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ORACLE DATATYPES

Datatypes are used for specifying what type of data a column in table can hold.

Oracle provides different categories of datatypes as below:

Numeric

- **int / integer**
- **float or float()**
- **number or number(p,s) or number(p)**

precision refers to total number of digits in the number

scale refers to number of digits to be present after decimal point in number

example: 123.456

precision /p - 6

scale /s - 3

Character**Fixed length characters**

- **char or Char()**
- **Nchar**

Example

Name char(15)

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Name | Ram | remaining 12 spaces will not be free i.e. occupied by Name

Variable length characters

- Varchar()
- Nvarchar()
- Nvarchar2()

Example

Name Varchar(15)

Name | Ram remaining 12 spaces will be free i.e. not occupied by Nam

Varchar2()

Note:

- () contains the limit of characters
- N refers to national character set / unicode character

Date and Time

- Date

Default format

'dd-mon-yyyy'

Or

'dd/mon/yyyy'

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Example

'12-Jan-2025'

- Timestamp

Default format

'dd-mon-yyyy hour:min:seconds:mseconds'

Example:

'26-Jan-2025 05:45:15:500'

Large object character set – Clob | Nclob

Binary datatypes – Blob | raw

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Example

SQL*Plus: Release 10.2.0.1.0 - Production on Fri May 2 16:24:11 2025

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```
SQL> connect system/pwd;
```

Connected.

```
SQL> create user User_H2 identified by uh2;
```

User created.

```
SQL> connect User_H2/uh2;
```

ERROR:

ORA-01045: user USER_H2 lacks CREATE SESSION privilege; logon denied

Warning: You are no longer connected to ORACLE.

```
SQL> connect system/pwd;
```

Connected.

```
SQL> grant connect to user_H1;
```

Grant succeeded.

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```
SQL> connect User_H2/uh2;
```

Connected.

```
SQL> create table student(sid integer,sname varchar(15),scourse varchar(10),startDate date);
```

Table created.

```
SQL> select * from student;
```

no rows selected

```
SQL> insert into student values (1,'Ram','SQL','12-Jan-2025');
```

1 row created.

```
SQL> select * from student;
```

SID	SNAME	SCOURSE	STARTDATE
1	Ram	SQL	12-JAN-25

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```
SQL> insert into student values (&sid,&sname,&scourse,&startDate);
```

Enter value for sid: 2

Enter value for sname: 'Sam'

Enter value for scourse: 'Java'

Enter value for startdate: '15-Feb-2025'

old 1: insert into student values (&sid,&sname,&scourse,&startDate)

new 1: insert into student values (2,'Sam','Java','15-Feb-2025')

1 row created.

```
SQL> /
```

Enter value for sid: 3

Enter value for sname: 'Priya'

Enter value for scourse: 'C'

Enter value for startdate: '25-Mar-2025'

old 1: insert into student values (&sid,&sname,&scourse,&startDate)

new 1: insert into student values (3,'Priya','C','25-Mar-2025')

1 row created.

```
SQL> /
```

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Enter value for sid: 4

Enter value for sname: 'Sonam'

Enter value for scourse: 'Dotnet'

Enter value for startdate: '18-may-2025'

old 1: insert into student values (&sid,&sname,&scourse,&startDate)

new 1: insert into student values (4,'Sonam','Dotnet','18-may-2025')

1 row created.

```
SQL> select * from student;
```

SID	SNAME	SCOURSE	STARTDATE
1	Ram	SQL	12-JAN-25
2	Sam	Java	15-FEB-25
3	Priya	C	25-MAR-25
4	Sonam	Dotnet	18-MAY-25

```
SQL> insert into student values (5,'sriRam','SQL');
```

```
insert into student values (5,'sriRam','SQL')
```

*

ERROR at line 1:

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ORA-00947: not enough values

```
SQL> insert into student(sid,sname,scourse) values (5,'sriRam','SQL');
```

1 row created.

```
SQL> insert into student(sid,sname,scourse) values (&sid,&sname,&scourse);
```

Enter value for sid: 6

Enter value for sname: 'ramesh'

Enter value for scourse: 'java'

old 1: insert into student(sid,sname,scourse) values (&sid,&sname,&scourse)

new 1: insert into student(sid,sname,scourse) values (6,'ramesh','java')

1 row created.

```
SQL> select * from student;
```

SID	SNAME	SCOURSE	STARTDATE
1	Ram	SQL	12-JAN-25
2	Sam	Java	15-FEB-25
3	Priya	C	25-MAR-25
4	Sonam	Dotnet	18-MAY-25
5	sriRam	SQL	
6	ramesh	java	

6 rows selected.

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Update with parameters

```
SQL> update student set startDate=&startDate where sid=5;
```

Enter value for startdate: '19-Mar-2024'

old 1: update student set startDate=&startDate where sid=5

new 1: update student set startDate='19-Mar-2024' where sid=5

1 row updated.

```
SQL> /
```

Enter value for startdate: '19-Mar-2024'

old 1: update student set startDate=&startDate where sid=5

new 1: update student set startDate='19-Mar-2024' where sid=5

1 row updated.

```
SQL> update student set startDate=&startDate where sid=6;
```

Enter value for startdate: '19-Feb-2023'

old 1: update student set startDate=&startDate where sid=6

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new 1: update student set startDate='19-Feb-2023' where sid=6

1 row updated.

```
SQL> select * from student;
```

SID	SNAME	SCOURSE	STARTDATE
1	Ram	SQL	12-JAN-25
2	Sam	Java	15-FEB-25
3	Priya	C	25-MAR-25
4	Sonam	Dotnet	18-MAY-25
5	sriRam	SQL	19-MAR-24
6	ramesh	java	19-FEB-23

6 rows selected.

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```
Select Run SQL Command Line
SQL> delete from student where sid=&sid;
Enter value for sid: 6
old 1: delete from student where sid=&sid
new 1: delete from student where sid=6

1 row deleted.

SQL> select * from student;

      SID SNAME      SCOURSE      STARTDATE
-----
      1 Ram        SQL        12-JAN-25
      2 Sam        Java       15-FEB-25
      3 Priya       C         25-MAR-25
      4 Sonam      Dotnet     18-MAY-25
      5 sriRam     SQL       19-MAR-24

SQL> delete from student where sid=&sid;
Enter value for sid: 5
old 1: delete from student where sid=&sid
new 1: delete from student where sid=5

1 row deleted.

SQL> /
Enter value for sid: 4
old 1: delete from student where sid=&sid
new 1: delete from student where sid=4

1 row deleted.
```

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```
Select Run SQL Command Line
Enter value for sid: 5
old 1: delete from student where sid=&sid
new 1: delete from student where sid=5

1 row deleted.

SQL> /
Enter value for sid: 4
old 1: delete from student where sid=&sid
new 1: delete from student where sid=4

1 row deleted.

SQL> select * from student;

  SID SNAME      SCOURSE  STARTDATE
-----
    1 Ram        SQL      12-JAN-25
    2 Sam        Java     15-FEB-25
    3 Priya      C        25-MAR-25

SQL> /

  SID SNAME      SCOURSE  STARTDATE
-----
    1 Ram        SQL      12-JAN-25
    2 Sam        Java     15-FEB-25
    3 Priya      C        25-MAR-25

SQL>
```