



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING-IOT Including CS&BCT
UNIT-II**

NUMERIC FUNCTIONS

Numeric Functions are used to perform operations on numbers and return numbers. Following are the numeric functions defined in SQL:

ABS(): It returns the absolute value of a number.

Syntax: SELECT ABS(-243.5);

Output: 243.5

SQL> SELECT ABS(-10);

```
+-----+
| ABS(10)
+-----+
| 10
+-----+
```

ACOS(): It returns the cosine of a number.

Syntax: SELECT ACOS(0.25);

Output: 1.318116071652818

ASIN(): It returns the arc sine of a number.

Syntax: SELECT ASIN(0.25);

Output: 0.25268025514207865

ATAN(): It returns the arc tangent of a number.

Syntax: SELECT ATAN(2.5);

Output: 1.1902899496825317

CEIL(): It returns the smallest integer value that is greater than or equal to a number.

Syntax: SELECT CEIL(25.75);

Output: 26

CEILING(): It returns the smallest integer value that is greater than or equal to a number.

Syntax: SELECT CEILING(25.75);

Output: 26

COS(): It returns the cosine of a number.



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Syntax: SELECT COS(30);

Output: 0.15425144988758405

COT(): It returns the cotangent of a number.

Syntax: SELECT COT(6);

Output: -3.436353004180128

DEGREES(): It converts a radian value into degrees.

Syntax: SELECT DEGREES(1.5);

Output: 85.94366926962348

SQL>SELECT DEGREES(PI());

+-----+

| DEGREES(PI())

+-----+

| 180.000000

+-----+

DIV(): It is used for integer division.

Syntax: SELECT 10 DIV 5;

Output: 2

EXP(): It returns e raised to the power of number.

Syntax: SELECT EXP(1);

Output: 2.718281828459045

FLOOR(): It returns the largest integer value that is less than or equal to a number.

Syntax: SELECT FLOOR(25.75);

Output: 25

GREATEST(): It returns the greatest value in a list of expressions.

Syntax: SELECT GREATEST(30, 2, 36, 81, 125);

Output: 125

LEAST(): It returns the smallest value in a list of expressions.

Syntax: SELECT LEAST(30, 2, 36, 81, 125);



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Output: 2

LN(): It returns the natural logarithm of a number.

Syntax: SELECT LN(2);

Output: 0.6931471805599453

DATE FUNCTIONS

In SQL, dates are complicated for newbies, since while working with database, the format of the date in table must be matched with the input date in order to insert. In various scenarios instead of date, datetime (time is also involved with date) is used.

NOW(): Returns the current date and time.

Example:

SELECT NOW();

Output:

2017-01-13 08:03:52

CURDATE(): Returns the current date. Example:

SELECT CURDATE();

Output:

2017-01-13

CURTIME(): Returns the current time. Example:

SELECT CURTIME();

Output:

08:05:15

DATE(): Extracts the date part of a date or date/time expression.

Example:

For the below table named ‘Test’

Id Name BirthTime

4120 Pratik 1996-09-26 16:44:15.581

SELECT Name, DATE(BirthTime) AS BirthDate FROM Test;

Output:



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Name BirthDate

Pratik 1996-09-26

EXTRACT(): Returns a single part of a date/time. Syntax:

EXTRACT(unit FROM date);

There are several units that can be considered but only some are used such as:

MICROSECOND, SECOND, MINUTE, HOUR, DAY, WEEK, MONTH, QUARTER, YEAR, etc.

And ‘date’ is a valid date expression.

Example:

For the below table named ‘Test’

Id	Name	BirthTime
4120	Pratik	1996-09-26 16:44:15.581

Queries

SELECT Name, Extract(DAY FROM BirthTime) AS BirthDay FROM Test;

Output:

Name BirthDay

Pratik 26

SELECT Name, Extract(YEAR FROM BirthTime) AS BirthYear FROM Test;

Output:

Name BirthYear

Pratik 1996

SELECT Name, Extract(SECOND FROM BirthTime) AS BirthSecond FROM Test;

Output:

Name BirthSecond

Pratik 581

DATE_ADD() : Adds a specified time interval to a date

Syntax:

DATE_ADD(date, INTERVAL expr type);



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Where, date – valid date expression and expr is the number of interval we want to add.

and type can be one of the following:

MICROSECOND, SECOND, MINUTE, HOUR, DAY, WEEK, MONTH, QUARTER, YEAR, etc.

Example:

For the below table named ‘Test’

Id	Name	BirthTime
4120	Pratik	1996-09-26 16:44:15.581

DATE_FORMAT(): Displays date/time data in different formats.Syntax:

DATE_FORMAT(date,format);

date is a valid date and format specifies the output format for the date/time.

STRING FUNCTIONS

It is used to perform an operation on input string and return an output string.

Following are the string functions defined in SQL:

ASCII(): This function is used to find the ASCII value of a character.

Syntax: SELECT ascii('t');

Output: 116

CHAR_LENGTH(): Doesn't work for SQL Server. Use LEN() for SQL Server. This function is used to find the length of a word.

Syntax: SELECT char_length('Hello!');

Output: 6

CHARACTER_LENGTH(): Doesn't work for SQL Server. Use LEN() for SQL Server. This function is used to find the length of a line.

Syntax: SELECT CHARACTER_LENGTH(sns');

Output: 15

CONCAT(): This function is used to add two words or strings.

Syntax: SELECT 'Sns' || ' ' || 'forSns' FROM dual;

Output: ‘SnsforSns’



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CONCAT_WS(): This function is used to add two words or strings with a symbol as concatenating symbol.

Syntax: SELECT CONCAT_WS('_', 'sns', 'for', 'sns');

Output: sns_for_sns

FIND_IN_SET(): This function is used to find a symbol from a set of symbols.

Syntax: SELECT FIND_IN_SET('b', 'a, b, c, d, e, f');

Output: 2

FORMAT(): This function is used to display a number in the given format.

Syntax: Format("0.981", "Percent");

Output: '98.10%'

INSERT(): This function is used to insert the data into a database.

Syntax: INSERT INTO database (geek_id, geek_name) VALUES (5000, 'abc');

Output: successfully updated

INSTR(): This function is used to find the occurrence of an alphabet.

Syntax: INSTR(sns, 'e');

Output: 2 (the first occurrence of 'e')

Syntax: INSTR(sns, 'e', 1, 2);

Output: 3 (the second occurrence of 'e')

LCASE(): This function is used to convert the given string into lower case.

Syntax: LCASE ("SnsFor Sns To Learn");

Output: snsforsns to learn