Cheatography

C#/SQL Data Types & Conversion Cheat Sheet

by embuhrow via cheatography.com/22179/cs/6420/

SQL Data Types (Numeric - Exact)

Type	Minimum	Maximum	Storage
bigint	-9,223,372,036,-854,775,808	9,223,372,036,8-54,775,807	8 Bytes
int	-2,147,483,648	2,147,483,647	4 Bytes
smallint	-32,768	32,767	2 Bytes
tinyint	0	255	1 Byte
bit	true (1)	false (0)	1 Byte for every 8 bits
decimal(p,s)	-10^38 + 1	10^38 - 1	Up to 17 Bytes
numeric	-10^38 + 1	10^38 - 1	Up to 17 Bytes
money	-922,337,203,68-5,477.5808	922,337,203,-685,477.5807	8 Bytes
smallmoney	-214,748.3648	214,748.3647	4 Bytes

SQL Data Types (Character Strings)

Type	Range/Category	Storage
char(n)	Non-Unicode Characters	n Bytes
varchar(n)	Non-Unicode Characters	n Bytes
varcha-r(max)	Non-Unicode Characters	2^31-1 Bytes
text	Non-Unicode Characters	2^31-1 Bytes
nchar(n)	Unicode Characters	n Bytes
nvarchar(n)	Unicode Characters	n Bytes
nvarch-ar(max)	Unicode Characters	2^31-1 Bytes
ntext	Unicode Characters	2^30-1 Bytes
binary(n)	Binary Data	n Bytes
varbinary(n)	Binary Data	n Bytes
varbinary-(max)	Binary Data	Actual length of the data + 2 Bytes
image	Binary Data	2^31-1 Bytes

SQL Data Types (Numeric - Approximate)

Type	Range	Storage
float(n)	-1.79E+308 to -2.23E-308, 0, 2.23E-308 to 1.79E+308	4 or 8 Bytes*
real	-3.40E+38 to -1.18E-38, 0, and 1.18E-38 to 3.40E+38	4 Bytes

* Depends on the value of "n".

SQL Data Types (Spatial)

Type	Range
geography	Latitude & Longitude values
geometry	Euclidean (flat) coordinate system (x/y values)

SQL Data Types (Other)

Type	Range	Storage
uniqueide-ntifier	Fixed-length 32-character Hexide-cimal	16 Bytes
xml	Well-formed XML Data	2 Gigabytes

C# Data Types (Numeric)

Type	Minimum	Maximum	.NET Class
byte	0	255	System.Byte
sbyte	-128	127	System.SByte
short	-32,768	32,767	System.Int16
ushort	0	65,535	System.UInt16
int	-2,147,483,648	2,147,483,647	System.Int32
uint	0	4,294,967,295	System.UInt32
long	-9,223,372,036,-854,775,808	9,223,372,036,8-54,775,807	System.Int64
ulong	0	18,446,744,073,-709,551,615	System.UInt64
float	-3.402823e38	3.402823e38	System.Single
double	-1.797693134862-32e308	1.7976931348623-2e308	System.Double

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C# Data Types (Numeric) (cont)

decimal	-79,228,168,514,26-4,337,593,543,9-50,335	79,228,162,514,-264,337,593,-543,950,335	System.Decimal

C# Data Types (Character Strings)

Type	Range	.NET Class
char	A single Unicode character	System.Char
string	A string of Unicode characters	System.String

C# Data Types (Date & Time)

Type	Minimum	Maximum	.NET Class
DateTime	01/01/0001 00:00:-00.0000000	12/31/9999 23:59:-59.9999999	System.DateTime
TimeSpan	-10,675,199 days*	10,675,199 days*	System.TimeSpan

* Values are approximate, based on long.MinValue and long.MaxValue for total number of ticks.

C# Data Types (Other)

Type	Range	.NET Class
bool	True or False	System.Boolean
object	An object.	System.Object
Guid	A 32-character Hexidecimal value	System.Guid

SQL to C# Conversion

SQL Data Type	C# Type
tinyint	byte
smallint	short
int	int
bigint	long
float	float
decimal	decimal
nvarchar	string
varchar	string
char	string
bit	bool
datetime2	DateTime
geography	DbGeography
uniqueidentifier	Guid

SQL to C# Conversion (cont)

time*	DateTime/TimeSpan*

* Time is stored as a DateTime on the data object, however, there are times when it is converted into a TimeSpan in order to perform certain operations.

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