ARITHMETIC FUNCTIONS

ABS(n)

- This function returns the absolute value of the column or value passed

CEIL(n)

- It finds the smallest integer greater than or equal to n. ‘n’ can be a column name also

FLOOR(n)

- It finds the largest integer less than or equal to n. ‘n’ can be a column or expression

MOD(m,n)

- It returns the remainder of m divided by n, or m if n=0

POWER(m,n)

- This function returns ‘m’ raised to the power n. The second argument ‘n’ must be an integer

SIGN(n)

- It return ’-1’ if ‘n’ is negative, returns ‘1’ if ‘n’ is positive and returns ‘0’ if ‘n’ is zero

SQRT(n)

- It returns the square root of n. If ‘n’ is ‘null’ or negative then null is returned

ROUND(n,m)

- Returns number n rounded to ‘m’ decimal places

TRUNC(n,m)

- Returns ‘n’ truncated to ‘m’ decimal places

Example:

SELECT abs(-65.8), ceil(65.8), floor(65.8), mod(10,3), power(2,3) FROM dual

ABS(-65.8)	CEIL(65.8)	FLOOR(65.8)	MOD(10,3)	POWER(2,3)
65.8	66	65	1	8

SELECT sign(-10), sqrt(25), round(12.32567,2), trunc(12.32567,2) FROM dual

SIGN(-10)	SQRT(25)	ROUND(12.32567,2)	TRUNC(12.32567,2)
-1	5	12.33	12.32

Note: The dual table is used in Oracle when you need to run SQL that does not logically have a table name. It consists of exactly one column whose name is **dummy** and one **record**

select * from dual;

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STRING FUNCTIONS

ASCII(string)

- Returns ASCII code of the first character of a string

CHR(number)

- Returns character for the ASCII code

CONCAT(string1, string2)

- Returns result of concatenation of two strings

INSTR(string, substring, startposition, occurrence)

- Returns position of an occurrence of a substring within the string

SUBSTR(string,n)

- Returns number of characters starting from ‘n’

LENGTH(string)

- Returns number of characters in a string

LENGTHB(column)

- Returns number of bytes in the column, which could be any data type

LOWER(string)

- Converts all characters in a string to lower case

LPAD(string1,n,string2)

- Returns string1 padded from the left with string2 (total length ‘n’)

LTRIM(string,set)

- Trims characters up to the first character not in set from left side

REPLACE(string2,string1,string3)

- Replace all occurrences of string1 within string2 with string3

RTRIM(string,set)

- Trims characters from the right side up to last character not in set

RPAD(string1,n,string2)

- Returns string1 padded from the right with string2 (total length ‘n’)

SUBSTR(string,n,m)

- Returns a part of a string starting from n^{th} character for the length of ‘m’ characters

TRANSLATE(string1,string2,string3)

- Replaces the occurrence of string2 in string1, with the corresponding character of string3

UPPER(string)

- Converts all characters of a string into uppercase

INITCAP(string)

- Converts first character of a string into uppercase, if it is not already an upper case letter

Example

```
SELECT sname, length(sname) LEN,
              concat(sname,sid) CONCAT,
               substr(sname,2) SUBSTR,
               lower(sname) LOWER, upper(sname) UPPER
  FROM sailors
```

SNAME	LEN	CONCAT	SUBSTR	LOWER	UPPER
Brutus	6	Brutus29	rutus	brutus	BRUTUS
Lubber	6	Lubber31	ubber	lubber	LUBBER
Andy	4	Andy32	ndy	andy	ANDY
Rusty	5	Rusty58	usty	rusty	RUSTY
Horatio	7	Horatio64	oratio	horatio	HORATIO
Zorba	5	Zorba71	orba	zorba	ZORBA
Horatio	7	Horatio74	oratio	horatio	HORATIO
Art	3	Art85	rt	art	ART
Bob	3	Bob95	ob	bob	BOB
Dustin	6	Dustin22	ustin	dustin	DUSTIN

```
SELECT sname NAME,ltrim(sname,'B') LTRIM,
       rtrim(sname,'y') RTRIM,
       replace(sname,'a','b') REPL,
       translate(sname,'abcd','wxyz') TRNS
 FROM sailors
```

NAME	LTRIM	RTRIM	REPL	TRNS
Brutus	rutus	Brutus	Brutus	Brutus
Lubber	Lubber	Lubber	Lubber	Luxxer
Andy	Andy	And	Andy	Anzy
Rusty	Rusty	Rust	Rusty	Rusty
Horatio	Horatio	Horatio	Horbtio	Horwtio
Zorba	Zorba	Zorba	Zorbb	Zorxw
Horatio	Horatio	Horatio	Horbtio	Horwtio
Art	Art	Art	Art	Art
Bob	ob	Bob	Bob	Box
Dustin	Dustin	Dustin	Dustin	Dustin

DATE AND TIME FUNCTIONS

ADD_MONTHS(date,n)

- It adds ‘n’ months to date

CURRENT_DATE

- Returns current date

CURRENT_TIMESTAMP(Precision)

- Returns current date and time

To_Date(value,format)

- Converts value to a specific format

MONTHS_BETWEEN(date1, date2)

- Calculate difference between two dates

Extract(datetime)

- Returns requested date part (day,month,year)

To_char(date,'format')

- Converts date to a specific format

Example

SELECT current_date,current_timestamp FROM dual

CURRENT_DATE	CURRENT_TIMESTAMP
16-FEB-10	16-FEB-10 10.50.34.359000 PM +05:30

```
SELECT add_months(current_date,5) ADD_MONTHS,
       months_between(current_date,'12-jan-05')
FROM dual
```

ADD_MONTHS	MONTHS_BETWEEN(CURRENT_DATE,'12-JAN-05')
16-JUL-10	61.1598951

```
SELECT extract(month from current_date) EXTRACT
FROM dual
```

EXTRACT
2

SELECT to_char(current_date,'mon dd yyyy') TOCHAR FROM dual

TOCHAR
feb 16 2010

SELECT to_date('jan 14 2006','mon dd yyyy') TODATE FROM dual

TODATE
14-JAN-06

GENERAL FUNCTIONS

Cast (fieldname as datatype)

- Converts one datatype into another compatible datatype

Example:

select sid,sname,cast(sid as varchar2(10)) from sailors

SID	SNAME	CAST(SIDASVARCHAR2(10))
22	Dustin	22
29	Brutus	29
31	Lubber	31
32	Andy	32
58	Rusty	58
64	Horatio	64
71	Zorba	71
74	Horatio	74
85	Art	85
95	Bob	95

NULLIF(Value1, Value2)

- Compares two values, if they are equal (or one of them is null), returns NULL, otherwise the value1 is returned

Example:

select * from cal

ID
10
20

select nullif(id,10) from cal

NULLIF(ID,10)
20

NVL(Value1, Value2)

- Checks whether Value1 is null or not. If it is null it returns value2, otherwise it returns value1

Example:

select * from cal

ID
10
20

select nvl(id,88) from cal

NVL(ID,88)
10
88
20

NVL2(Value1,value2,value3)

- If the value1 is null, it returns value3,otherwise it returns value2

Example:

select * from cal

ID
10
20

select nvl2(id,66,88) from cal

NVL2(ID,66,88)
66
88
66

DECODE(columnname,'value 1','new value1','value 2','new value2'……..)

- Decode works as ‘Case Statement’ in the C Language

Example:

select sid,decode(sid,22,'A',31,'B','ZZ') as result from sailors

SID	RESULT
22	A
29	ZZ
31	B
32	ZZ
58	ZZ
64	ZZ
71	ZZ
74	ZZ
85	ZZ
95	ZZ