

## Tool Tip 11 - Extracting other dimensions (year, semester, month, day) from date, filtering the last thirty days and the previous month.

The beginning of the ETL process (Extract, Transform and Load) within a BI (Business Intelligence) project, consists on developing a program to data extraction from a transactional database, necessary to define exactly what data should make the subsequent datamart (or cube) loading.

These data are usually associated to one or more temporal dimensions. At the relational base the events (like sale, purchase, etc.) are associated to the date on which occurred and, from these date, we can extract year, month and day dimensions.

In case of BXBwebsite, it is at SQL script (extractor program) that the transformation of the column that contain the data must be done.

There are some examples of functions for the current date, year, month, day extraction, according to DBMS. To use at BXBwebsite, just substitute <date-field> by the name of the date column from the transactional database.

We also mentioned the syntax used, within the DBMSs referenced below, to obtain the current date (i.e. the day of the program execution). It is used in situations where the retroactive period on data extraction must be determined, for example:

- a) if the cube (datamart) has to contain data from the last 30 days:  
Condition to be filtered in SQL script: sale date >= current date - 30
- b) If the cube (datamart) has to contain data from the last 90 days:  
Condition to be filtered in SQL script: sale date >= current date - 90

### MS-Access and text files (TXT; CSV)

Example considering the < date-field > and the system date equal to 31/03/2011:

To extract	SQL Command	Result	Type
Current Date	Date() as CurrentDate	31/03/2011	Date
Year	year (<date-field>) as Year	2011	Integer
Semester	iif ((month(<date-field >) <= 6), '1', iif ((month(<date-field >) > 6), '2')) as Semester	01	Text
Month	month(<date-field >) as Month	3	Integer
Day	day(<date-field>) as Day	31	Integer
Year-Month	iif(not isnull(year(<campo-data>)), Cstr(year(<campo-data>)) + '-' + Mid(Cstr(month(<campo-data>) + 100), 2, 2)) as AnoMes	2011-03	Text



Parameter on the WHERE clause	In SQL script, use the command
<b>Last 30 days</b>	<code>&lt; date-field &gt; &gt; (Date() - 30)</code>
<b>Last Month</b>	<code>&lt; date-field &gt; &gt;= DateSerial(Year(Date()), Month(Date()) - 1, 1) and &lt; date-field &gt; &lt; DateSerial(Year(Date()), Month(Date()), 1)</code>

**Attention:** When the field names are compounds and separated, you must use brackets to reference this field.

Example:

The database (or text file) contain the "Sale Date" field.

In SQL script this field must be referenced like this: [Sale Date].

## Firebird

Example considering the < date-field > and the system date equal to 31/03/2011:

To extract	SQL Command	Result	Type
<b>CurrentDate</b>	<code>date'now' as CurrentDate</code>	31/03/2011	Date
<b>Year</b>	<code>extract(year from &lt; date-field &gt;) as Year</code>	2011	Integer
<b>Semester</b>	<code>(case when extract(month from &lt; date-field &gt;) &lt;= 6 then '01' else (case when extract(month from &lt; date-field &gt;) &gt; 6 then '02' end) end) as Semester</code>	01	Text
<b>Month</b>	<code>extract(month from &lt; date-field &gt;) as Month</code>	3	Integer
<b>Day</b>	<code>extract(day from &lt; date-field &gt;) as Day</code>	31	Integer
<b>Year-Month</b>	<code>cast(extract(year from &lt; date-field &gt;) as character(4))    '-'    substring(cast(extract(month from &lt; date-field &gt;) + 100 as character(3)) from 2 for 2) as Year-Month</code>	2011-03	Text

Parameter on the WHERE clause	SQL Command
<b>Last 30 Days</b>	<code>&lt; date-field &gt; &gt; (date'now' - 30)</code>
<b>Last Month</b>	<code>&lt; date-field &gt; &gt;= dateadd(day, -extract(day from (dateadd(month, -1, date'now')-1)), dateadd(month, -1, date'now')) and &lt; date-field &gt; &lt; dateadd(day, -extract(day from (date'now')-1), date'now')</code>



## MySQL and MariaDB

Example considering the <date-field> and the system date equal to 31/03/2011:

To extract	SQL Command	Result	Type
<b>CurrentDate</b>	curdate() as CurrentDate	31/03/2011	DateTime
<b>Year</b>	date_format(<date-field>, '%Y') as Year	2011	Text
<b>Semester</b>	(case when Month(<date-field>) <= 6 then '01' else (case when Month(<date-field>) > 6 then '02' end) end) as Semester	01	Text
<b>Month</b>	date_format(<date-field>, '%m') as Month	03	Text
<b>Day</b>	date_format(<date-field>, '%d') as Day	31	Text
<b>Year-Month</b>	date_format(<date-field>, '%Y-%m') as Year-Month	2011-03	Text

Parameter on the WHERE clause	SQL Command
<b>Last 30 Days</b>	<date-field> > (curdate() - interval 30 day)
<b>Last Month</b>	Year(<date-field>) = Year(curdate() - interval 1 month) AND Month(<date-field>) = Month(curdate() - interval 1 month)
<b>Current month</b>	Year(<date-field>) = Year(curdate()) AND Month(<date-field>) = Month(curdate())

## Oracle

Example considering the < date-field > and the system date equal to 31/03/2011:

To extract	SQL Command	Result	Type
<b>CurrentDate</b>	sysdate as CurrentDate	31/03/2011	Date
<b>Year</b>	to_number(to_char(<date-field>, 'yyyy')) as Year	2011	Integer
<b>Semester</b>	(case when to_number(to_char(<date-field>, 'MM')) <= 6 then '01' else (case when to_number(to_char(<date-field>, 'MM')) > 6 then '02' end) end) as Semester	01	Text
<b>Month</b>	to_number(to_char(<date-field>, 'MM')) as Month	3	Integer
<b>Day</b>	to_number(to_char(<date-field>, 'dd')) as Day	31	Integer
<b>Year-Month</b>	to_char(<date-field>, 'yyyy')    '-'    to_char(<date-field>, 'MM') as Year-Month	2011-03	Text

Parameter on the WHERE clause	SQL Command
Last 30 Days	< date-field > > (sysdate – 30)
Last Month	< date-field > >= add_months(sysdate, -1) –to_number(to_char(sysdate, 'DD')-1) and < date-field > < sysdate -to_number(to_char(sysdate, 'DD')-1)

## Progress

Example considering the < date-field > and the system date equal to 31/03/2011:

To extract	SQL Command	Result	Type
CurrentDate	sysdate as CurrentDate	31/03/2011	Date
Year	year(<date-field >) as Year	2011	Integer
Semester	(case when Month(<date-field >) <= 6 then '01' else (case when Month(<date-field >) > 6 then '02' end) end) as Semester	01	Text
Month	month(<date-field >) as Month	3	Integer
Day	day(<date-field >) as Day	31	Integer
Year-Month	to_char(year(<date-field >))    '-'    substr(ltrim(to_char(month(<date-field >) + 100)), 2, 2) as 'Year-Month'	2011-03	Text

Parameter on the WHERE clause	SQL Command
Last 30 Days	< date-field > > (sysdate – 30)
Last Month	< date-field > >= to_date(to_char(year(add_months(sysdate, -1)))    '/'    to_char(month(add_months(sysdate, -1)))    '/01') and < date-field > < to_date(to_char(year(sysdate))    '/'    to_char(month(sysdate))    '/01')

## SQL Server

Example considering the < date-field > and the system date equal to 31/03/2011:

To extract	SQL Command	Result	Type
CurrentDate	getdate() as CurrentDate	31/03/2011 12:00:00	DateTime
Year	year(<date-field >) as Year	2011	Integer
Semester	(case when Month(<date-field >) <= 6 then '01' else (case when Month(<date-field >) > 6 then '02' end) end) as Semester	01	Text
Month	month(<date-field >) as Month	3	Integer
Day	day(<date-field >) as Day	31	Integer
Year-Month	rtrim(cast(year(<date-field >) as char)) + '-' + substring(cast(month(<date-field > + 100) as char),2,2)	2011-03	Text

	as Year-Month		
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Parameter on the WHERE clause	SQL Command
<b>Last 30 Days</b>	<code>&lt; date-field &gt; &gt; dateadd(day,datediff(day,30,GETDATE()),0)</code>
<b>Last Month</b>	<code>&lt; date-field &gt; &gt;= cast(convert(char, dateadd(d, - day(getdate() - 1), dateadd(m, - 1, getdate())), 103) as datetime)</code> <code>&lt; date-field &gt; &gt;= cast(convert(char, dateadd(d, - day(getdate() - 1), getdate()), 103) as datetime)</code>