

Namespace FireBlade.CsTools

Classes

[StringExtensions](#)

Provides extension methods for strings.

Enums

[StringCasing](#)

Specifies the casing of a string.

Enum StringCasing

Namespace: [FireBlade.CsTools](#)

Assembly: CsTools.dll

Specifies the casing of a string.

```
public enum StringCasing
```

Fields

Alternating = 8

Every 1st character is uppercase, and every 2nd character is lowercase, or reverse. Cannot be set for [SetCasing\(string, StringCasing\)](#), but can be retrieved through [GetCasing\(string\)](#).

AlternatingNormal = 9

Every 1st character is uppercase, and every 2nd character is lowercase, or reverse. Cannot be retrieved through [GetCasing\(string\)](#) (see [Alternating](#) instead).

AlternatingReverse = 10

Every 2nd character is uppercase, and every 1st character is lowercase, or reverse. Cannot be retrieved through [GetCasing\(string\)](#) (see [Alternating](#) instead).

Camel = 5

The same as [Pascal](#), but the first word is not capitalized.

Inverse = 7

The inverse of [Title](#).

Lower = 2

All characters are lowercase.

Other = 0

The capitalization mode doesn't match any default mode. Cannot be set for [SetCasing\(string, StringCasing\)](#), but can be retrieved through [GetCasing\(string\)](#).

Pascal = 4

The first letter of every word is capitalized, but words are NOT separated by spaces.

Snake = 6

Words can have any capitalization, but they are separated by underscores.

Title = 3

The first letter of every word is capitalized and words are separated by spaces.

Upper = 1

All characters are uppercase.

Class StringExtensions

Namespace: [FireBlade.CsTools](#)

Assembly: CsTools.dll








Provides extension methods for strings.

```
public static class StringExtensions
```

Inheritance

[object](#)  ← StringExtensions

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#) 

Methods

GetCasing(string)

Gets the casing of a string.

```
public static StringCasing GetCasing(this string s)
```

Parameters

s [string](#) 

The string to check.

Returns

[StringCasing](#)

The casing of the string, or [Other](#) if a match wasn't found.

GetString(IEnumerable<char>)

Creates a [string](#) from a [char](#) collection.

```
public static string GetString(this IEnumerable<char> chars)
```

Parameters

chars [IEnumerable](#) <[char](#)>

The characters to convert.

Returns

[string](#)

The collection **chars**, converted to a [string](#).

IsNotNullOrEmpty(string?)

Indicates whether the string is not [null](#) or an empty string ([Empty](#)).

```
public static bool IsNotNullOrEmpty(this string? s)
```

Parameters

s [string](#)

The string to check.

Returns

[bool](#)

[true](#) if the string is not [null](#) or an empty string; otherwise, [false](#).

IsNotNullOrWhiteSpace(string?)

Indicates whether the string is not [null](#), empty ([Empty](#)), or doesn't consist of only whitespace characters.

```
public static bool IsNotNullOrWhiteSpace(this string? s)
```

Parameters

s [string](#)

The string to check.

Returns

[bool](#)

[true](#) if the string is not [null](#) or an empty string, or if the string doesn't consist exclusively of whitespace characters; otherwise, [false](#).

IsNullOrEmpty(string?)

Indicates whether the string is [null](#) or an empty string ([Empty](#)).

```
public static bool IsNullOrEmpty(this string? s)
```

Parameters

s [string](#)

The string to check.

Returns

[bool](#)

[true](#) if the string is [null](#) or an empty string; otherwise, [false](#).

IsNullOrWhiteSpace(string?)

Indicates whether the string is [null](#), empty ([Empty](#)), or consists of only whitespace characters.

```
public static bool IsNullOrWhiteSpace(this string? s)
```

Parameters

s [string](#)

The string to check.

Returns

[bool](#)

[true](#) if the string is [null](#) or an empty string, or if the string consists exclusively of whitespace characters; otherwise, [false](#).

IsPalindrome(string)

Determines whether the string reads the same forwards and backwards.

```
public static bool IsPalindrome(this string s)
```

Parameters

s [string](#)

The string to check.

Returns

[bool](#)

[true](#) if the string reads the same backwards; otherwise, [false](#).

ParseNumber<TNum>(string)

Parses the string into a number.

```
public static TNum ParseNumber<TNum>(this string s) where TNum : INumber<TNum>
```

Parameters

s [string](#)

The string to parse.

Returns

TNum

The string **s**, converted to a **TNum**.

Type Parameters

TNum

The number type.

ParseNumber<TNum>(string, NumberStyles)

Parses the string into a number.

```
public static TNum ParseNumber<TNum>(this string s, NumberStyles style) where TNum
: INumber<TNum>
```

Parameters

s [string](#)

The string to parse.

style [NumberStyles](#)

A bitwise combination of styles present in the string.

Returns

TNum

The string **s**, converted to a **TNum**.

Type Parameters

TNum

The number type.

ParseNumber<TNum>(string, NumberStyles, IFormatProvider)

Parses the string into a number.

```
public static TNum ParseNumber<TNum>(this string s, NumberStyles style, IFormatProvider provider) where TNum : INumber<TNum>
```

Parameters

s [string](#)

The string to parse.

style [NumberStyles](#)

A bitwise combination of styles present in the string.

provider [IFormatProvider](#)

An object that provides culture-specific formatting information.

Returns

TNum

The string **s**, converted to a **TNum**.

Type Parameters

TNum

The number type.

ParseNumber<TNum>(string, IFormatProvider)

Parses the string into a number.

```
public static TNum ParseNumber<TNum>(this string s, IFormatProvider provider) where TNum
```

: INumber<TNum>

Parameters

s [string](#)

The string to parse.

provider [IFormatProvider](#)

An object that provides culture-specific formatting information.

Returns

TNum

The string **s**, converted to a **TNum**.

Type Parameters

TNum

The number type.

SetCasing(string, StringCasing)

Sets the casing of the string.

```
public static string SetCasing(this string s, StringCasing targetCasing)
```

Parameters

s [string](#)

The string to change.

targetCasing [StringCasing](#)

The new casing.

Returns

[string](#)

The string `s`, converted to the casing specified in `targetCasing`.

TryParseNumber<TNum>(string, NumberStyles, out TNum)

Tries to parse the string into a number.

```
public static bool TryParseNumber<TNum>(this string s, NumberStyles style, out TNum result)
where TNum : INumber<TNum>
```

Parameters

`s` [string](#)

The string to try to parse.

`style` [NumberStyles](#)

A bitwise combination of styles present in the string.

`result` TNum

The result, if successful.

Returns

[bool](#)

[true](#) if the conversion succeeded; otherwise, [false](#).

Type Parameters

TNum

The number type.

TryParseNumber<TNum>(string, IFormatProvider, NumberStyles, out TNum)

Tries to parse the string into a number.

```
public static bool TryParseNumber<TNum>(this string s, IFormatProvider provider,
NumberStyles style, out TNum result) where TNum : INumber<TNum>
```

Parameters

s [string](#)

The string to try to parse.

provider [IFormatProvider](#)

An object that contains culture-specific formatting information.

style [NumberStyles](#)

A bitwise combination of styles present in the string.

result TNum

The result, if successful.

Returns

[bool](#)

[true](#) if the conversion succeeded; otherwise, [false](#).

Type Parameters

TNum

The number type.

TryParseNumber<TNum>(string, IFormatProvider, out TNum)

Tries to parse the string into a number.

```
public static bool TryParseNumber<TNum>(this string s, IFormatProvider provider, out TNum
result) where TNum : INumber<TNum>
```

Parameters

s [string](#)

The string to try to parse.

provider [IFormatProvider](#)

An object that contains culture-specific formatting information.

result TNum

The result, if successful.

Returns

[bool](#)

[true](#) if the conversion succeeded; otherwise, [false](#).

Type Parameters

TNum

The number type.

TryParseNumber<TNum>(string, out TNum)

Tries to parse the string into a number.

```
public static bool TryParseNumber<TNum>(this string s, out TNum result) where TNum
: INumber<TNum>
```

Parameters

s [string](#)



The string to try to parse.

result TNum

The result, if successful.

Returns

[bool](#) 

[true](#)  if the conversion succeeded; otherwise, [false](#) .

Type Parameters

TNum

The number type.

Namespace FireBlade.CsTools.Numbers

Classes

[MathTools](#)

Provides mathematical tools.

[NumberExtensions](#)

Extends number types such as [int](#), [float](#), or [double](#).

[Range<TNum>](#)

Represents a range of numbers.

Class MathTools

Namespace: [FireBlade.CsTools.Numbers](#)

Assembly: CsTools.dll

Provides mathematical tools.

```
public static class MathTools
```

Inheritance

[object](#)  ← MathTools

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#) 

Methods

IsEven<TNum>(TNum)

Checks if a number is even.

```
public static bool IsEven<TNum>(TNum val) where TNum : INumber<TNum>
```

Parameters

val TNum

The number to check.

Returns

[bool](#) 

[true](#)  if the value is even; otherwise, [false](#) .

Type Parameters

TNum

The number type.

IsOdd<TNum>(TNum)

Checks if a number is odd.

```
public static bool IsOdd<TNum>(TNum val) where TNum : INumber<TNum>
```

Parameters

val TNum

The number to check.

Returns

[bool](#)

[true](#) if the value is odd; otherwise, [false](#).

Type Parameters

TNum

The number type.

Map<TNum>(TNum, Range<TNum>, Range<TNum>)

Maps a value from the input range to the output range.

```
public static TNum Map<TNum>(TNum val, Range<TNum> input, Range<TNum> output) where TNum : INumber<TNum>
```

Parameters

val TNum

The value to map.

input [Range](#)<TNum>

The input range.

output [Range](#)<TNum>

The output range.

Returns

TNum

val, mapped from the **input** range to the **output** range.

Type Parameters

TNum

The number type.

Mod<TNum>(TNum, TNum)

Returns the true modulo of a number. Works with negative numbers correctly.

```
public static TNum Mod<TNum>(TNum value, TNum modulus) where TNum : INumber<TNum>
```

Parameters

value TNum

The value to apply the modulus operator on.

modulus TNum

The modulus to apply.

Returns

TNum

The **modulus** remainder of **value** after division.

Type Parameters

TNum

The number type.

Class NumberExtensions

Namespace: [FireBlade.CsTools.Numbers](#)

Assembly: CsTools.dll

Extends number types such as [int](#), [float](#), or [double](#).

```
public static class NumberExtensions
```

Inheritance

[object](#) ← NumberExtensions

Inherited Members

[object.Equals\(object\)](#), [object.Equals\(object, object\)](#), [object.GetHashCode\(\)](#), [object.GetType\(\)](#), [object.MemberwiseClone\(\)](#), [object.ReferenceEquals\(object, object\)](#), [object.ToString\(\)](#)

Methods

IsInRange<TNum>(TNum, Range<TNum>)

Checks if the specified number is in a range.

```
public static bool IsInRange<TNum>(this TNum val, Range<TNum> range) where TNum  
: INumber<TNum>
```

Parameters

val TNum

The value to test.

range [Range](#)<TNum>

The range to check the value against.

Returns

[bool](#)

[true](#) if the value is in range; otherwise, [false](#).

Type Parameters

TNum

The number type.

Exceptions

[ArgumentOutOfRangeException](#)

The minimum value is larger than the maximum value.

IsInRange<TNum>(TNum, decimal, decimal)

Checks if the specified number is in a range.

```
public static bool IsInRange<TNum>(this TNum val, decimal min, decimal max) where TNum
: INumber<TNum>
```

Parameters

val TNum

The value to test.

min [decimal](#)

The minimum value of the range.

max [decimal](#)

The maximum value of the range.

Returns

[bool](#)

[true](#) if the value is in range; otherwise, [false](#).

Type Parameters

TNum

The number type.

Exceptions

[ArgumentOutOfRangeException](#)

The minimum value is larger than the maximum value.

IsInRange<TNum>(TNum, double, double)

Checks if the specified number is in a range.

```
public static bool IsInRange<TNum>(this TNum val, double min, double max) where TNum
: INumber<TNum>
```

Parameters

val TNum

The value to test.

min [double](#)

The minimum value of the range.

max [double](#)

The maximum value of the range.

Returns

[bool](#)

[true](#) if the value is in range; otherwise, [false](#).

Type Parameters

TNum

The number type.

Exceptions

[ArgumentOutOfRangeException](#)

The minimum value is larger than the maximum value.

IsInRange<TNum>(TNum, int, int)

Checks if the specified number is in a range.

```
public static bool IsInRange<TNum>(this TNum val, int min, int max) where TNum
: INumber<TNum>
```

Parameters

val TNum

The value to test.

min [int](#)

The minimum value of the range.

max [int](#)

The maximum value of the range.

Returns

[bool](#)

[true](#) if the value is in range; otherwise, [false](#).

Type Parameters

TNum

The number type.

Exceptions

[ArgumentOutOfRangeException](#)

The minimum value is larger than the maximum value.

IsInRange<TNum>(TNum, float, float)

Checks if the specified number is in a range.

```
public static bool IsInRange<TNum>(this TNum val, float min, float max) where TNum
: INumber<TNum>
```

Parameters

val TNum

The value to test.

min [float](#)

The minimum value of the range.

max [float](#)

The maximum value of the range.

Returns

[bool](#)

[true](#) if the value is in range; otherwise, [false](#).

Type Parameters

TNum

The number type.

Exceptions

[ArgumentOutOfRangeException](#)

The minimum value is larger than the maximum value.

IsInRange<TNum>(TNum, TNum, TNum)

Checks if the specified number is in a range.

```
public static bool IsInRange<TNum>(this TNum val, TNum min, TNum max) where TNum
: INumber<TNum>
```

Parameters

val TNum

The value to test.

min TNum

The minimum value of the range.

max TNum

The maximum value of the range.

Returns

[bool](#)[↗]

[true](#)[↗] if the value is in range; otherwise, [false](#)[↗].

Type Parameters

TNum

The number type.

Exceptions

[ArgumentOutOfRangeException](#)[↗]

The minimum value is larger than the maximum value.

Class Range<TNum>

Namespace: [FireBlade.CsTools.Numbers](#)

Assembly: CsTools.dll

Represents a range of numbers.

```
public class Range<TNum> where TNum : INumber<TNum>
```

Type Parameters








TNum

The number type.

Inheritance

[object](#)  ← Range<TNum>

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#) 

Constructors

Range(TNum, TNum)

Creates a new instance of the [Range<TNum>](#) class.

```
public Range(TNum min, TNum max)
```

Parameters

min TNum

max TNum

Properties

Length

Gets the difference between the [Maximum](#) value and the [Minimum](#) value.

```
public TNum Length { get; }
```

Property Value

TNum

Maximum

Gets or sets the maximum value of the [Range<TNum>](#).

```
public TNum Maximum { get; set; }
```

Property Value

TNum

Exceptions

[ArgumentOutOfRangeException](#)[☞]

The minimum value is larger than the maximum value.

Minimum

Gets or sets the minimum value of the [Range<TNum>](#).

```
public TNum Minimum { get; set; }
```

Property Value

TNum

Exceptions

[ArgumentOutOfRangeException](#)↗

The minimum value is larger than the maximum value.

Methods

IsInRange(TNum)

Checks if the specified number is in the range.

```
public bool IsInRange(TNum val)
```

Parameters

val TNum

The value to test.

Returns

[bool](#)↗

[true](#)↗ if the value is in range; otherwise, [false](#)↗.

Exceptions

[ArgumentOutOfRangeException](#)↗

The minimum value is larger than the maximum value.