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Dual table :- It is build in table of oracle. which is automatically created by Oracle software. It has one row and one column. Selecting from Dual table is useful for computing an expression with select statement.

eg :-

Select 'Hello'

→ Functions :- * In build function is an expression which use ~~sql~~ SQL keywords and perform special operations. some SQL function to SQL operators that both manipulate data and return a result but SQL function are different from SQL operators in term of format in which they appear. There are two type of build in function -

(1) Single row
(2) Aggregate / group function.

* Single row function :- Single row is single ~~row~~ means they return result in single row.

type of function → • Number function
• Character function
• Date function.

1. Number function :- These functions accept numeric input and return numeric value. Some of the number function are -

* ABS(n) :- (Absolute) This function is used to return the absolute value of given number.

for eg → Select ABS(-15) As Absolute from Dual

O/P →

Absolute
15

* CEIL(n) function :- This function return rid highest or greater than or equal to number pass through the function.

- Syntax :- Select ceil (15.4) As Number from dual;

O/P →

Number
16

* Floor(n) :- This function return integer number equal to or less than number pass through the function.

- Eg :- Select floor (15.4) As number from dual;

O/P →

Number
15

* MOD(n/m) :- This function return remainder and return n if n is zero.

- Eg :- (i) Select mod (15/2) As remainder from dual;

O/P →

Remainder
0

(ii) Select mod (5/15) As remainder from dual;

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O/P →

Remainder
3

* Power (n,m) :- This function will return n^m value

• eg :- Select Power(3,2) As power from dual;

O/P →

Power
$3^2 = 9$

* SIN(Θ) :- This function will return of angle sin in ~~return~~ radian.

• eg :-

Select sin(45) As Angle from dual

SIN(Θ)
$\frac{1}{\sqrt{2}}$

function

• Single row character accept character as input and function return letter character or numeric value

1. CHR(X) :- This function will return character having binary equivalent to X in either database character or national character set.

• for example :-

Select chr(97) as character from dual;

97 → a
98 → b
99 → c

O/P →

a

2. CONCAT(C1,C2) :- This used to combine the string where C1 and C2 or the character strings.

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It contains same result as using the concatenation operation.

- For example -

select CONCAT ('GHG', 'Khosla college') as string from dual;

Select CONCAT ('My Name is', name) from student_data where roll no=102;

O/p → My Name is Chatan;

3. INITCAP (X):- This function returns character with first letter of each word in uppercase and all other in a lower case.

- Eg:-

Select INITCAPE ('Chatan', 'akash') Letter from dual;

O/p → Chatan Akash

4. LOWER(X):- This function returns character of given word in lowercase.

- Eg:-

Select lower ('AKASH') as letter from dual;

O/p → AKASH

5. UPPER (X):- This function return character of given word in an upper case.

- Eg:-

Select Upper ('Akash') As letter from dual

O/p → AKASH

(20) 6. LENGTH(X):- This function is used to get the length of given string.

- eg :-

Select length ('Ajay Kumar') As length from dual;

space is also include

O/P →

length
10

7. ASCII (X) :- This function return ascii decimal equivalent to a given character. It is a inverse operation of CH.or function

- eg :-

Select ASCII(a) As a, ASCII(b) As b from dual;

O/P →

a	b
97	98

left string remove

8. LTRIM (c_1, c_2) :- This function remove the character from left of string i.e The left most character that appear in string is remove.

- For example:-

Select LTRIM ('GHG Khalsa', 'GHG') from dual;
(c_1) (c_2)

right string remove
O/P → Khalsa

9. RTRIM(c_1, c_2) :- This function remove the character from string c_1 according to character c_2 ie, it remove the character from right side of string c_1.

- eg :- Select RTRIM ('GHG Khalsa', 'Khalsa') from dual;
(c_1) (c_2)

O/P → GHG

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10. TRIM (X) :- It remove all the blank spaces from left side as well right side of a string.

eg :-
TRIM (' GHG Khalsa ') from dual;
(left string, right string)

O/p → GHG Khalsa.

3. Date function :-

1. Sysdate :- This function does not take any argument and return current date of a system. The default format

(It return current date of system)

eg :-

Day - Month - Year

→ • select sysdate from dual;
• select sysdate+1 from dual;
• select sysdate-1 from dual;

2. Add_Month (d, i) :- This function return the date plus i month.

for example -

(i) Select sysdate, Add_month (sysdate, 3) As Newdate from dual;

O/p →

Sysdate	Newdate
4 sep 2023	4 Dec 2023

3. Last_Day(d) :- This function return the last day of the month for the given day d.

- eg:-

(i) Select Sysday last_Day (sysdate) As LastDay from dual;

Sysdate	Last Day
4 Nov 2023	30-Sep 2023

(ii) Select Sysday Last_Day (sysdate) +1 As LastDay from dual;

O/P Sysdate Last Day
4 Nov 2023 01 Oct 2023

4. Current_date :- It is same as sysdate function

5. Current_Timestamp :- This function will return the date with time zone.

- eg:-

select Current_timestamp from dual;

Aggrigate / Group :- group function return result based on group of rows rather than single row. You can use aggrigation function in select command with order by clause having clause some of aggrigate functions are. -

1. Sum()
2. Avg()
3. Min()
4. Max()
5. Count()

ename	Salary	dept Name	dept ID
Akash	10,000	BCA	10
Amit	20,000	BCA	10
Suraj	15,000	PGDCA	20
Rahul	15,000	BSc	30
Yogesh	20,000	BSc	30
Ajay	null	BSc	30

department

* Sum( ) :-

- for example → list the total salary OR all departments
- Syntax :- select Sum(Salary) As Total_Salary from department

O/p →

Total_Salary
80,000

* Avg( ) :-

- For example :- list the average salary of all employee in department table.
- Syntax → select Avg(Salary) As Avg_salary from department;

O/p →

Avg_Salary
$\frac{80,000}{5} = 16,000$

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* Min( ) :-

- For eg → list the minimum salary of employee.
- Syntax → select min (salary) As min salary from department ;

O/p →

min_salary
10,000

* Max( ) :-

- For eg. : list the highest salary of an employee
- Syntax : select max(salary) As max_salary from department ;

O/p →

max_salary
20,000

* Count( ) :- This ~~you~~ return no. of rows that match a specified criteria. If you specify * (asteric) this fn will return all the rows including duplicate and null other wise count function will skip the null value.

- Syntax → select count * from department ;

O/p →

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