

```

declare
    a number;
begin
    a:=1;
    loop
        dbms_output.put_line(a);
        a:=a+1;
        exit when a>10;
    end loop;

end;
/

```

```

-----
declare
    a number;
begin
    a:=1;
    while a<=10
    loop
        dbms_output.put_line(a);
        a:=a+1;
    end loop;

end;
/

```

```

-----
declare
    a number;
begin
    for a in 1..10
    loop
        dbms_output.put_line(a);
    end loop;

end;
/

```

```

-----
declare
    a number;
begin
    for a in reverse 1..10
    loop
        dbms_output.put_line(a);
    end loop;

end;
/

```

```

-----
declare
    a number;
    sq number;

```

```

begin
    for a in 1..10
    loop
        sq:=a*a;
        insert into squares values(a,sq);
    end loop;
end;
/

```

```

-----
declare
    name varchar(10);
    cid number;
begin
    for cid in 1..10
    loop
        select cname into name from customers where cno=cid;
        dbms_output.put_line(name);
    end loop;

```

```

end;
/
-----
declare
    cid customers.cno%type;
    name customers.cname%type;
    town customers.city%type;
begin
    cid:=&cid;
    select cname,city,dept into name,town from customers where cno=cid;
    dbms_output.put_line(name);
    dbms_output.put_line(town);
end;
/

```

```

-----
declare
    cid customers.cno%type;
    custdata customers%rowtype;
begin
    cid:=&cid;
    select * into custdata from customers c where cno=cid;
    dbms_output.put_line('Name ' || custdata.cname);
    dbms_output.put_line('City ' || custdata.city);
    dbms_output.put_line('Department ' || custdata.dept);
end;
/

```

```

-----
declare
    cid customers.cno%type;
    phone customers.contact%type;

```

```

begin
    cid:=&cid;
    select contact into phone from customers where cno=cid;
    if phone=null
    then
        phone:=&phone;
        update customers set contact=phone where cno=cid;
        dbms_output.put_line('Phone No Updated!!');
    else
        dbms_output.put_line('Contact no already exists');
    end if;
end;
/

```

```

=====

                                Loops in PL/SQL

=====

```

SQL\*Plus: Release 10.2.0.1.0 - Production on Sat Dec 6 08:50:09 2025

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```

SQL> connect
Enter user-name: prince
Enter password:
Connected.
SQL> set serveroutput on
SQL> ed c:/oracle/loop1.sql

```

```

SQL> ed c:/oracle/loop2.sql

```

```

SQL> @ c:/oracle/loop2.sql

```

```

1
2
3
4
5
6
7
8
9
10

```

PL/SQL procedure successfully completed.

```

SQL> ed c:/oracle/loop2.sql

```

```
SQL> x
SP2-0042: unknown command "x" - rest of line ignored.
SQL> ed c:/oracle/loop3.sql

SQL> @ c:/oracle/loop3.sql
SP2-0552: Bind variable "FOR" not declared.
SQL> ed c:/oracle/loop3.sql

SQL> @ c:/oracle/loop3.sql
      a:=a+1;
      *
ERROR at line 7:
ORA-06550: line 7, column 3:
PLS-00363: expression 'A' cannot be used as an assignment target
ORA-06550: line 7, column 3:
PL/SQL: Statement ignored
```

```
SQL> ed c:/oracle/loop3.sql
```

```
SQL> @ c:/oracle/loop3.sql
1
2
3
4
5
6
7
8
9
10
```

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

```
SQL> ed c:/oracle/loop3.sql
```

```
SQL> ed c:/oracle/loop4.sql
```

```
SQL> @ c:/oracle/loop4.sql
      a:=a-1;
      *
ERROR at line 7:
ORA-06550: line 7, column 3:
PLS-00363: expression 'A' cannot be used as an assignment target
ORA-06550: line 7, column 3:
PL/SQL: Statement ignored
```

```
SQL> ed c:/oracle/loop4.sql
```

```
SQL> @ c:/oracle/loop4.sql
```

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

```
SQL> ed c:/oracle/loop4.sql
```

```
SQL> @ c:/oracle/loop3.sql
```

```
1  
2  
3  
4  
5  
6  
7  
8  
9  
10
```

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

```
SQL> ed c:/oracle/loop3.sql
```

```
SQL> @ c:/oracle/loop4.sql
```

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

```
SQL> ed c:/oracle/loop4.sql
```

```
SQL> @ c:/oracle/loop4.sql
```

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

```
SQL> ed c:/oracle/loop3.sql
```

```
SQL> ed c:/oracle/loop4.sql
```

```
SQL> @ c:/oracle/loop4.sql
```

```
10  
9  
8  
7  
6  
5  
4  
3  
2  
1
```

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

```
SQL> ed c:/oracle/loop4.sql
```

```
SQL>
```

```
SQL> create table squares (no number,square number);
```

Table created.

```
SQL> ed c:/oracle/loop5.sql
```

```
SQL> @c:/oracle/loop5.sql
```

PL/SQL procedure successfully completed.

```
SQL> select * from squares;
```

| NO | SQUARE |
|----|--------|
| 1  | 1      |
| 2  | 4      |
| 3  | 9      |
| 4  | 16     |
| 5  | 25     |
| 6  | 36     |
| 7  | 49     |
| 8  | 64     |
| 9  | 81     |
| 10 | 100    |

10 rows selected.

```
SQL> ed c:/oracle/loop5.sql
```

```
SQL> select * from customers;
```

| CNO | CNAME  | AMOUNT | DOJ       | CONTACT | DEPT | CITY    |
|-----|--------|--------|-----------|---------|------|---------|
| 1   | Ravi   | 495    | 10-APR-20 | 9983    | 10   | Indore  |
| 2   | Sumit  | 715    | 13-APR-20 | 8832    | 20   | Sagar   |
| 3   | Ajay   | 165    | 30-SEP-22 |         | 10   | Sagar   |
| 4   | Vijay  | 935    | 15-FEB-23 |         | 30   | Indore  |
| 5   | Sanjay | 385    | 10-APR-20 |         | 10   | Indore  |
| 6   | Gourav | 55     | 03-NOV-25 |         | 20   | Sagar   |
| 7   | Sourav | 120    | 06-NOV-25 |         | 10   | Sagar   |
| 8   | Raja   | 230    | 04-OCT-25 |         | 20   | Bhopal  |
| 9   | Rani   | 260    | 16-MAY-23 |         | 30   | Bhopal  |
| 10  | Gaurav | 300    | 15-NOV-25 | 3394    | 40   | Gwalior |

10 rows selected.

```
SQL> ed c:/oracle/loop6.sql
```

```
SQL> @ c:/oracle/loop6.sql
```

```
Ravi  
Sumit  
Ajay  
Vijay  
Sanjay  
Gourav  
Sourav  
Raja  
Rani  
Gaurav
```

PL/SQL procedure successfully completed.

```
SQL> ed c:/oracle/loop6.sql
```

```
SQL> select * from customers;
```

| CNO | CNAME  | AMOUNT | DOJ       | CONTACT | DEPT | CITY    |
|-----|--------|--------|-----------|---------|------|---------|
| 1   | Ravi   | 495    | 10-APR-20 | 9983    | 10   | Indore  |
| 2   | Sumit  | 715    | 13-APR-20 | 8832    | 20   | Sagar   |
| 3   | Ajay   | 165    | 30-SEP-22 |         | 10   | Sagar   |
| 4   | Vijay  | 935    | 15-FEB-23 |         | 30   | Indore  |
| 5   | Sanjay | 385    | 10-APR-20 |         | 10   | Indore  |
| 6   | Gourav | 55     | 03-NOV-25 |         | 20   | Sagar   |
| 7   | Sourav | 120    | 06-NOV-25 |         | 10   | Sagar   |
| 8   | Raja   | 230    | 04-OCT-25 |         | 20   | Bhopal  |
| 9   | Rani   | 260    | 16-MAY-23 |         | 30   | Bhopal  |
| 10  | Gaurav | 300    | 15-NOV-25 | 3394    | 40   | Gwalior |

10 rows selected.

```
SQL> ed c:/oracle/loop7.sql
```

```
SQL> @ c:/oracle/loop7.sql
```

```
Enter value for cno: 1
```

```
old 6: cno:=&cno;
```

```
new 6: cno:=1;
```

```
declare
```

```
*
```

```
ERROR at line 1:
```

```
ORA-01422: exact fetch returns more than requested number of rows
```

```
ORA-06512: at line 7
```

```
SQL> ed c:/oracle/loop7.sql
```

```
SQL> @ c:/oracle/loop7.sql
Enter value for cid: 1
old 6:      cid:=&cid;
new 6:      cid:=1;
Ravi
Indore
```

PL/SQL procedure successfully completed.

```
SQL> @ c:/oracle/loop7.sql
Enter value for cid: 2
old 6:      cid:=&cid;
new 6:      cid:=2;
Sumit
Sagar
```

PL/SQL procedure successfully completed.

```
SQL> @ c:/oracle/loop7.sql
Enter value for cid: 3
old 6:      cid:=&cid;
new 6:      cid:=3;
Ajay
Sagar
```

PL/SQL procedure successfully completed.

```
SQL> @ c:/oracle/loop7.sql
Enter value for cid: 4
old 6:      cid:=&cid;
new 6:      cid:=4;
Vijay
Indore
```

PL/SQL procedure successfully completed.

```
SQL> 4
4*      town varchar(6);
SQL> @ c:/oracle/loop7.sql
Enter value for cid: 5
old 6:      cid:=&cid;
new 6:      cid:=5;
declare
*
```

```
ERROR at line 1:
ORA-06502: PL/SQL: numeric or value error: character string buffer too small
ORA-06512: at line 7
```

```
SQL> select * from customers;
```

| CNO | CNAME  | AMOUNT | DOJ       | CONTACT | DEPT | CITY    |
|-----|--------|--------|-----------|---------|------|---------|
| 1   | Ravi   | 495    | 10-APR-20 | 9983    | 10   | Indore  |
| 2   | Sumit  | 715    | 13-APR-20 | 8832    | 20   | Sagar   |
| 3   | Ajay   | 165    | 30-SEP-22 |         | 10   | Sagar   |
| 4   | Vijay  | 935    | 15-FEB-23 |         | 30   | Indore  |
| 5   | Sanjay | 385    | 10-APR-20 |         | 10   | Indore  |
| 6   | Gourav | 55     | 03-NOV-25 |         | 20   | Sagar   |
| 7   | Sourav | 120    | 06-NOV-25 |         | 10   | Sagar   |
| 8   | Raja   | 230    | 04-OCT-25 |         | 20   | Bhopal  |
| 9   | Rani   | 260    | 16-MAY-23 |         | 30   | Bhopal  |
| 10  | Gaurav | 300    | 15-NOV-25 | 3394    | 40   | Gwalior |

10 rows selected.

SQL> ed c:/oracle/loop7.sql

SQL> @ c:/oracle/loop7.sql

Enter value for cid: 5

old 6: cid:=&cid;

new 6: cid:=5;

Sanjay

Indore

PL/SQL procedure successfully completed.

SQL> ed c:/oracle/loop7.sql

SQL> @ c:/oracle/loop7.sql

Enter value for cid: 6

old 6: cid:=&cid;

new 6: cid:=6;

select cname,city,dept into name,town from customers where cno=cid;

\*

ERROR at line 7:

ORA-06550: line 7, column 40:

PL/SQL: ORA-00947: not enough values

ORA-06550: line 7, column 2:

PL/SQL: SQL Statement ignored

SQL> ed c:/oracle/loop7.sql

SQL> ed c:/oracle/loop8.sql

SQL> @ c:/oracle/loop8.sql

Enter value for cid: 5

old 5: cid:=&cid;

new 5: cid:=5;

```
select * from customers into custdata where cno=cid;  
*
```

ERROR at line 6:

ORA-06550: line 6, column 26:

PL/SQL: ORA-00933: SQL command not properly ended

ORA-06550: line 6, column 2:

PL/SQL: SQL Statement ignored

SQL> ed c:/oracle/loop8.sql

SQL> ed c:/oracle/loop8.sql

SQL> ed c:/oracle/loop87sql

SQL> ed c:/oracle/loop7sql

SQL> ed c:/oracle/loop7.sql

SQL> ed c:/oracle/loop8.sql

SQL> @ c:/oracle/loop8.sql

Enter value for cid: 5

old 5: cid=&cid;

new 5: cid:=5;

```
dbms_output.put_line('Name ' || custdate.cname);  
*
```

ERROR at line 7:

ORA-06550: line 7, column 34:

PLS-00201: identifier 'CUSTDATE.CNAME' must be declared

ORA-06550: line 7, column 2:

PL/SQL: Statement ignored

ORA-06550: line 8, column 34:

PLS-00201: identifier 'CUSTDATE.CITY' must be declared

ORA-06550: line 8, column 2:

PL/SQL: Statement ignored

ORA-06550: line 9, column 40:

PLS-00201: identifier 'CUSTDATE.DEPT' must be declared

ORA-06550: line 9, column 2:

PL/SQL: Statement ignored

SQL> ed c:/oracle/loop8.sql

SQL> @ c:/oracle/loop8.sql

Enter value for cid: 6

old 5: cid=&cid;

new 5: cid:=6;

Name Gourav

City Sagar

Department 20

PL/SQL procedure successfully completed.

SQL> ed c:/oracle/loop8.sql

SQL> @ c:/oracle/loop8.sql

Enter value for cid: 6

old 5: cid=&cid;

new 5: cid:=6;

cid c.cno%type;

\*

ERROR at line 2:

ORA-06550: line 2, column 6:

PLS-00201: identifier 'C.CNO' must be declared

ORA-06550: line 2, column 6:

PL/SQL: Item ignored

ORA-06550: line 3, column 11:

PLS-00201: identifier 'C' must be declared

ORA-06550: line 3, column 11:

PL/SQL: Item ignored

ORA-06550: line 5, column 2:

PLS-00320: the declaration of the type of this expression is incomplete or malformed

ORA-06550: line 5, column 2:

PL/SQL: Statement ignored

ORA-06550: line 6, column 53:

PLS-00320: the declaration of the type of this expression is incomplete or malformed

ORA-06550: line 6, column 53:

PL/SQL: ORA-00904: "CID": invalid identifier

ORA-06550: line 6, column 2:

PL/SQL: SQL Statement ignored

ORA-06550: line 7, column 34:

PLS-00320: the declaration of the type of this expression is incomplete or malformed

ORA-06550: line 7, column 2:

PL/SQL: Statement ignored

ORA-06550: line 8, column 34:

PLS-00320: the declaration of the type of this expression is incomplete or malformed

ORA-06550: line 8, column 2:

PL/SQL: Statement ignored

ORA-06550: line

SQL> ed c:/oracle/loop8.sql

SQL> ed c:/oracle/loop9.sql

```
SQL> @ c:/oracle/loop8.sql
Enter value for cid: 3
old 5:      cid:=&cid;
new 5:      cid:=3;
Name Ajay
City Sagar
Department 10
```

PL/SQL procedure successfully completed.

```
SQL> @ c:/oracle/loop9.sql
Enter value for cid: 3
old 5:      cid:=&cid;
new 5:      cid:=3;
Enter value for phone: 987
old 9:      phone:=&phone;
new 9:      phone:=987;
Phone No Updated!!
```

PL/SQL procedure successfully completed.

```
SQL> select * from customers;
```

| CNO | CNAME  | AMOUNT | DOJ       | CONTACT | DEPT | CITY    |
|-----|--------|--------|-----------|---------|------|---------|
| 1   | Ravi   | 495    | 10-APR-20 | 9983    | 10   | Indore  |
| 2   | Sumit  | 715    | 13-APR-20 | 8832    | 20   | Sagar   |
| 3   | Ajay   | 165    | 30-SEP-22 | 987     | 10   | Sagar   |
| 4   | Vijay  | 935    | 15-FEB-23 |         | 30   | Indore  |
| 5   | Sanjay | 385    | 10-APR-20 |         | 10   | Indore  |
| 6   | Gourav | 55     | 03-NOV-25 |         | 20   | Sagar   |
| 7   | Sourav | 120    | 06-NOV-25 |         | 10   | Sagar   |
| 8   | Raja   | 230    | 04-OCT-25 |         | 20   | Bhopal  |
| 9   | Rani   | 260    | 16-MAY-23 |         | 30   | Bhopal  |
| 10  | Gaurav | 300    | 15-NOV-25 | 3394    | 40   | Gwalior |

10 rows selected.

```
SQL> @ c:/oracle/loop9.sql
Enter value for cid: 1
old 5:      cid:=&cid;
new 5:      cid:=1;
Enter value for phone: 374
old 9:      phone:=&phone;
new 9:      phone:=374;
```

PL/SQL procedure successfully completed.

```
SQL> select * from customers;
```

| CNO | CNAME  | AMOUNT | DOJ       | CONTACT | DEPT | CITY    |
|-----|--------|--------|-----------|---------|------|---------|
| 1   | Ravi   | 495    | 10-APR-20 | 9983    | 10   | Indore  |
| 2   | Sumit  | 715    | 13-APR-20 | 8832    | 20   | Sagar   |
| 3   | Ajay   | 165    | 30-SEP-22 | 987     | 10   | Sagar   |
| 4   | Vijay  | 935    | 15-FEB-23 |         | 30   | Indore  |
| 5   | Sanjay | 385    | 10-APR-20 |         | 10   | Indore  |
| 6   | Gourav | 55     | 03-NOV-25 |         | 20   | Sagar   |
| 7   | Sourav | 120    | 06-NOV-25 |         | 10   | Sagar   |
| 8   | Raja   | 230    | 04-OCT-25 |         | 20   | Bhopal  |
| 9   | Rani   | 260    | 16-MAY-23 |         | 30   | Bhopal  |
| 10  | Gaurav | 300    | 15-NOV-25 | 3394    | 40   | Gwalior |

10 rows selected.

SQL> ed c:/oracle/loop9.sql

SQL> @ c:/oracle/loop9.sql

Enter value for cid: 1

old 5: cid:=&cid;

new 5: cid:=1;

Enter value for phone: 11

old 9: phone:=&phone;

new 9: phone:=11;

PL/SQL procedure successfully completed.

SQL> select \* from customers;

| CNO | CNAME  | AMOUNT | DOJ       | CONTACT | DEPT | CITY    |
|-----|--------|--------|-----------|---------|------|---------|
| 1   | Ravi   | 495    | 10-APR-20 | 9983    | 10   | Indore  |
| 2   | Sumit  | 715    | 13-APR-20 | 8832    | 20   | Sagar   |
| 3   | Ajay   | 165    | 30-SEP-22 | 987     | 10   | Sagar   |
| 4   | Vijay  | 935    | 15-FEB-23 |         | 30   | Indore  |
| 5   | Sanjay | 385    | 10-APR-20 |         | 10   | Indore  |
| 6   | Gourav | 55     | 03-NOV-25 |         | 20   | Sagar   |
| 7   | Sourav | 120    | 06-NOV-25 |         | 10   | Sagar   |
| 8   | Raja   | 230    | 04-OCT-25 |         | 20   | Bhopal  |
| 9   | Rani   | 260    | 16-MAY-23 |         | 30   | Bhopal  |
| 10  | Gaurav | 300    | 15-NOV-25 | 3394    | 40   | Gwalior |

10 rows selected.

SQL> ed c:/oracle/loop9.sql

SQL> @ c:/oracle/loop9.sql

Enter value for cid: 1

old 5: cid:=&cid;

new 5: cid:=1;

```
Enter value for phone: 1
old 10:          phone:=&phone;
new 10:          phone:=1;
      dbms.output.put_line('Current phone no ' || phone);
      *
```

```
ERROR at line 7:
ORA-06550: line 7, column 2:
PLS-00201: identifier 'DBMS.OUTPUT' must be declared
ORA-06550: line 7, column 2:
PL/SQL: Statement ignored
```

```
SQL> ed c:/oracle/loop9.sql
```

```
SQL> @ c:/oracle/loop9.sql
Enter value for cid: 1
old 5:          cid:=&cid;
new 5:          cid:=1;
Enter value for phone: 1
old 9:          phone:=&phone;
new 9:          phone:=1;
Contact no already exists
```

PL/SQL procedure successfully completed.

```
SQL> ed c:/oracle/loop9.sql
```

```
SQL> @ c:/oracle/loop9.sql
Enter value for cid: 5
old 5:          cid:=&cid;
new 5:          cid:=5;
Enter value for phone: 55
old 9:          phone:=&phone;
new 9:          phone:=55;
Enter value for cid: 11
old 14:         cid=&cid;
new 14:         cid=11;
              cid=11;
              *
```

```
ERROR at line 14:
ORA-06550: line 14, column 6:
PLS-00103: Encountered the symbol "=" when expecting one of the following:
:= . ( @ % ;
The symbol ":= was inserted before "=" to continue.
```

```
SQL> ed c:/oracle/loop9.sql
```