

## 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:

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**Sql> Select \* From Dual;**

### **Numeric Functions:**

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#### **1) Abs():**

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

#### **Syntax:**

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**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:**

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**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():**

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

**Syntax:**

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**Trim('Trimming Char' From 'String')**

**Ex:**

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

**Lpad():**

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

**Syntax:**

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**Lpad(String1,Length,String2)**

**Ex:**

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

**Rpad():**

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**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():**

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**To Replace One String With Another String.**

**Syntax:**

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**Replace(String1,String2,String3)**

**Ex:**

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

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

**Translate():**

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**To Translate A Single Char With Another Single Char.**

### **Syntax:**

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**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():**

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**It Returns Req.Substring From Given String Expression.**

### **Syntax:**

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

### **Ex:**

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

**El**

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

**Co**

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

**Elc**

### **Instr():**

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**Returns Occurrence Position Of A Char. In The Given String.**

### **Syntax:**

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**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:**

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**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:**

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#### **1) Sysdate:**

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**> 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():**

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**> Adding No.Of Months To The Date.**



**Syntax:**

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**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():**

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**> Returns The Last Day Of The Month.**

**Syntax:**

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**Last\_Day(Date)**

**Ex:**

**Sql> Select Last\_Day(Sysdate) From Dual;**

**Next\_Day():**

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**> Returns The Next Specified Day From The Given Date.**

**Syntax:**

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**Next\_Day(Date,'<Day Name>')**

**Ex:**

**Sql> Select Next\_Day(Sysdate,'Sunday') From Dual;**

**Months\_Between():**

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**> Returns No.Of Months Between Two Date Expressions.**

**Syntax:**

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**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:**

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1. To\_Char()
2. To\_Date()

**To\_Char():**

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

**Syntax:**

**To\_Char(Date,[<Format>])**

**Year Formats:**

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**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:**

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**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():**

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**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:**

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

**Sum():**

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**> 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():**

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**> 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():**

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**> 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>):**

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**> 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**