**C# Data Types**

Each data types includes specific range of values. For example, a variable of int data type can have any value between -2,147,483,648 to 2,147,483,647. The same way, bool data type can have only two value - true or false. The following table lists the data types available in C# along with the range of values possible for each data type:

| **Alias** | **.NET Type** | **Type** | **Size (bits)** | **Range (values)** |
| --- | --- | --- | --- | --- |
| byte | Byte | Unsigned integer | 8 | 0 to 255 |
| sbyte | SByte | Signed integer | 8 | -128 to 127 |
| int | Int32 | Signed integer | 32 | -2,147,483,648 to 2,147,483,647 |
| uint | UInt32 | Unsigned integer | 32 | 0 to 4294967295 |
| short | Int16 | Signed integer | 16 | -32,768 to 32,767 |
| ushort | UInt16 | Unsigned integer | 16 | 0 to 65,535 |
| long | Int64 | Signed integer | 64 | -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 |
| ulong | UInt64 | Unsigned integer | 64 | 0 to 18,446,744,073,709,551,615 |
| float | Single | Single-precision floating point type | 32 | -3.402823e38 to 3.402823e38 |
| double | Double | Double-precision floating point type | 64 | -1.79769313486232e308 to 1.79769313486232e308 |
| char | Char | A single Unicode character | 16 | Unicode symbols used in text |
| bool | Boolean | Logical Boolean type | 8 | True or False |
| object | Object | Base type of all other types |  |  |
| string | String | A sequence of characters |  |  |
| decimal | Decimal | Precise fractional or integral type that can represent decimal numbers with 29 significant digits | 128 | (+ or -)1.0 x 10e-28 to 7.9 x 10e28 |
| DateTime | DateTime | Represents date and time |  | 0:00:00am 1/1/01 to 11:59:59pm 12/31/9999 |

As you can see in the above table that each data types (except string and object) includes value range. Compiler will give an error if value goes out of datatype's permitted range. For example, int data type's range is -2,147,483,648 to 2,147,483,647. So if you assign value which is not in this range then compiler would give error.