

Functions in oracle:

- > To Perform Task & Must Return Value.
- > Oracle Supports Two Types Functions. Those Are

- 1) Pre-Define / Built in Functions (Use in Sql & Pl/Sql)
- 2) User Define Functions (Use in Pl/Sql)

1) Pre-Define Functions:

- > These Are Again Classified into Two Categories.

- A) Single Row Functions (Scalar Functions)
- B) Multiple Row Functions (Grouping Functions)

Single Row Functions:

- > These Functions Are Returns A Single Row (Or) A Single Value.

- > Numeric Functions
- > String Functions
- > Date Functions
- > Conversion Functions

How To Call a Function:

Syntax:

Select <Fname>(Values) From Dual;

What Is Dual:

- > Pre-Define Table In Oracle.
- > Having Single Column & Single Row
- > Is Called As Dummy Table In Oracle.
- > Testing Functions (Pre-Define & User Define) Functionalities.

To View Strc.Of Dual Table:

Sql> Desc Dual;

To View Data Of Dual Table:

Sql> Select * From Dual;

Numeric Functions:

1) Abs():

> Converts (-Ve) Value Into (+Ve) Value.

Syntax:

Abs(Number)

Ex:

Sql> Select Abs(-12) From Dual; -----> 12

Sql> Select Ename,Sal,Comm,Abs(Comm-Sal) From Emp;

2) Ceil():

> Returns A Value Which Is Greater Than Or Equal To Given Value.

Syntax:

Ceil(Number)

Ex:

Sql> Select Ceil(9.0) From Dual;-----9

Sql> Select Ceil(9.3) From Dual;-----10

3) Floor():

Syntax:

Floor(Number)

Ex:

Sql> Select Floor(9.0) From Dual;-----9

Sql> Select Floor(9.8) From Dual;-----9

4) Mod():
Returns Remainder Value.

Syntax:
Mod(M,N)

Ex:
Sql> Select Mod(10,2) From Dual;-----0

5) Power():
The Power Of Given Expression

Syntax:
Power(M,N)

Ex:
Sql> Select Power(2,3) From Dual;-----8

Round():
> Nearest Value Given Expression.

Syntax:
Round(Number,[Decimal Places])

Ex:
Sql> Select Round(5.50) From Dual;-----6
Sql> Select Round(32.456,2) From Dual;-----32.46

Trunc:

> Returns A Value Which Will Specified Number Of Decimal Places.

Syntax:
Trunc(Number,Decimal Places)

Ex:
Sql> Select Trunc(5.50) From Dual;-----5
Sql> Select Trunc(32.456,2) From Dual;----32.45

String Functions:

Length():

> Length Of Given String.

Syntax:

Length(String)

Ex:

Sql> Select Length('Hello') From Dual;-----5

Sql> Select Length('Good Morning') From Dual;-----12

Sql> Select Ename,Length(Ename) From Emp;

Sql> Select * From Emp Where Length(Ename)=4;

Lower():

To Convert Upper Case Char's Into Lower Case Char's.

Syntax:

Lower(String)

Ex:

Sql> Select Lower('Hello') From Dual;

Sql> Update Emp Set Ename=Lower(Ename) Where Job='Clerk';

Upper():

Syntax:

Upper(String)

Ex:

Sql> Select Lower('Hello') From Dual;

Initcap():

To Convert First Char. Is Capital.

Syntax:

Initcap(String)

Ex:

Sql> Select Initcap('Hello') From Dual;

Sql> Select Initcap('Good Morning') From Dual;

Ltrim():

To Remove Unwanted Spaces (Or) Unwanted Characters From Left Side Of Given String.

Syntax:

Ltrim(String1[,String2])

Ex:

Sql> Select Ltrim(' Sai') From Dual;

Sql> Select Ltrim('Xxxxxxsai','X') From Dual;

Sql> Select Ltrim('123SAI','123') From Dual;

Rtrim():

To Remove Unwanted Spaces (Or) Unwanted Characters From Right Side Of Given String.

Syntax:

Rtrim(String1[,String2])

Ex:

Sql> Select Rtrim('Saixxxxxxx','X') From Dual;

Trim():

To Remove Unwanted Spaces (Or) Unwanted Characters From Both Sides Of Given String.

Syntax:

Trim('Trimming Char' From 'String')

Ex:

Sql> Select Trim('X' From 'Xxxxxxsaixxxx') From Dual;

Lpad():

To Fill A String With Specific Char. On Left Side Of Given String.

Syntax:

Lpad(String1,Length,String2)

Ex:

**Sql> Select Lpad('Hello',10,'@') From Dual;
@@@@@Hello**

Rpad():

To Fill A String With Specific Char. On Right Side Of Given String.

Syntax:

Rpad(String1,Length,String2)

Ex:

**Sql> Select Rpad('Hello',10,'@') From Dual;
Hello@@@@@**

Concat():

Adding Two String Expressions.

Syntax:

Concat(String1,String2)

Ex:

Sql> Select Concat('Good','Bye') From Dual;

Replace():

To Replace One String With Another String.

Syntax:

Replace(String1,String2,String3)

Ex:

**Sql> Select Replace('Hello','Ell','Xyz') From Dual;
Hxyzo**

**Sql> Select Replace('Hello','L','Abc') From Dual;
Heabcabco**

Translate():

To Translate A Single Char With Another Single Char.

Syntax:

Translate(String1,String2,String3)

Ex:

**Sql> Select Translate('Hello','Elo','Xyz') From Dual;
Hxyyz**

Sol: E = X , L=Y , O=Z

Hello => Hxyyz

Ex:

**Sql> Select Ename,Sal,Translate(Sal,'0123456789','\$B@Gh*V#T%')
Salary From Emp;**

Ename	Sal	Salary
-----	-----	-----
Smith	800	T\$\$

Sol: 0=\$,1=B,2=@,3=G,4=H,5=*,6=V,7=#,8=T,9=%.

Substr():

It Returns Req.Substring From Given String Expression.

Syntax:

**Substr(String1,<Starting Position Of Char.>,<Length Of
Char's>)**

Ex:

**Sql> Select Substr('Hello',2,3) From Dual;
Ell**

**Sql> Select Substr('Welcome',4,2) From Dual;
Co**

**Sql> Select Substr('Welcome',-6,3) From Dual;
Elc**

Instr():

Returns Occurence Position Of A Char. In The Given String.

Syntax:

**Instr(String1,String2,<Starting Position Of Char.>,<Occurence
Position Of Char.>)**

Ex:

**Sql> Select Instr('Hello Welcome','O') From Dual;-----> 5
Sql> Select Instr('Hello Welcome','Z') From Dual;-----> 0
Sql> Select Instr('Hello Welcome','O',1,2) From Dual;-----11
Sql> Select Instr('Hello Welcome','E',5,2) From Dual;-----13
Sql> Select Instr('Hello Welcome','E',1,4) From Dual;-----8**

Note:

**Position Of Char's Always Fixed Either Count From Left To Right
(Or) Right To Left.**

**Sol: Hello Welcome
12345 6 78910111213**

Ex:

**Sql> Select Instr('Hello Welcome','E',-1,3) From Dual;-----2
Sql> Select Instr('Hello Welcome','L',-4,3) From Dual;-----3
Sql> Select Instr('Hello Welcome','L',-6,3) From Dual;-----0**

Date Functions:

1) Sysdate:

> Current Date Information Of The System.

Ex:

Sql> Select Sysdate From Dual;

Sql> Select Sysdate+10 From Dual;

Sql> Select Sysdate-10 From Dual;

Add_Months():

> Adding No.Of Months To The Date.

Syntax:

Add_Months(Date,<No.Of Months>)

Ex:

Sql> Select Add_Months(Sysdate,3) From Dual;

Sql> Select Add_Months(Sysdate,-3) From Dual;

Last_Day():

> Returns The Last Day Of The Month.

Syntax:

Last_Day(Date)

Ex:

Sql> Select Last_Day(Sysdate) From Dual;

Next_Day():

> Returns The Next Specified Day From The Given Date.

Syntax:

Next_Day(Date,'<Day Name>')

Ex:

```
Sql> Select Next_Day(Sysdate,'Sunday') From Dual;
```

Months_Between():

> Returns No.Of Months Between Two Date Expressions.

Syntax:

Months_Between(Date1,Date2)

Ex:

```
Sql> Select Months_Between('05-Jan-81','05-Jan-80') From Dual;---  
-- 12
```

```
Sql> Select Months_Between('05-Jan-80','05-Jan-81') From Dual;---  
-- -12
```

**Note: Here, Date1 Is Always Greater Than Date2 Otherwise
Oracle Returns Negative Value.**

Conversion Functions:

- 1. To_Char()**
- 2. To_Date()**

To_Char():

> Date Type To Char Type To Display Date In Different Fromat.

Syntax:

To_Char(Date,[<Format>])

Year Formats:

Yyyy	-	2020
Yy	-	20
Year	-	Twenty Twenty
Cc	-	Centuary 21
Ad / Bc	-	Ad Yaer / Bc Year

Ex:

```
Sql> Select To_Char(Sysdate,'Yyyy Yy Year Cc Ad') From Dual;
```

To_Char(Sysdate,'Yyyyyyyyearccad')

2020 20 Twenty Twenty 21 Ad

**Q: To Display Employee Who Are Joined In Year 1982
By Using To_Char() Function ?**

Sol:

Sql> Select * From Emp Where To_Char(Hiredate,'Yyyy')=1982;

**Q: To Display Employee Who Are Joined In Year 1980,1982,1987
By Using To_Char() Function ?**

Sol:

**Sql> Select * From Emp Where To_Char(Hiredate,'Yyyy')
In(1980,1982,1987);**

Month Format:

**Mm - Month Number
Mon - First Three Char From Month Spelling
Month - Full Name Of Month**

Ex:

Sql> Select To_Char(Sysdate,'Mm Mon Month') From Dual;

**To_Char(Sysdate,

08 Aug August**

Sql> Select To_Char(Sysdate,'Mm Mon Month') From Dual;

**To_Char(Sysdate,

08 Aug August**

**Q: To Display Employee Who Are Joined In Feb,May,Dec Months
By Using To_Char() ?**

Sol:

**Sql> Select * From Emp Where To_Char(Hiredate,'Mm')
In(02,05,12);**

**Q: To Display Employee Who Are Joined In Feb 1981
By Using To_Char() ?**

Sol:

**Sql> Select * From Emp Where
To_Char(Hiredate,'Mmyyyy')='021981';**

Day Formats:

**Ddd - Day Of The Year.
Dd - Day Of The Month.
D - Day Of The Week
Sun - 1
Mon - 2
Tue - 3
Wen - 4
Thu - 5
Fri - 6
Sat - 7**

Day - Full Name Of The Day

Dy - First Three Char's Of Day Spelling

Ex:Sql> Select To_Char(Sysdate,'Ddd Dd D Day Dy') From Dual;

To_Char(Sysdate,'Ddddd

220 07 6 Friday Fri

**Q: To Display Employee Who Are Joined On "Friday" By Using
To_Char() ?**

Sol:

Sql> Select * From Emp Where To_Char(Hiredate,'Day')='Friday';

Q: To Display Employee On Which Day Employees Are Joined ?

Sol:

**Sql> Select Ename||' '||'Joined On' ||' '||To_Char(Hiredate,'Day')
From Emp;**

Note:

**In Oracle Whenever We Using To_Char() And Also Within To_Char()
When We use Day / Month Format Then Oracle Server Internally
Allocate Some Extra Memory For Day/Month Format Of Data.**

**To Overcome The Above Problem That Is To Remove Extra
Memory Which Was Allocate By Oracle Server Then We Use A Pre-
Define Specifier Is
Called "Fm" (Fill Mode).**

Ex:

Select * From Emp Where To_Char(Hiredate,'Fmday')='Friday';

Quater Format:

Q - One Digit Quater Of The Year

1 - Jan - Mar

2 - Apr - Jun

3 - Jul - Sep

4 - Oct - Dec

Ex:

Sql> Select To_Char(Sysdate,'Q') From Dual;

T

3

Q : Who Are Joined In 2ND Quater Of 1981 ?

Sol:

**Sql> Select * From Emp Where To_Char(Hiredate,'Yyyy')='1981'
And To_Char(Hiredate,'Q')=2;**

Week Format:

Ww - Week Of The Year

W - Week Of Month

Ex:

Sql> Select To_Char(Sysdate,'Ww W') From Dual;

To_C

32 2

Time Format:

Hh - Hour Part

Hh24- 24 Hrs Fromat

Mi - Minute Part

Ss - Seconds Part

Am / Pm - Am Tme (Or) Pm Time

Ex:

Sql> Select To_Char(Sysdate,'Hh:Mi:Ss Am') From Dual;

To_Char(Sys

12:04:21 Pm

To_Date():

To Convert Char Type To Oracle Date Format Type.

Syntax:

To_Date(String[,Fromat])

Ex:

Sql> Select To_Date('08/August/2020') From Dual;

To_Date('

08-Aug-20

Sql> Select To_Date('08-Aug-2020')+10 From Dual;

To_Date('

18-Aug-20

Multiple Row Functions:

These Functions Returns Either Group Of Values (Or) A Single Value.

Sum():

> It Returns Sum Of A Specific Column Values.

Ex:

Sql> Select Sum(Sal) From Emp;

Sql> Select Sum(Sal) From Emp Where Job='Clerk';

Avg():

> It Returns Average Of A Specific Column Values.

Ex:

Sql> Select Avg(Sal) From Emp;

Sql> Select Avg(Sal) From Emp Where Deptno=10;

Min():

> It Returns Min.Value From Group Of Values.

Ex:

Sql> Select Min(Hiredate) From Emp;

Sql> Select Min(Hiredate) From Emp Where Job='Manager';

Sql> Select Min(Sal) From Emp;

Max():

> It Returns Max.Value From Group Of Values.

Ex:

Sql> Select Max(Sal) From Emp;

Count():

> It Returns No.Of Rows In A Table / No.Of Values In A Column

> Three Types,

I) Count(*)

Ii) Count(<Column Name>)

Iii) Count(Distinct <Column Name>)

Ex:

Test	
Sno	Name
101	A
102	B
103	
104	C
105	A
106	C

Count(*):

> Counting All Rows (Duplicates & Nulls) In A Table.

Ex:

Sql> Select Count(*) From Test;

Count(*)
6

Count(<Column Name>):

> Counting All Values Including Duplicate Values But Not Null Values From A Column.

Ex:

Sql> Select Count(Name) From Test;

Count(Name)
5

Count(Distinct <Column Name>):

> Counting Unique Values From A Column. Here "Distinct" Keyword Is Eliminating Duplicate Values.

Ex:

Sql> Select Count(Distinct Name) From Test;-----> 3