

SQL Functions – Date Functions

Date Functions

Date functions operate on values of the DATE datatype. Most date functions return a value of DATE datatype. The functions MONTHS_BETWEEN function and EXTRACT function return numbers.

The below data functions are explained in this document:

- ▼ add_months
- ▼ extract
- ▼ sysdate
- ▼ months_between
- ▼ last_day
- ▼ next_day

ADD_MONTHS

The general syntax of `add_months` is:

```
ADD_MONTHS( Date, Number)
```

Parameter	Description
Date	A value of the Date data type
Number	An integer that represents a number of months.

`Add_months(d,n)` adds the specified number of months n to the specified date d and returns the resulting date.

If the day component of argument d is the last day of the month, or if the resulting month has fewer days than the day component of d , then `ADD_MONTHS` returns the last day of the resulting month. Otherwise, `ADD_MONTHS` returns a value that has the same day component as d .

ADD_MONTHS

```
SQL> desc Date_Sample;
```

Name	Null?	Type
DATE_KEY		CHAR(10)
DATE_VALUE		DATE

```
SQL> select * from Date_Sample;
```

DATE_KEY	DATE_VALUE
100000001	14-SEP-08

```
SQL> select Date_Value, Add_Months(Date_Value, 5) Result  
2 From Date_Sample;
```

DATE_VALUE	RESULT
14-SEP-08	14-FEB-09

EXTRACT

The extract function extracts or returns a specified datetime field from a date or an interval value expression.

The syntax of extract function is:

```
EXTRACT ( { YEAR | MONTH | DAY | HOUR | MINUTE | SECOND } | { TIMEZONE_HOUR |  
TIMEZONE_MINUTE } | { TIMEZONE_REGION | TIMEZONE_ABBR } FROM { date_value |  
interval_value } )
```

```
SQL> select Date_Value,  
2 Extract<Day From Date_Value> Day,  
3 Extract<Month From Date_Value> Month,  
4 Extract<Year From Date_Value> Year  
5 from Date_Sample;
```

DATE_VALU	DAY	MONTH	YEAR
14-SEP-08	14	9	2008

SYSDATE

In Oracle, the sysdate function returns the current system date and time on your local database.

The syntax for the sysdate function is:

SYSDATE

```
SQL> select Date_Value, SYSDATE  
2 From Date_Sample;
```

```
DATE_VALU SYSDATE  
-----  
14-SEP-08 26-MAY-14
```



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MONTHS_BETWEEN

In Oracle, the months_between function returns the number of months between date1 and date2.

The general syntax of months_between is:

```
MONTHS_BETWEEN( date1, date2 )
```

Parameter	Description
Date1	Dates used to calculate the number of months
Date2	Dates used to calculate the number of months

MONTHS_BETWEEN

```
SQL> select Date_Value, Sysdate,  
2 months_between(Date_Value, Sysdate) Diff_1,  
3 months_between(Sysdate, Date_value) Diff_2  
4 From Date_Sample;
```

DATE_VALU	SYSDATE	DIFF_1	DIFF_2
14-SEP-08	26-MAY-14	-68.40742	68.4074205

Next_Day

NEXT_DAY returns the date of the first weekday named by char that is later than the date. The return type is always DATE.

The general syntax of next_day is:

```
NEXT_DAY( date, char )
```

Parameter	Description
Date	Date used to calculate the next day
Char	A day of the week in the date. It can be either the full name or the abbreviation.

Next_Day

```
SQL> select Date_Value, Next_Day(Date_Value, 'Monday') Monday,
2  Next_Day(Date_Value, 'Tuesday') Tuesday,
3  Next_Day(Date_Value, 'Wednesday') Wednesday,
4  Next_Day(Date_Value, 'Thursday') Thursday,
5  Next_Day(Date_Value, 'Friday') Friday,
6  Next_Day(Date_Value, 'Saturday') Saturday,
7  Next_Day(Date_Value, 'Sunday') Sunday
8  From Date_Sample;
```

DATE_VALU	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
14-SEP-08	15-SEP-08	16-SEP-08	17-SEP-08	18-SEP-08	19-SEP-08	20-SEP-08	21-SEP-08

Last_Day

LAST_DAY returns the date of the last day of the month of that *date*.
The return type is always DATE.

The general syntax of last_day function is:

```
LAST_DAY( date )
```

Parameter	Description
Date	Dates used to calculate the last day of that month.

Last_Day

```
SQL> Select Date_Value, Last_Day(Date_Value) Last_Day  
2 From Date_Sample;
```

DATE_VALU	LAST_DAY
-----	-----
14-SEP-08	30-SEP-08

Date and Arithmetic operators

+ Operator

- '+' Operator can be used to add a specific number of days to a date
- 'date1+n' will return the day n days after date1.

- Operator

- '-' Operator can be used to subtract a specific number of days from a date
- 'date1-n' will return the day n days before date1.
- '-' Operator can also be used to find the number of days between two dates
- date1-date2 return the days between date1 and date2.

```
SQL> Select Date_Value, Last_Day(Date_Value) Last_day,
2 Date_Value+5 Add_date, Date_Value-5 Sub_Date,
3 Last_Day(Date_Value)-Date_Value Date_diff
4 From Date_Sample;
```

DATE_VALU	LAST_DAY	ADD_DATE	SUB_DATE	DATE_DIFF
14-SEP-08	30-SEP-08	19-SEP-08	09-SEP-08	16