**Date Functions and Operators.**

To see the system date and time use the following functions :

CURRENT\_DATE    :returns the current date in the session time zone, in a value in the Gregorian calendar of datatype   
                                   DATE  
SYSDATE                 :Returns the current date and time.   
SYSTIMESTAMP    :The SYSTIMESTAMP function returns the system date, including fractional seconds and time zone   
                                    of the database. The return type is TIMESTAMP WITH TIME ZONE.

**SYSDATE Example**

To see the current system date and time give the following query.

select sysdate from dual;  
  
SYSDATE  
------------  
8-AUG-03

The format in which the date is displayed depends on NLS\_DATE\_FORMAT parameter.

For example set the NLS\_DATE\_FORMAT to the following format

alter session set NLS\_DATE\_FORMAT=’DD-MON-YYYY HH:MIpm’;

Then give the give the following statement

select sysdate from dual;  
  
SYSDATE  
------------------  
8-AUG-2003 03:05pm

The default setting of NLS\_DATE\_FORMAT is DD-MON-YY

**CURRENT\_DATE Example**

To see the current system date and time with  time zone use CURRENT\_DATE function

ALTER SESSION SET TIME\_ZONE = '-4:0';  
ALTER SESSION SET NLS\_DATE\_FORMAT = 'DD-MON-YYYY HH24:MI:SS';  
SELECT SESSIONTIMEZONE, CURRENT\_DATE FROM DUAL;  
  
SESSIONTIMEZONE CURRENT\_DATE  
--------------- -------------------------------  
-04:00          22-APR-2003 14:15:03  
  
ALTER SESSION SET TIME\_ZONE = '-7:0';  
SELECT SESSIONTIMEZONE, CURRENT\_DATE FROM DUAL;  
  
SESSIONTIMEZONE CURRENT\_DATE  
--------------- --------------------  
-07:00          22-APR-2003 09:15:33

**SYSTIMESTAMP Example**

To see the current system date and time with fractional seconds with time zone give the following statement

select systimestamp from dual;  
  
SYSTIMESTAMP  
-------------------------------  
22-APR-03 08.38.55.538741 AM -07:00

**DATE FORMAT MODELS**

To translate the date into a different format string  you can use TO\_CHAR function with date format. For example to see the current day you can give the following query

Select to\_char(sysdate,’DAY’)”Today” FROM DUAL;  
  
TODAY  
-------  
THURSDAY

To translate a character value, which is in format other than the default date format, into a date value you can use TO\_DATE function with date format to date

Like this “DAY” format model there are many other date format models available in Oracle. The following table list date format models.

|  |  |
| --- | --- |
| 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 1st-Jan-4712BC to till-date |
| RR | If the year is less than 50 Assumes the year as 21ST Century. If the year is greater than 50 then assumes the year in 20th Century. |

suffixes

|  |  |
| --- | --- |
| TH | Returns th, st, rd or nd according to the leading number like 1st , 2nd 3rd 4th |
| SP | Spells out the leading number |
| AM or PM | Returns AM or PM according to the time |
| SPTH | Returns Spelled Ordinal number. For. Example First, Fourth |

For example to see the today’s date in the following format

Friday, 7th March, 2014

Give the following statement

select to\_char(sysdate,’Day, ddth Month, yyyy’)”Today” from dual;

TODAY  
----------  
Friday, 7th March, 2014

For example you want to see hire dates of all employee in the following format

Friday, 8th August, 2003

Then give the following query.

select to\_char(hire\_date,’Day, ddth Month, yyyy’) from emp;

**TO\_DATE Example**

To\_Date function is used to convert strings into date values. For example you want to see what was the day on 15-aug-1947. The use the to\_date function to first convert the string into date value and then pass on this value to to\_char function to extract day.

select to\_char(to\_date(’15-aug-1947’,’dd-mon-yyyy’),’Day’)   
                                         from dual;  
  
TO\_CHAR(  
--------------  
Friday

To see how many days have passed since 15-aug-1947 then give the following query

select sysdate-to\_date(’15-aug-1947’,’dd-mon-yyyy’) from dual;

Now we want to see which date will occur after 45 days from now

select sysdate+45 from dual;  
  
SYSDATE  
-------------  
06-JUN-2003

**ADD\_MONTHS**

To see which date will occur after 6 months from now, we can use ADD\_MONTHS function

Select ADD\_MONTHS(SYSDATE,6) from dual;  
  
ADD\_MONTHS  
--------------------  
22-OCT-2003

**MONTHS\_BETWEEN**

To see how many months have passed since  a particular date, use the MONTHS\_BETWEEN function.  
  
For Example, to see how many months have passed since 15-aug-1947, give the following query.

select months\_between(sysdate,to\_date(’15-aug-1947’)) from dual;  
  
Months  
-----------  
616.553

To eliminate the decimal value use truncate function

select trunc(months\_between(sysdate,to\_date(’15-aug-1947’))) from dual;  
  
Months  
-----------  
616

**LAST\_DAY**

To see the last date of the month of a given date, Use LAST\_DAY function.

select LAST\_DAY(sysdate) from dual;

LAST\_DAY  
--------------  
31-AUG-2003

**NEXT\_DAY**

To see when a particular day is coming next ,  use the NEXT\_DAY function.  
  
For Example to view when next Saturday is coming, give the following query

select next\_day(sysdate) from dual;  
  
NEXT\_DAY  
--------------  
09-AUG-2003

**EXTRACT**

An EXTRACT datetime function extracts and returns the value of a specified datetime field from a datetime or interval value expression. When you extract a TIMEZONE\_REGION or TIMEZONE\_ABBR (abbreviation), the value returned is a string containing the appropriate time zone name or abbreviation

The syntax of EXTRACT function is

EXTRACT ( YEAR / MONTH / WEEK / DAY / HOUR / MINUTE / TIMEZONE  FROM DATE)  
  
Example  
The following demonstrate the usage of EXTRACT function to extract year from current date.  
  
select extract(year from sysdate) from dual;  
  
EXTRACT  
------------  
2003