

```
declare
    type data is table of number;
    dt data:=data(10,20,30);
begin
    for i in dt.first..dt.last
    loop
        dbms_output.put_line(dt(i));
    end loop;
end;
/
```

```
-----
declare
    type marks is table of number;
    mk marks:=marks(10,20,30,40);
begin
    dbms_output.put_line(mk.count);
    mk.extend(2);
    mk(mk.last):=50;
    dbms_output.put_line('After Extending');
    for i in mk.first..mk.last
    loop
        dbms_output.put_line(mk(i));
    end loop;

    dbms_output.put_line('After Deleting');
    mk.delete(1);
    for i in mk.first..mk.last
    loop
        dbms_output.put_line(mk(i));
    end loop;

    if mk.exists(2) then
        dbms_output.put_line('Found');
        dbms_output.put_line(mk(2));
    else
        dbms_output.put_line('Not Found');
    end if;
    dbms_output.put_line(mk.count);
end;
/
```

```
-----  
declare
    type nums is table of number;
    no_nums:=nums();
    limit number;
```

```
begin
    limit:=&limit;
    no.extend(limit);
    for i in 1..limit
    loop
        no(i):=i*i;
    end loop;

    for i in no.first..no.last
    loop
        dbms_output.put_line(no(i));
    end loop;

end;
/
-----
```

```
=====SQL=====
SQL*Plus: Release 10.2.0.1.0 - Production on Thu Jan 8 08:43:43 2026
```

```
Copyright (c) 1982, 2005, Oracle. All rights reserved.
```

```
SQL> connect
Enter user-name: prince/sagar
Connected.
SQL> create type data as table of number;
  2  /
```

```
Type created.
```

```
SQL> create type toollist as table of varchar(10);
  2  /
```

```
Type created.
```

```
SQL> create table labour(labid number,tools toollist);
create table labour(labid number,tools toollist)
*
ERROR at line 1:
ORA-22913: must specify table name for nested table column or attribute
```

```
SQL> create table labour(labid number,tools toollist) nested table tools store as
toolstore;
```

```
Table created.
```

```
SQL> insert into labour values(101,toollist('Hammer','Nails'));
```

```
1 row created.
```

```
SQL> insert into labour values(102,toollist('Plier','Driver'));

1 row created.

SQL> select * from labour;

      LABID
-----
TOOLS
-----
          101
TOOLLIST('Hammer', 'Nails')

          102
TOOLLIST('Plier', 'Driver')

SQL> create type marks as table of number;
  2 /
create type marks as table of number;
*
ERROR at line 1:
ORA-00955: name is already used by an existing object

SQL> create type runs as table of number;
  2 /

Type created.

SQL> create table players(playcd number,playname varchar(10),
  2 runscored runs) nested table runscored store as runstore;

Table created.

SQL> insert into players values(1,'Rohit',runs(56,76,78));

1 row created.

SQL> insert into players values(2,'Virat',runs(53,34));

1 row created.

SQL> insert into players values(3,'Rahul',runs(53,34,34,76));

1 row created.

SQL> select * from players;
```

```
PLAYCD PLAYNAME
```

```
-----  
RUNSCORED
```

```
-----  
1 Rohit  
RUNS(56, 76, 78)
```

```
2 Virat  
RUNS(53, 34)
```

```
3 Rahul  
RUNS(53, 34, 34, 76)
```

```
SQL> select * from players p where exists(select 1 from table(p.runscored) t  
2 where t.column_value=76);  
select * from players p where exists(select 1 from table(p.runscored) t  
*)
```

```
ERROR at line 1:
```

```
ORA-00928: missing SELECT keyword
```

```
SQL> select * from players p where exists(select 1 from table(p.runscored) t  
2 where t.column_value=76);
```

```
PLAYCD PLAYNAME
```

```
-----  
RUNSCORED
```

```
-----  
3 Rahul  
RUNS(53, 34, 34, 76)
```

```
1 Rohit  
RUNS(56, 76, 78)
```

```
SQL> select p.playcd,p.playname,t.column_value from players p,table(p.runscored) t;
```

```
PLAYCD PLAYNAME COLUMN_VALUE
```

```
-----  
1 Rohit 56  
1 Rohit 76  
1 Rohit 78  
2 Virat 53  
2 Virat 34  
3 Rahul 53  
3 Rahul 34  
3 Rahul 34  
3 Rahul 76
```

```
9 rows selected.
```

```
SQL> ed c:/oracle/ns1.sql
```

```
SQL> @ c:/oracle/ns1.sql
      type data as table of number;
      *
```

```
ERROR at line 2:
```

```
ORA-06550: line 2, column 15:
```

```
PLS-00103: Encountered the symbol "TABLE" when expecting one of the following:
object opaque
```

```
SQL> ed c:/oracle/ns1.sql
```

```
SQL> @ c:/oracle/ns1.sql
```

```
PL/SQL procedure successfully completed.
```

```
SQL> set serveroutput on
```

```
SQL> @ c:/oracle/ns1.sql
```

```
10
```

```
20
```

```
30
```

```
PL/SQL procedure successfully completed.
```

```
SQL> ed c:/oracle/ns1.sql
```

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
```

```
0
```

```
PL/SQL procedure successfully completed.
```

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
```

```
3
```

```
PL/SQL procedure successfully completed.
```

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
```

```
0
```

```
1
```

```
PL/SQL procedure successfully completed.
```

```
SQL> ed c:/oracle/ns2.sql
SQL> @ c:/oracle/ns2.sql
0
3

PL/SQL procedure successfully completed.

SQL> ed c:/oracle/ns2.sql
SQL> @ c:/oracle/ns2.sql
      mk:=10;
      *
ERROR at line 7:
ORA-06550: line 7, column 6:
PLS-00382: expression is of wrong type
ORA-06550: line 7, column 2:
PL/SQL: Statement ignored

SQL> ed c:/oracle/ns1.sql
SQL> ed c:/oracle/ns2.sql
SQL> @ c:/oracle/ns2.sql
      mk:=(10);
      *
ERROR at line 7:
ORA-06550: line 7, column 6:
PLS-00382: expression is of wrong type
ORA-06550: line 7, column 2:
PL/SQL: Statement ignored

SQL> ed c:/oracle/ns2.sql
SQL> @ c:/oracle/ns2.sql
      mk=10;
      *
ERROR at line 7:
ORA-06550: line 7, column 4:
PLS-00103: Encountered the symbol "=" when expecting one of the following:
:= . ( @ % ;
The symbol ":=" was inserted before "=" to continue.

SQL> ed c:/oracle/ns2.sql
SQL> @ c:/oracle/ns2.sql
```

```
0
After Extending
10
1
```

PL/SQL procedure successfully completed.

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
0
declare
*
ERROR at line 1:
ORA-06533: Subscript beyond count
ORA-06512: at line 8
```

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
0
After Extending
10
20
2
```

PL/SQL procedure successfully completed.

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
2
After Extending
30
40
4
```

PL/SQL procedure successfully completed.

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
2
After Extending
10
20
30
4
```

```
PL/SQL procedure successfully completed.
```

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
```

```
4
```

```
After Extending
```

```
10
```

```
20
```

```
30
```

```
40
```

```
50
```

```
After Deleting
```

```
20
```

```
30
```

```
40
```

```
50
```

```
5
```

```
PL/SQL procedure successfully completed.
```

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
```

```
4
```

```
After Extending
```

```
10
```

```
20
```

```
30
```

```
40
```

```
50
```

```
After Deleting
```

```
10
```

```
20
```

```
30
```

```
40
```

```
50
```

```
6
```

```
PL/SQL procedure successfully completed.
```

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
```

```
4
```

```
After Extending
```

```
10
```

```
20
```

```
30
```

```
40
```

```
50
After Deleting
20
30
40
50
Not Found
5
```

PL/SQL procedure successfully completed.

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
```

```
4
After Extending
10
20
30
40
50
After Deleting
20
30
40
50
Found
5
```

PL/SQL procedure successfully completed.

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
```

```
4
After Extending
10
20
30
40
50
After Deleting
20
30
40
50
Not Found
5
```

PL/SQL procedure successfully completed.

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> @ c:/oracle/ns2.sql
```

```
4
```

```
After Extending
```

```
10
```

```
20
```

```
30
```

```
40
```

```
50
```

```
After Deleting
```

```
20
```

```
30
```

```
40
```

```
50
```

```
Found
```

```
20
```

```
5
```

```
PL/SQL procedure successfully completed.
```

```
SQL> ed c:/oracle/ns2.sql
```

```
SQL> ed c:/oracle/ns3.sql
```

```
SQL> @ c:/oracle/ns3.sql
```

```
Enter value for limit: 20
```

```
old    6:      limit:=&limit;
```

```
new    6:      limit:=20;
```

```
1
```

```
2
```

```
3
```

```
4
```

```
5
```

```
6
```

```
7
```

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8
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9
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10
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11
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12
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13
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14
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15
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16
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17
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18
```

```
19
```

```
20
```

PL/SQL procedure successfully completed.

```
SQL> @ c:/oracle/ns3.sql
Enter value for limit: 100
old   6:      limit:=&limit;
new   6:      limit:=100;
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
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96
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98
99
100

PL/SQL procedure successfully completed.

SQL> ed c:/oracle/ns3.sql

SQL>