

Course code : **CSE2007**
Course title : **Database Management System**
Module : **3**
Topic : **8**

SQL - Date functions

Objectives

This session will give the knowledge about

- SQL - Date functions

SYSDATE

```
SELECT sysdate FROM DUAL;
```

Displays current date in “20-FEB-20” format

```
SELECT systimestamp FROM DUAL;
```

Displays current date in “20-FEB-20 10.59.22.866000 AM +05:30”
format

TO_DATE

TO_DATE converts char of CHAR, VARCHAR2, NCHAR, or NVARCHAR2 datatype to a value of DATE datatype.

Syntax: to_date('date','dateformat')

Example:

```
SELECT TO_DATE('25-07-2005','DD-MM-YYYY') FROM DUAL;
```

Convert the given date in to oracle date format (25-JUL-05)

TO_CHAR

To translate the date into a different format string you can use TO_CHAR function with date format.

Syntax: to_char(date, 'converting string formats')

- SELECT TO_CHAR(SYSDATE,'DAY') FROM DUAL; - to find current day
- SELECT TO_CHAR(SYSDATE,'MON') FROM DUAL; - to find current month
- SELECT TO_CHAR(SYSDATE,'YYYY') FROM DUAL; - to find current year
- SELECT TO_CHAR(TO_DATE('25-07-2005','DD-MM-YYYY'),'DAY') FROM DUAL; - to find day

TO_CHAR Date formats

FORMAT	MEANING
D	Day of the week
DD	Day of the month
DDD	Day of the year
DAY	Full day for ex. 'Monday', 'Tuesday', 'Wednesday'
DY	Day in three letters for ex. 'MON', 'TUE', 'FRI'
W	Week of the month
WW	Week of the year
MM	Month in two digits (1-Jan, 2-Feb,...12-Dec)
MON	Month in three characters like "Jan", "Feb", "Apr"
MONTH	Full Month like "January", "February", "April"
RM	Month in Roman Characters (I-XII, I-Jan, II-Feb,...XII-Dec)
Q	Quarter of the Month
YY	Last two digits of the year.
YYYY	Full year
YEAR	Year in words like "Nineteen Ninety Nine"
HH	Hours in 12 hour format
HH12	Hours in 12 hour format
HH24	Hours in 24 hour format
MI	Minutes
SS	Seconds
FF	Fractional Seconds
SSSSS	Milliseconds
J	Julian Day i.e Days since 1 st -Jan-4712BC to till-date
RR	If the year is less than 50 Assumes the year as 21 ST Century. If the year is greater than 50 then assumes the year in 20 th Century.

Add Months()

To see which date will occur after 'n' months from now, we can use ADD_MONTHS function

```
SELECT ADD_MONTHS(SYSDATE,3) FROM DUAL;
```

returns 20-MAY-20

```
SELECT ADD_MONTHS(TO_DATE('20-04-2003','DD-MM-YYYY'),3) FROM  
DUAL;
```

returns 20-JUL-03

Months_Between()

To see no of months between two dates, use the MONTHS_BETWEEN function.

```
SELECT MONTHS_BETWEEN(SYSDATE, TO_DATE('20-04-2003','DD-MM-YYYY')) FROM DUAL;
```

returns 202

```
SELECT MONTHS_BETWEEN('20-APR-2003','24-APR-2002') FROM DUAL;
```

returns 11.87

Next_day()

The next_day() returns the date of the next day of the week.

```
SELECT NEXT_DAY('20-APR-2003','SUN') FROM DUAL;
```

returns 27-APR-03

```
SELECT NEXT_DAY(SYSDATE,'SUN') FROM DUAL;
```

returns 23-FEB-20

Last_day()

To see the last date of the given date, Use LAST_DAY function.

```
SELECT LAST_DAY('20-APR-2003') FROM DUAL;
```

returns 30-APR-03

```
SELECT LAST_DAY(SYSDATE) FROM DUAL;
```

returns 29-FEB-20

Extract()

An EXTRACT datetime function extracts and returns the value of a specified datetime field from a datetime or interval value expression..

The syntax of EXTRACT function is

```
EXTRACT ( YEAR / MONTH / WEEK / DAY / HOUR / MINUTE /  
TIMEZONE FROM DATE)
```

```
SELECT EXTRACT(DAY FROM SYSDATE) FROM DUAL;
```

returns 20

Date difference

```
SELECT (SYSDATE - TO_DATE('25-07-1998','DD-MM-YYYY'))/364 AS  
AGE FROM DUAL;
```

returns AGE 21.6496892

Oracle date functions

Function	Return Data Type	Purpose
CURRENT_TIMESTAMP SYSTIMESTAMP	dateTime	Constants representing the current date and time (at an arbitrary point during query evaluation) in GMT and server time zone, respectively.
CURRENT_DATE SYSDATE	dateTime	Constants representing current date (at an arbitrary point during query evaluation) in GMT and server time zone, respectively.
TO_TIME TO_DATETIME TO_DURATION	dateTime duration	Constructs a timestamp representing time, date, or duration, using an expression.
EXTRACT	integer	Extracts a portion of a dateTime value, such as the day of the week or month of the year.
TRUNC	dateTime	Rounds a dateTime value down to a coarser granularity.
TO_TZ FROM_TZ	dateTime	Returns the given timestamp in a different time zone.

Quiz

Find the date for nearest Saturday after current date.

```
SELECT NEXT_DAY(CURRENT_DATE,'SATURDAY') FROM DUAL;
```

Find how many days are left in the current month

```
SELECT LAST_DAY(SYSDATE) – SYSDATE FROM DUAL;
```

Display the date three months before the current date.

```
SELECT ADD_MONTHS(SYSDATE,-3) FROM DUAL;
```

Find the Experience of the employee who joined on 15th July 2012

```
SELECT (SYSDATE - TO_DATE('15-07-2012','DD-MM-YYYY'))/364 AS EXP FROM DUAL;
```

Summary

This session will give the knowledge about

- SQL - Date functions