

Chương 7

STRINGS

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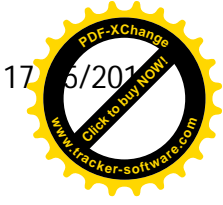
- ## Characters and Strings
- Characters :
 - Decimal digits
 - Letters
 - Special symbols
 - Strings :
 - Tập hợp các Characters
 - Bao gồm:
 - Decimal digits
 - Letters
 - Special symbols

```
string color = "blue";
```

b	l	u	e						
0	1	2	3						

```
string file = "C:\\MyFolder\\MySubFolder\\MyFile.txt";
```

```
string file = @"C:\MyFolder\MySubFolder\MyFile.txt";
```



string Constructors

```
string1 = "Welcome to C# programming!"
string2 = "birth day"
string3 = "day"
string4 = "cccc"
```

```
string string0, string1, string2, string3, string4;
char[] characterArray = { 'b', 'i', 'r', 't', 'h', ' ', ' ', 'd', 'a', 'y' };
string0 = "Welcome to C# programming!";
string1 = string0;
string2 = new string( characterArray );
string3 = new string( characterArray, 6, 3 );
string4 = new string( 'C', 5 );
Console.WriteLine( "string1 = " + "\"" + string1 + "\"\n" +
"string2 = " + "\"" + string2 + "\"\n" + "string3 = " + "\"" + string3
+ "\"\n" + "string4 = " + "\"" + string4 + "\"\n");
```

string Indexer, Length Property and CopyTo Method

```
string string1;
char[] characterArray;
string1 = "hello there";
characterArray = new char[ 5 ];
Console.WriteLine( "string1: \"\" + string1 + "\"");
Console.WriteLine( "Length of string1: " + string1.Length );
Console.WriteLine( "The string reversed is: " );
for ( int i = string1.Length - 1; i >= 0; i-- )
    Console.WriteLine( string1[ i ] );
string1.CopyTo( 0, characterArray, 0, characterArray.Length );
Console.WriteLine( "\nThe character array is: " );
for ( int i = 0; i < characterArray.Length; i++ )
    Console.WriteLine( characterArray[ i ] );
Console.WriteLine( "\n" );
```

```
string1: "hello there"
Length of string1: 11
The string reversed is: ereht olleh
The character array is: hello
```

Comparing strings

```
string1.Equals( "hello" )
string.Equals( string3, string4 )
string1 == "hello"
string1.CompareTo( string2 ) //0; 1;-1
strings[ i ].StartsWith( "st" )
strings[ i ].EndsWith( "ed" )
```

Locating Characters and Substrings in strings

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

string st1 = "abcdefghijklmabcdefghijklm";

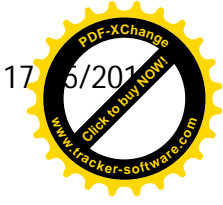
st1.IndexOf('c') 2 15

 "def" 13 13

st1.IndexOf('\$', 3, 5) -1 -1

LastIndexOf(...)

Nếu không tìm thấy sẽ trả về -1



```
string letters = "abcdefghijklmabcdefghijklm";  
char[] searchLetters = { 'c', 'a', 'z' };
```

```
IndexOfAny( searchLetters );  
IndexOfAny( searchLetters, n );  
IndexOfAny( searchLetters , n, m );  
LastIndexOfAny( searchLetters );  
LastIndexOfAny( searchLetters , n );  
LastIndexOfAny( searchLetters , n, m );
```

Extracting Substrings from strings

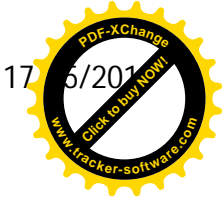
```
string letters = "abcdefghijklmabcdefghijklm";  
letters.Substring( 20 )  
letters.Substring( 0, 6 )
```

Concatenating strings

```
string string1 = "Happy ";  
string string2 = "Birthday";  
String string3="";  
  
string3 = string1 + string2;  
string3 = string.Concat( string1, string2 )
```

string methods Replace, ToLower, ToUpper, Trim and Length

```
string chuoi = "abCdeFgh ";  
Console.WriteLine(chuoi.Replace( 'e', 'E' ));  
Console.WriteLine(chuoi.ToUpper());  
Console.WriteLine(chuoi.ToLower());  
Console.WriteLine(chuoi.Trim());  
chuoi.Length;
```



StringBuilder class constructors

using System.Text;

```
StringBuilder buffer1, buffer2, buffer3;
```

```
buffer1 = new StringBuilder();
```

```
buffer2 = new StringBuilder( 10);
```

```
buffer3 = new StringBuilder( "hello");
```

```
""
""
"hello"
```

```

object objectValue = "hello";
string stringValue = "good bye";
char[] characterArray = { 'a', 'b', 'c', 'd', 'e', 'f' };
bool booleanValue = true;
char characterValue = 'Z';
int integerValue = 7;
long longValue = 1000000;
float floatValue = 2.5F;
double doubleValue = 33.333;
StringBuilder buffer = new StringBuilder();
buffer.Append( objectValue );      hello
buffer.Append( " " );              Hello
buffer.Append( stringValue );     hello good bye
buffer.Append( " " );              hello good bye
buffer.Append( characterArray );   hello good bye abcdef
buffer.Append( " " );              hello good bye abcdef
buffer.Append( characterArray, 0, 3 ); hello good bye abcdef abc
buffer.Append( " " );              hello good bye abcdef abc
buffer.Append( booleanValue );     hello good bye abcdef abc True
buffer.Append( " " );              hello good bye abcdef abc True
buffer.Append( characterValue );   hello good bye abcdef abc True Z
buffer.Append( " " );              hello good bye abcdef abc True Z
buffer.Append( integerValue );     hello good bye abcdef abc True Z 7
buffer.Append( " " );              hello good bye abcdef abc True Z 7
buffer.Append( longValue );        hello good bye abcdef abc True Z 7 1000000
buffer.Append( " " );              hello good bye abcdef abc True Z 7 1000000
buffer.Append( floatValue );      hello good bye abcdef abc True Z 7 1000000 2.5
buffer.Append( " " );              hello good bye abcdef abc True Z 7 1000000 2.5
buffer.Append( doubleValue );     hello good bye abcdef abc True Z 7 1000000 2.5 33.333

```

Append

Insert, Remove and Replace in StringBuilder

```
StringBuilder buffer = new StringBuilder();
```

```
double doubleValue = 33.333;
```

```
buffer="hello good";
```

```
buffer.Insert(6, doubleValue );
```

```
buffer.Remove( 9, 3 ); // Xoá 333 trong 33.333
```

```
builder1.Replace( "Jane", "Greg" );
```

```
builder2.Replace( 'g', 'G', 0, 5 );
```

Char Methods

```

char character = Convert.ToChar( textBox1.Text );
string output;
output = "is digit: " + Char.IsDigit(character) + "\r\n";
output += "is letter: " + Char.IsLetter( character ) + "\r\n";
output += "is letter or digit: " + Char.IsLetterOrDigit( character ) + "\r\n";
output += "is lower case: " + Char.IsLower( character ) + "\r\n";
output += "is upper case: " + Char.IsUpper( character ) + "\r\n";
output += "to upper case: " + Char.ToUpper( character ) + "\r\n";
output += "to lower case: " + Char.ToLower( character ) + "\r\n";
output += "is punctuation: " + Char.IsPunctuation( character ) + "\r\n";
output += "is symbol: " + Char.IsSymbol( character );
textBox2.Text = output;

```