Built-In Functions

Using Functions

Function Basics

Perform operation on data

Many built-in functions exist

- Handling null data
- Manipulating dates
- Working with strings
- Converting data types

Can create your own

Functions

Deterministic functions
- Same input equals same output

Nondeterministic functions
- Same input may yield different results

Performance issues
- SQL may need to process each row individually
  - "Hidden cursor"
- Avoid passing columns into functions in `SELECT` statements
  - Basically never do this on the `WHERE` line

NULL Functions

`ISNULL`
- Two parameters
  - Returns the first parameter if it is not null
  - Returns the second parameter if the first parameter is null

`COALESCE`
- Multiple parameters
  - Returns the first parameter SQL Server finds that is not null
- More flexible and easier to read

Date/Time Functions

`GETDATE()`
- Returns the current server date

`GETUTCDATE()`
- Returns the server date normalized to UTC

`DATEPART()`
- Returns a part of a date
- Related to DAY(), MONTH(), and YEAR()

Date/Time Functions

`DATEDIFF()`
- Difference between two dates

`DATEADD()`
- Add time to a date

`ISDATE()`
- Determines if value is a date

New Date and Time Functions

`DATEFROMPARTS()`
- Builds a day from a provided year, day, month

`TIMEFROMPARTS()`
- Builds a time from provided hour, minute, second

`EOMONTH()`
- Provides the last day of the month for the provided date

`PARSE()`
- Converts string to a date

String Functions

`CHARINDEX()`
- Searches for one string inside another

`PATINDEX()`
- Supports pattern searches inside of a string

`LEFT()` and `RIGHT()`
- Returns characters from the left or right side of a string

`LTRIM()` and `RTRIM()`
- Removes strings whitespace from a string

`LEN()`
- Returns the length of a string

New String Functions

`CONCAT()`
- Concatenates strings

`FORMAT()`
- Converts value to a string using .NET formatting

Data Type Conversions

`CONVERT(type, value, format)`
- Accepts a formatting option

`CAST(value AS type)`

http://msdn.microsoft.com/en-us/library/ms187928.aspx

New Data Type Conversion Functions

TRY_PARSE()
- More flexible when converting strings to data types
- Returns NULL if parse fails

TRY_CONVERT()
- Same as `CONVERT()`, only returns NULL if conversion fails

New Logic Functions

`CHOOSE()`
- Returns a list item based on its location
- First parameter is index
- Next parameters are the list

`IIF()`
- Instant if
- Three parameters:
  - Boolean expression
  - Return value if true
  - Return value if false