



Date & Time



▲ Date/time data types

before 2008

Data Type	Bytes	Range	Precision
datetime	8	1 Jan 1753 - 31 Dec 9999	rounded to increments of .000, .003 or .007 sec.
smalldatetime	4	1 Jan 1900 - 6 Jun 2079	1 minute

per 2008

datetime2	6-8	1 Jan 0001 - 31 Dec 9999	100 nano sec.
date	3	1 Jan 0001 - 31 Dec 9999	1 dag
time	3-5	only time	100 nano sec.

▲ Now

current date & time

```
SELECT CURRENT_TIMESTAMP;      -- 🦖 dinosaur: no braces  
SELECT GETDATE();
```

↑
both return a datetime

```
SELECT SYSDATETIME();
```

↑
return a datetime2

▲ Date in WHERE clause (1)



Use 'YYYYMMDD' to be as neutral as possible!

```
-- without time info
```

```
SELECT * FROM Sales.Orders  
WHERE orderdate > '20060601';
```

```
-- with time info
```

```
SELECT * FROM Sales.Orders  
WHERE orderdate < '20060601 23:59:59.999';
```



▲ Date in WHERE clause (2)



Don't use BETWEEN with dates

-- don't do this

```
SELECT * FROM Sales.Orders  
WHERE orderdate BETWEEN '20060101' AND '20061231 23:59:59.999';
```

rounded by SQL to '20070101 00:00:00.000'



-- but use: >= AND <

-- example: >= 1st of monthX AND < 1st of monthY

```
SELECT * FROM Sales.Orders  
WHERE orderdate >= '20060101' AND orderdate < '20070101';
```



▲ Date functions (1)

parts of date/time

```
SELECT DATENAME(month, SYSDATETIME()); -- returns NVARCHAR
SELECT DAY(SYSDATETIME()); -- returns INT
SELECT MONTH(SYSDATETIME()); -- returns INT
SELECT YEAR(SYSDATETIME()); -- returns INT
```

```
SELECT DATEPART(month, SYSDATETIME()); -- returns INT
      ↑
      choose your unit: month, hour, quarter, week etc...
```

dates/times by using units

```
SELECT DATETIME2FROMPARTS(1999, 12, 31, 23, 59, 59, 499, 3) -- y,m,d,h,min,s,frac,prec
```

▲ Date functions (2)

length between 2 moments

```
SELECT DATEDIFF(hour, '20171201 12:33:41', '20171202 18:45:00');
```

-- returns INT

↑ choose your unit

change date/time

positief number = addition, negative number = subtraction

```
SELECT DATEADD(minute, 1440, '20171201 00:00');
```

↑ choose your unit

Warning!



Don't use abbreviations for units!

```
-- Christmas 2017 is on a Monday. Pick your answer: a, b or c ?  
SELECT DATEPART(w, '20171225');      -- (a) 53      (b) 2      (c) 1  
SELECT DATEPART(y, '20171225');      -- (a) 17      (b) 2017    (c) 359  
      ↑  
      abbreviation
```


▲ Report on previous month data?

EOMONTH()

```
SELECT EOMONTH(SYSDATETIME());           -- last day of this month
SELECT EOMONTH(SYSDATETIME(), 0);         -- last day of this month
SELECT EOMONTH(SYSDATETIME(), -1);        -- last day of previous month
```



Select data of the previous month:

```
WHERE orderdate >= DATEADD(DAY, 1, EOMONTH(SYSDATETIME(), -2))
AND orderdate < DATEADD(DAY, 1, EOMONTH(SYSDATETIME(), -1));
```

