My_Dept_Table(V_RecNo));
 30   ELSE
 31   DBMS_OUTPUT.PUT_LINE('Sorry! ... Your Requested Data does not Exist...Check
the Record Range.');
 32   END IF;
 33   END;
 34   /
Enter value for enterrecordnumber: 3
The Department Number, 10 is named as :  ACCOUNTING
The Department Number, 20 is named as :  RESEARCH
The Department Number, 30 is named as :  SALES
The Department Number, 40 is named as :  OPERATIONS
The PLSQL Table Contains 4 Records.
The First Index Number of PLSQL Table is 1 and the First Record is : ACCOUNTING
The Last Index Number of PLSQL Table is 4 and the Last Record is : OPERATIONS
```

```
The Previous Record of 4th Record of PLSQL Table is 3 and the Data is : SALES
The Next Record of 1st Record of PLSQL Table is 2 and the Data is : RESEARCH
The Department Exists
The Department Name is, SALES

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> SELECT * FROM Dept;

DEPTNO DNAME          LOC
------ -------------- -------------
    10 ACCOUNTING     NEW YORK
    20 RESEARCH       DALLAS
    30 SALES          CHICAGO
    40 OPERATIONS     BOSTON

SQL> INSERT INTO Dept
  2  VALUES(50, 'SHIPPING', 'CHENNAI');

1 row created.

SQL> BEGIN
  2  INSERT INTO Dept
  3  VALUES(&GDeptno, '&GDname', '&GLoc');
  4  END;
  5  /
Enter value for gdeptno: 60
Enter value for gdname: CARGO
Enter value for gloc: MUMBAI

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> DECLARE
  2  V_Empno NUMBER(4) := &EnterEmpNo;
  3  V_Ename VARCHAR2(15) := '&EnterEname';
  4  V_Deptno NUMBER(2) := &EnterDepto;
  5  V_Job VARCHAR2(15) := '&EnterJob';
  6  V_MGR NUMBER := &EnterMGRNo;
  7  V_HireDate Emp.HireDate%TYPE := '&EnterHireDate';
  8  V_Sal Emp.Sal%TYPE := &EnterSal;
  9  V_Comm Emp.Comm%TYPE := &EnterComm;
 10  BEGIN
 11  INSERT INTO Emp(Empno, Ename, Deptno, Job, MGR, HireDate, Sal, Comm)
 12  VALUES(V_Empno, V_Ename, V_Deptno, V_Job, V_MGR, V_HireDate, V_Sal,
V_Comm);
 13  COMMIT;
 14  END;
 15  /
Enter value for enterempno: 1234
Enter value for enterename: Sample
Enter value for enterdepto: 30
```

```
Enter value for enterjob: CLERK
Enter value for entermgrno: 7566
Enter value for enterhiredate: 05-JUL-10
Enter value for entersal: 2500
Enter value for entercomm: NULL

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> DECLARE
  2  V_Empno Emp.Empno%TYPE NOT NULL := &EnterEmpNo;
  3  V_Ename Emp.Ename%TYPE NOT NULL := UPPER('&EnterEname');
  4  V_Deptno Emp.Deptno%TYPE NOT NULL := &EnterDepto;
  5  V_Job Emp.Job%TYPE NOT NULL := UPPER('&EnterJob');
  6  V_MGR Emp.MGR%TYPE := &EnterMGRNo;
  7  V_HireDate Emp.HireDate%TYPE NOT NULL := '&EnterHireDate';
  8  V_Sal Emp.Sal%TYPE NOT NULL := &EnterSal;
  9  V_Comm Emp.Comm%TYPE := &EnterComm;
 10  V_MGRName Emp.Ename%TYPE;
 11  BEGIN
 12  IF V_Deptno IN(10,20,30,40) AND
 13      V_MGR IN(7566, 7698, 7782, 7788, 7839, 7902) AND
 14      V_Job IN('PRESIDENT', 'ANALYST', 'MANAGER', 'CLERK', 'SALESMAN') THEN
 15  INSERT INTO Emp(Empno, Ename, Deptno, Job, MGR, HireDate, Sal, Comm)
 16  VALUES(V_Empno, V_Ename, V_Deptno, V_Job, V_MGR, V_HireDate, V_Sal,
V_Comm);
 17  SELECT Ename, Deptno, Job, MGR, HireDate, Sal, Comm INTO V_Ename , V_Deptno,
V_Job, V_MGR, V_HireDate, V_Sal, V_Comm
 18  FROM Emp
 19  WHERE Empno = V_Empno;
 20  IF V_MGR IS NOT NULL THEN
 21    SELECT Ename INTO V_MGRName
 22    FROM Emp
 23    WHERE Empno = V_MGR;
 24  ELSE
 25    SELECT Ename INTO V_MGRName
 26    FROM Emp
 27    WHERE MGR IS NULL;
 28  END IF;
 29  DBMS_OUTPUT.PUT_LINE('The Details of New Employee Record Inserted are as
Follows...');
 30  DBMS_OUTPUT.PUT_LINE('The Employee Number :  '||V_Empno);
 31  DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||INITCAP(V_Ename));
 32  DBMS_OUTPUT.PUT_LINE('The Department Number : '||V_Deptno);
 33  DBMS_OUTPUT.PUT_LINE('The Designation : '||INITCAP(V_Job));
 34  DBMS_OUTPUT.PUT_LINE('The Manager Number :  '||NVL(TO_CHAR(V_MGR),'"Cannot
be Managed"')||' , and his Name is : '||V_MGRName);
 35  DBMS_OUTPUT.PUT_LINE('The Joining Date : '||TO_CHAR(V_HireDate,'FMDD, Month
Year'));
 36  DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||CONCAT('INR
',TO_CHAR(V_Sal,'99,999.99')));
 37  DBMS_OUTPUT.PUT_LINE('The Commission Earned : '||NVL(TO_CHAR(V_Comm),'No
Commission...Sorry!'));
 38  ELSE
```

```
39   DBMS_OUTPUT.PUT_LINE('The Given Information Conflicts with the Master
Data...');
40   DBMS_OUTPUT.PUT_LINE('Please CROSS CHECK for Proper Data...');
41   DBMS_OUTPUT.PUT_LINE('Your INSERT Transaction has been Cancelled...');
42   DBMS_OUTPUT.PUT_LINE('Thank You for Using the Services...');
43   RETURN;
44   END IF;
45   COMMIT;
46   END;
47   /
Enter value for enterempno: 1235
Enter value for enterename: Sample
Enter value for enterdepto: 30
Enter value for enterjob: Clerk
Enter value for entermgrno: 7566
Enter value for enterhiredate: 05-JUL-10
Enter value for entersal: 2500
Enter value for entercomm: NULL
The Details of New Employee Record Inserted are as Follows...
The Employee Number :  1235
The Employee Name :   Sample
The Department Number : 30
The Designation : Clerk
The Manager Number :  7566 , and his Name is : JONES
The Joining Date : 5, July Twenty Ten
The Basic Salary : INR   2,500.00
The Commission Earned : No Commission...Sorry!

PL/SQL procedure successfully completed.

SQL> /
Enter value for enterempno: 1236
Enter value for enterename: Sample
Enter value for enterdepto: 80
Enter value for enterjob: CLERK
Enter value for entermgrno: 7566
Enter value for enterhiredate: 05-JUL-10
Enter value for entersal: 2500
Enter value for entercomm: NULL
The Given Information Conflicts with the Master Data...
Please CROSS CHECK for Proper Data...
Your INSERT Transaction has been Cancelled...
Thank You for Using the Services...

PL/SQL procedure successfully completed.

SQL> /
Enter value for enterempno: 1236
Enter value for enterename: Sample
Enter value for enterdepto: 30
Enter value for enterjob: SRCLERK
Enter value for entermgrno: 7566
Enter value for enterhiredate: 05-JUL-10
Enter value for entersal: 2500
Enter value for entercomm: NULL
```

```
The Given Information Conflicts with the Master Data...
Please CROSS CHECK for Proper Data...
Your INSERT Transaction has been Cancelled...
Thank You for Using the Services...

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> SELECT * FROM Dept;

DEPTNO DNAME          LOC
------ -------------- -------------
    10 ACCOUNTING     NEW YORK
    20 RESEARCH       DALLAS
    30 SALES          CHICAGO
    40 OPERATIONS     BOSTON
    50 SHIPPING       CHENNAI
    60 CARGO          MUMBAI

6 rows selected.

SQL> UPDATE Dept
  2  SET
  3  Dname = 'COURIER'
  4  WHERE Deptno = 60;

1 row updated.

SQL> BEGIN
  2  UPDATE Dept
  3  SET
  4  Dname = 'COURIER'
  5  WHERE Deptno = 50;
  6  END;
  7  /

PL/SQL procedure successfully completed.

SQL> ROLLBACK;

Rollback complete.

SQL> cl scr

SQL> DECLARE
  2  V_EmpRecord Emp%ROWTYPE;
  3  V_Empno Emp.Empno%TYPE NOT NULL := &EnterEmpno;
  4  V_Sal Emp.Sal%TYPE NOT NULL := &EnterNewSal;
  5  V_Comm Emp.Comm%TYPE NOT NULL := &EnterNewComm;
  6  V_MGRName Emp.Ename%TYPE;
  7  BEGIN
  8  SELECT * INTO V_EmpRecord
  9  FROM Emp
 10  WHERE Empno = V_Empno;
```

```
11  IF V_EmpRecord.Job IN('PRESIDENT','ANALYST','MANAGER','CLERK') THEN
12  DBMS_OUTPUT.PUT_LINE('The Original Details of Employee Number Requested for
Update are '||V_Empno);
13  DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||INITCAP(V_EmpRecord.Ename));
14  DBMS_OUTPUT.PUT_LINE('The Original Basic Salary : '||CONCAT('INR
',TO_CHAR(V_EmpRecord.Sal,'99,999.99')));
15  DBMS_OUTPUT.PUT_LINE('The Original Commission Earned :
'||NVL(TO_CHAR(V_EmpRecord.Comm),'No Commission...Sorry!'));
16  DBMS_OUTPUT.PUT_LINE('Mr. '||INITCAP(V_EmpRecord.Ename)||' Cannot be
Updated as he is not Eligible for Commission...');
17  DBMS_OUTPUT.PUT_LINE('The Updation of Data Was Not Sucessful... Thank
You...for using the Data Updation Services...');
18  ELSE
19  DBMS_OUTPUT.PUT_LINE('The Original Details of Employee Number Requested for
Update are '||V_Empno);
20  DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||INITCAP(V_EmpRecord.Ename));
21  DBMS_OUTPUT.PUT_LINE('The Original Basic Salary : '||CONCAT('INR
',TO_CHAR(V_EmpRecord.Sal,'99,999.99')));
22  DBMS_OUTPUT.PUT_LINE('The Original Commission Earned :
'||NVL(TO_CHAR(V_EmpRecord.Comm),'No Commission...Sorry!'));
23  DBMS_OUTPUT.PUT_LINE('The Updation of Data is Under Process... Please
Wait...');
24  UPDATE Emp
25  SET Sal = V_Sal,
26       Comm = V_Comm
27  WHERE Empno = V_Empno;
28  DBMS_OUTPUT.PUT_LINE('The Updation of Data Was Sucessful... Thank You...for
using the Data Updation Services...');
29  SELECT * INTO V_EmpRecord
30  FROM Emp
31  WHERE Empno = V_Empno;
32  IF V_EmpRecord.MGR IS NOT NULL THEN
33   SELECT Ename INTO V_MGRName
34   FROM Emp
35   WHERE Empno = V_EmpRecord.MGR;
36  ELSE
37   SELECT Ename INTO V_MGRName
38   FROM Emp
39   WHERE MGR IS NULL;
40  END IF;
41  DBMS_OUTPUT.PUT_LINE('The Details of Updated Employee Record are as
Follows...');
42  DBMS_OUTPUT.PUT_LINE('The Employee Number :  '||V_EmpRecord.Empno);
43  DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||INITCAP(V_EmpRecord.Ename));
44  DBMS_OUTPUT.PUT_LINE('The Department Number : '||V_EmpRecord.Deptno);
45  DBMS_OUTPUT.PUT_LINE('The Designation : '||INITCAP(V_EmpRecord.Job));
46  DBMS_OUTPUT.PUT_LINE('The Manager Number :
'||NVL(TO_CHAR(V_EmpRecord.MGR),'"Cannot be Managed"')||' , and his Name is :
'||V_MGRName);
47  DBMS_OUTPUT.PUT_LINE('The Joining Date :
'||TO_CHAR(V_EmpRecord.HireDate,'FMDD, Month Year'));
48  DBMS_OUTPUT.PUT_LINE('The Basic Salary Updated is : '||CONCAT('INR
',TO_CHAR(V_EmpRecord.Sal,'99,999.99')));
49  DBMS_OUTPUT.PUT_LINE('The Commission Updated is : '||V_EmpRecord.Comm);
50  END IF;
```

```
 51  --COMMIT;
 52  END;
 53  /
Enter value for enterempno: 7654
Enter value for enternewsal: 4000
Enter value for enternewcomm: 1000
The Original Details of Employee Number Requested for Update are 7654
The Employee Name :  Martin
The Original Basic Salary : INR   1,250.00
The Original Commission Earned : 1400
The Updation of Data is Under Process... Please Wait...
The Updation of Data Was Sucessful... Thank You...for using the Data Updation
Services...
The Details of Updated Employee Record are as Follows...
The Employee Number :  7654
The Employee Name :  Martin
The Department Number : 30
The Designation : Salesman
The Manager Number :  7698 , and his Name is : BLAKE
The Joining Date : 28, September Nineteen Eighty-One
The Basic Salary Updated is : INR   4,000.00
The Commission Updated is : 1000

PL/SQL procedure successfully completed.

SQL> /
Enter value for enterempno: 7566
Enter value for enternewsal: 4500
Enter value for enternewcomm: 600
The Original Details of Employee Number Requested for Update are 7566
The Employee Name :  Jones
The Original Basic Salary : INR   2,975.00
The Original Commission Earned : No Commission...Sorry!
Mr. Jones Cannot be Updated as he is not Eligible for Commission...
The Updation of Data Was Not Sucessful... Thank You...for using the Data
Updation Services...

PL/SQL procedure successfully completed.

SQL> SPOOL OFF
SQL> cl scr

SQL> DELETE FROM Emp
  2  WHERE Empno = 7654;

1 row deleted.

SQL> ROLLBACK;

Rollback complete.

SQL> BEGIN
  2  DELETE FROM Emp
  3  WHERE Empno = 7654;
  4  END;
```

```
    5  /

PL/SQL procedure successfully completed.

SQL> ROLLBACK;

Rollback complete.

SQL> cl scr

SQL> DECLARE
  2  V_EmpRecord Emp%ROWTYPE;
  3  V_Empno Emp.Empno%TYPE NOT NULL := &EnterEmpno;
  4  V_MGRName Emp.Ename%TYPE;
  5  BEGIN
  6  SELECT * INTO V_EmpRecord
  7  FROM Emp
  8  WHERE Empno = V_Empno;
  9  IF V_EmpRecord.MGR IS NOT NULL THEN
 10  SELECT Ename INTO V_MGRName
 11  FROM Emp
 12  WHERE Empno = V_EmpRecord.MGR;
 13  ELSE
 14  SELECT Ename INTO V_MGRName
 15  FROM Emp
 16  WHERE MGR IS NULL;
 17  END IF;
 18  DBMS_OUTPUT.PUT_LINE('The Details of Employee Number Being Deleted are
'||V_Empno);
 19  DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||INITCAP(V_EmpRecord.Ename));
 20  DBMS_OUTPUT.PUT_LINE('The Department Number : '||V_EmpRecord.Deptno);
 21  DBMS_OUTPUT.PUT_LINE('The Designation : '||INITCAP(V_EmpRecord.Job));
 22  DBMS_OUTPUT.PUT_LINE('The Manager Number :
'||NVL(TO_CHAR(V_EmpRecord.MGR),'"Cannot be Managed"')||', and his Name is :
'||V_MGRName);
 23  DBMS_OUTPUT.PUT_LINE('The Joining Date :
'||TO_CHAR(V_EmpRecord.HireDate,'FMDD, Month Year'));
 24  DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||CONCAT('INR
',TO_CHAR(V_EmpRecord.Sal,'99,999.99')));
 25  DBMS_OUTPUT.PUT_LINE('The Commission Earned :
'||NVL(TO_CHAR(V_EmpRecord.Comm),'No Commission...Sorry!'));
 26  DBMS_OUTPUT.PUT_LINE('The Deletion Under Process... Please Wait...');
 27  DELETE FROM EMP
 28  WHERE Empno = V_Empno;
 29  DBMS_OUTPUT.PUT_LINE('The Deletion of Data Was Sucessful... Thank You...for
using the Delete Services...');
 30  COMMIT;
 31  END;
 32  /
Enter value for enterempno: 7654
old   3: V_Empno Emp.Empno%TYPE NOT NULL := &EnterEmpno;
new   3: V_Empno Emp.Empno%TYPE NOT NULL := 7654;

PL/SQL procedure successfully completed.
```

```
SQL> SET SERVEROUTPUT ON
SQL> SET VERIFY ON
SQL> ROLLBACK;

Rollback complete.

SQL> cl scr

SQL> DECLARE
  2  V_EmpRecord Emp%ROWTYPE;
  3  V_Empno Emp.Empno%TYPE NOT NULL := &EnterEmpno;
  4  V_MGRName Emp.Ename%TYPE;
  5  BEGIN
  6  SELECT * INTO V_EmpRecord
  7  FROM Emp
  8  WHERE Empno = V_Empno;
  9  IF V_EmpRecord.MGR IS NOT NULL THEN
 10  SELECT Ename INTO V_MGRName
 11  FROM Emp
 12  WHERE Empno = V_EmpRecord.MGR;
 13  ELSE
 14  SELECT Ename INTO V_MGRName
 15  FROM Emp
 16  WHERE MGR IS NULL;
 17  END IF;
 18  DBMS_OUTPUT.PUT_LINE('The Details of Employee Number Being Deleted are
'||V_Empno);
 19  DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||INITCAP(V_EmpRecord.Ename));
 20  DBMS_OUTPUT.PUT_LINE('The Department Number : '||V_EmpRecord.Deptno);
 21  DBMS_OUTPUT.PUT_LINE('The Designation : '||INITCAP(V_EmpRecord.Job));
 22  DBMS_OUTPUT.PUT_LINE('The Manager Number :
'||NVL(TO_CHAR(V_EmpRecord.MGR),'"Cannot be Managed"')||', and his Name is :
'||V_MGRName);
 23  DBMS_OUTPUT.PUT_LINE('The Joining Date :
'||TO_CHAR(V_EmpRecord.HireDate,'FMDD, Month Year'));
 24  DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||CONCAT('INR
',TO_CHAR(V_EmpRecord.Sal,'99,999.99')));
 25  DBMS_OUTPUT.PUT_LINE('The Commission Earned :
'||NVL(TO_CHAR(V_EmpRecord.Comm),'No Commission...Sorry!'));
 26  DBMS_OUTPUT.PUT_LINE('The Deletion Under Process... Please Wait...');
 27  DELETE FROM EMP
 28  WHERE Empno = V_Empno;
 29  DBMS_OUTPUT.PUT_LINE('The Deletion of Data Was Sucessful... Thank You...for
using the Delete Services...');
 30  COMMIT;
 31  END;
 32  /
Enter value for enterempno: 7654
old   3: V_Empno Emp.Empno%TYPE NOT NULL := &EnterEmpno;
new   3: V_Empno Emp.Empno%TYPE NOT NULL := 7654;
DECLARE
*
ERROR at line 1:
ORA-01403: no data found
ORA-06512: at line 6
```

```
SQL> /
Enter value for enterempno: 7782
old    3: V_Empno Emp.Empno%TYPE NOT NULL := &EnterEmpno;
new    3: V_Empno Emp.Empno%TYPE NOT NULL := 7782;
The Details of Employee Number Being Deleted are 7782
The Employee Name :  Clark
The Department Number : 10
The Designation : Manager
The Manager Number :  7839, and his Name is : KING
The Joining Date : 9, June Nineteen Eighty-One
The Basic Salary : INR   2,450.00
The Commission Earned : No Commission...Sorry!
The Deletion Under Process... Please Wait...
DECLARE
*
ERROR at line 1:
ORA-02292: integrity constraint (SCOTT.EMP_SELF_KEY) violated - child record
found
ORA-06512: at line 27


SQL> SPOOL OFF
SQL> cl scr

SQL> DECLARE
  2  V_EmpRecord Emp%ROWTYPE;
  3  V_Empno Emp.Empno%TYPE NOT NULL := &EnterEmpno;
  4  V_MGRName Emp.Ename%TYPE;
  5  BEGIN
  6  SELECT * INTO V_EmpRecord
  7  FROM Emp
  8  WHERE Empno = V_Empno;
  9  IF V_EmpRecord.MGR IS NOT NULL THEN
 10  SELECT Ename INTO V_MGRName
 11  FROM Emp
 12  WHERE Empno = V_EmpRecord.MGR;
 13  ELSE
 14  SELECT Ename INTO V_MGRName
 15  FROM Emp
 16  WHERE MGR IS NULL;
 17  END IF;
 18  DBMS_OUTPUT.PUT_LINE('The Details of Employee Number Being Deleted are
'||V_Empno);
 19  DBMS_OUTPUT.PUT_LINE('The Employee Name :  '||INITCAP(V_EmpRecord.Ename));
 20  DBMS_OUTPUT.PUT_LINE('The Department Number : '||V_EmpRecord.Deptno);
 21  DBMS_OUTPUT.PUT_LINE('The Designation : '||INITCAP(V_EmpRecord.Job));
 22  DBMS_OUTPUT.PUT_LINE('The Manager Number :
'||NVL(TO_CHAR(V_EmpRecord.MGR),'"Cannot be Managed"')||', and his Name is :
'||V_MGRName);
 23  DBMS_OUTPUT.PUT_LINE('The Joining Date :
'||TO_CHAR(V_EmpRecord.HireDate,'FMDD, Month Year'));
 24  DBMS_OUTPUT.PUT_LINE('The Basic Salary : '||CONCAT('INR
',TO_CHAR(V_EmpRecord.Sal,'99,999.99')));
```

```
 25  DBMS_OUTPUT.PUT_LINE('The Commission Earned :
'||NVL(TO_CHAR(V_EmpRecord.Comm),'No Commission...Sorry!'));
 26  DBMS_OUTPUT.PUT_LINE('The Deletion Under Process... Please Wait...');
 27  DELETE FROM EMP
 28  WHERE Empno = V_Empno;
 29  DBMS_OUTPUT.PUT_LINE('The Deletion of Data Was Sucessful... Thank You...for
using the Delete Services...');
 30  COMMIT;
 31  END;
 32  /
Enter value for enterempno: 7654
old   3: V_Empno Emp.Empno%TYPE NOT NULL := &EnterEmpno;
new   3: V_Empno Emp.Empno%TYPE NOT NULL := 7654;
The Details of Employee Number Being Deleted are 7654
The Employee Name :  Martin
The Department Number : 30
The Designation : Salesman
The Manager Number :  7698, and his Name is : BLAKE
The Joining Date : 28, September Nineteen Eighty-One
The Basic Salary : INR   1,250.00
The Commission Earned : 1400
The Deletion Under Process... Please Wait...
The Deletion of Data Was Sucessful... Thank You...for using the Delete
Services...

PL/SQL procedure successfully completed.

SQL> cl scr

SQL> SPOOL E:\OraSP\Cursors9AM.DOC
```