

Oracle Date Functions

Oracle provides a data type **date** that behaves like a timestamp. It stores a date and a time. Internally a date is stored in a special format not visible to the user. A user can store and retrieve dates and times through the following main functions:

- **to_date(str, format)**
str is a string of characters and **format** indicates how the string is supposed to be interpreted. The format components are listed in the following table. The function returns the internal representation of a date specified by the string in the given format.

- **to_char(date, format)**
date is the internal representation of an Oracle date and **format** is as before. The function returns a character string representing the given date in the given format.

The format for a date is a string that may include as a substring one or more of the following:

FORMAT	DESCRIPTION	EXAMPLE
D	Day - number of day in the week	5
DD	Day - number of day within the month	26
DDD	Day - number of day in the year	235
DY	Day - three letter	SUN
DAY	Day - full name	SUNDAY
MM	Month-number	10
MON	Month-three letters	FEB
MONTH	Month-full name	FEBRUARY
Y	Year - last digit	3
YY	Year - last two digits	03
YYY	Year - last three digits	003
YYYY	Year - four digits	2003
HH12	Hour in 1-12 format	11
HH24	Hour in 0 -24 format	19
MI	Minutes	54
SS	Seconds	45
AM	Displays AM or PM (depending on the time)	PM

Suppose we have defined a table

Order(cid, item, quantity, odate)

which shows that at **odate** customer **cid** placed an order for **quantity** many **items**. The query

```
select item to_char(odate, 'DD-MON-YY) as order_date,  
       to_char(odate, 'HH24:MI) as order_time  
from Order  
where sid = 123456
```

may produce

item	order_date	order_time
pencil-BB	20-JAN-03	14:25
copier paper	14-FEB-03	18:10
...

The following list contains most of the popular functions you can use with Oracle dates:

- **date sysdate()**
returns the current date and time
- **date + int**
date - int
You can add or subtract a number of days to a date to get that new date
- **date1 - date2**
returns the number of days between date 1 and date 2
- **date next_day(date dat, string day)**
Parameters: a date **dat** and a **day** of the week. It returns the date after **dat** whose day of the week is **day**
- **date last_day(date dat)**
returns the date that corresponds to the last day of the month in **dat**
- **int months_between(date d1, date d2)**
returns the number of the month between **d1** and **d2**
- **date least(date d1, date d2, ..., date dn)**
returns the earliest of the given dates
- **date greatest(date d1, date d2, ..., date dn)**
returns the latest of the given dates
- **date trunc(date dat)**
returns the same date but the time is set to 12:00AM
- **date round(date dat)**
if **dat** is before 12:00 noon, it returns the same date with time is set to 12:00AM.
Otherwise it returns the next day with time at 12:00AM

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References:

Rajshekhar Sunderraman, *Oracle Programming - A Primer*, Addison Wesley, 2004.