

C# - Type Conversion

Type conversion is converting one type of data to another type. It is also known as Type Casting. In C#, type casting has two forms –

- **Implicit type conversion** – These conversions are performed by C# in a type-safe manner. For example, are conversions from smaller to larger integral types and conversions from derived classes to base classes.
- **Explicit type conversion** – These conversions are done explicitly by users using the pre-defined functions. Explicit conversions require a cast operator.

The following example shows an explicit type conversion –

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```
using System;

namespace TypeConversionApplication {
    class ExplicitConversion {
        static void Main(string[] args) {
            double d = 5673.74;
            int i;

            // cast double to int.
            i = (int)d;
            Console.WriteLine(i);
            Console.ReadKey();
        }
    }
}
```

When the above code is compiled and executed, it produces the following result –

```
5673
```

C# Type Conversion Methods

C# provides the following built-in type conversion methods –

Sr.No.	Methods & Description
1	ToBoolean Converts a type to a Boolean value, where possible.
2	ToByte Converts a type to a byte.
3	ToChar Converts a type to a single Unicode character, where possible.
4	ToDateTime Converts a type (integer or string type) to date-time structures.
5	ToDecimal Converts a floating point or integer type to a decimal type.
6	ToDouble Converts a type to a double type.
7	ToInt16 Converts a type to a 16-bit integer.
8	ToInt32 Converts a type to a 32-bit integer.
9	ToInt64 Converts a type to a 64-bit integer.
10	ToSbyte Converts a type to a signed byte type.
11	ToSingle Converts a type to a small floating point number.
12	ToString Converts a type to a string.

13	ToType Converts a type to a specified type.
14	ToUInt16 Converts a type to an unsigned int type.
15	ToUInt32 Converts a type to an unsigned long type.
16	ToUInt64 Converts a type to an unsigned big integer.

The following example converts various value types to string type –

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```

using System;

namespace TypeConversionApplication {
    class StringConversion {
        static void Main(string[] args) {
            int i = 75;
            float f = 53.005f;
            double d = 2345.7652;
            bool b = true;

            Console.WriteLine(i.ToString());
            Console.WriteLine(f.ToString());
            Console.WriteLine(d.ToString());
            Console.WriteLine(b.ToString());
            Console.ReadKey();
        }
    }
}

```

When the above code is compiled and executed, it produces the following result –

```

75
53.005
2345.7652
True

```