1.    **Describe the strings in C#**. What is typical for the **string** type? Explain which the most important methods of the string class are.

2.    Write a program that reads a string, **reverse** it and prints it to the console.

using System;

using System.Linq;

namespace Detyra2

{

class Program

{

static void Main(string[] args)

{

//Menyra e 1

var str1 = Console.ReadLine();

char[] charArray = str1.ToCharArray();

Array.Reverse(charArray);

foreach (var str in charArray)

{

Console.Write(str);

}

Console.WriteLine();

//Menyra 2

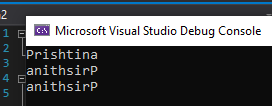
Console.WriteLine(string.Join("", str1.Reverse()));

Console.ReadKey();

}

}

}



3.    Write a program that **checks whether the parentheses are placed correctly** in an arithmetic expression. Example of expression with correctly placed brackets: **((a+b)/5-d)**. Example of an incorrect expression: **)(a+b))**.

|  |
| --- |
| Using System; |
|  |  |
|  | namespace Detyra3 |
|  | { |
|  | class Program |
|  | { |
|  | static void Main(string[] args) |
|  | { |
|  | Console.Write("Enter equation: "); |
|  | string input = Console.ReadLine(); |
|  | int counter = 0; |
|  |  |
|  | for (int i = 0; i < input.Length; i++) |
|  | { |
|  | if (input[i] == '(') counter++; |
|  | if (input[i] == ')') counter--; |
|  | if (counter < 0) break; |
|  | } |
|  |  |
|  | if (counter == 0) Console.WriteLine("Correct equation."); |
|  | else Console.WriteLine("Wrong equation!"); |
|  |  |
|  | Console.ReadLine(); |
|  | } |
|  | } |
|  | } |

4.    How many backslashes you must specify as an argument to the method **Split(…)** in order to **split the text by a backslash**?

Example: **one\two\three**.

Note: In C# backslash is an escaping character.

5.    Write a program that detects how many times a substring is contained in the text occurrences.

using System;

namespace Detyra5

{

class Program

{

static void Main(string[] args)

{

int strt = 0;

int cnt = -1;

int idx = -1;

Console.Write("Input a random text: ");

string strng = Console.ReadLine();

Console.Write("Input the string to be searched for: ");

string findstring = Console.ReadLine();

while (strt != -1)

{

strt = strng.IndexOf(findstring, idx + 1);

cnt += 1;

idx = strt;

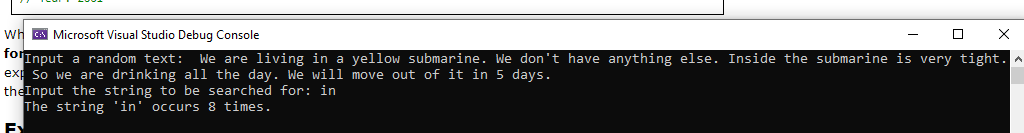
}

Console.Write("The string '{0}' occurs " + cnt + " times.\n", findstring);

}

}

}



6.    A text is given. Write a program that **modifies the casing** of letters to uppercase at all places in the text surrounded by **<upcase>** and **</upcase>** tags. Tags cannot be nested.

|  |
| --- |
| using System; |
|  |  |
|  | namespace Detyra6 |
|  | { |
|  | public class Program |
|  | { |
|  | static void Main(string[] args) |
|  | { |
|  | string text = "We are living in a <upcase>yellow submarine</upcase>. We don't have <upcase>anything</upcase> else.", insideTag; |
|  | int startUpCase, endUpCase; |
|  |  |
|  | Console.WriteLine("Original text: \n{0}\n", text); |
|  |  |
|  | do |
|  | { |
|  | startUpCase = text.IndexOf("<upcase>", 0) + 8; |
|  | endUpCase = text.IndexOf("</upcase>", startUpCase); |
|  | insideTag = text.Substring(startUpCase, endUpCase - startUpCase).ToUpper(); |
|  | text = text.Remove(startUpCase, endUpCase - startUpCase); |
|  | text = text.Insert(startUpCase, insideTag); |
|  | text = text.Remove(startUpCase - 8, 8); |
|  | text = text.Remove(endUpCase - 8, 9); |
|  | } while (text.Contains("<upcase>") && text.Contains("</upcase>")); |
|  |  |
|  | Console.WriteLine("Modified text: \n{0}\n", text); |
|  | Console.ReadLine(); |
|  | } |
|  | } |
|  | } |

7.    Write a program that reads a string from the console (20 characters maximum) and if shorter complements it right with "**\***" to 20 characters.

|  |
| --- |
| using System; |
|  |  |
|  | namespace Detyra7 |
|  | { |
|  | public class Program |
|  | { |
|  | static void Main(string[] args) |
|  | { |
|  | Console.Write("Input text (20 char max): "); |
|  | string text = Console.ReadLine(); |
|  |  |
|  | text = text.PadRight(20, '\*'); |
|  |  |
|  | Console.WriteLine(text); |
|  | Console.ReadLine(); |
|  | } |
|  | } |
|  | } |

8.    Write a program that converts a given string into the form of array of Unicode escape sequences in the format used in the C# language. Sample input: "**Test**". Result: "**\u0054\u0065\u0073\u0074**".

|  |
| --- |
| using System; |
|  |  |
|  | namespace Detyra8 |
|  | { |
|  | public class Program |
|  | { |
|  | static void Main(string[] args) |
|  | { |
|  | Console.Write("Input text: "); |
|  | string text = Console.ReadLine(); |
|  | foreach (char c in text) Console.Write("\\u{0:x4}", ((int)c)); |
|  | Console.ReadLine(); |
|  | } |
|  | } |
|  | } |

9.    Write a program that **encrypts a text** by applying XOR (excluding or) operation between the given source characters and given cipher code. The encryption should be done by applying XOR between the first letter of the text and the first letter of the code, the second letter of the text and the second letter of the code, etc. until the last letter of the code, then goes back to the first letter of the code and the next letter of the text. Print the result as a series of Unicode escape characters **\xxxx**.

|  |
| --- |
| using System; |
|  |  |
|  | namespace Detyra9 |
|  | { |
|  | public class Program |
|  | { |
|  | static void Main(string[] args) |
|  | { |
|  | string text = "We are living in a yellow submarine. We don't have anything else. Inside the submarine is very tight. So we are drinking all the day. We will move out of it in 5 days."; |
|  |  |
|  | string[] sentences = text.Split('.'); |
|  |  |
|  | foreach (string str in sentences) |
|  | if (str.IndexOf(" in ") != -1 || str.IndexOf("In ") != -1) Console.WriteLine(str + '.'); |
|  |  |
|  | Console.ReadLine(); |
|  | } |
|  | } |
|  | } |

10.   Write a program that **extracts from a text all sentences that contain a particular word**. We accept that the sentences are separated from each other by the character "**.**" and the words are separated from one another by a character which is not a letter.

|  |
| --- |
| using System; |
|  |  |
|  | namespace Detyra10 |
|  | { |
|  | public class Program |
|  | { |
|  | static void Main(string[] args) |
|  | { |
|  | string text = "Microsoft announced its next generation C# compiler today. It uses advanced parser and special optimizer for the Microsoft CLR.", forbiddenWords = "C#,CLR,Microsoft"; |
|  | string[] forbiddenWordsArr = forbiddenWords.Split(','); |
|  | string[] censoredForbiddenWordsArr = new string[forbiddenWordsArr.Length]; |
|  |  |
|  | for (int i = 0; i < forbiddenWordsArr.Length; i++) |
|  | censoredForbiddenWordsArr[i] = new string('\*', forbiddenWordsArr[i].Length); |
|  |  |
|  | for (int i = 0; i < forbiddenWordsArr.Length; i++) |
|  | text = text.Replace(forbiddenWordsArr[i], censoredForbiddenWordsArr[i]); |
|  |  |
|  | Console.WriteLine(text); |
|  |  |
|  | } |
|  | } |

 11. A string is given, composed of several **"forbidden" words** separated by commas. Also a text is given, containing those words. Write a program that **replaces the forbidden words with asterisks**.

|  |
| --- |
| using System; |
|  |  |
|  | namespace Detyra11 |
|  | { |
|  | public class Program |
|  | { |
|  | static void Main(string[] args) |
|  | { |
|  | Console.Write("Input number: "); |
|  | int number = System.Convert.ToInt32(Console.ReadLine()); |
|  |  |
|  | Console.WriteLine("{0, -15} {1, 15}", "Decimal:", number); |
|  | Console.WriteLine("{0, -15} {1, 15}", "Hexadecimal:", number.ToString("X")); |
|  | Console.WriteLine("{0, -15} {1, 15}", "Currency:", string.Format("{0:C}", number)); |
|  | Console.WriteLine("{0, -15} {1, 15}", "Percent:", string.Format("{0:P2}", number)); |
|  | Console.WriteLine("{0, -15} {1, 15}", "Scientific:", number.ToString("\\0.#####E0")); |
|  |  |
|  | } |
|  | } |
|  | } |

13.   Write a program that **parses an URL** in following format:

|  |
| --- |
| using System; |
|  |  |
|  | namespace Detyra13 |
|  | { |
|  | class Program |
|  | { |
|  | static void Main(string[] args) |
|  | { |
|  | string text = "<p>Please visit <a href=\"http://softuni.bg\">our site</a> to choose a software engineering training course. Also visit<a href=\"http://softuni.bg" + "/forum\">our forum</a> to discuss the courses.</ p >"; |
|  | text = text.Replace("<a href=\"", "[URL="); |
|  | text = text.Replace("\">", "]"); |
|  | text = text.Replace("</a>", "[/URL]"); |
|  |  |
|  | Console.WriteLine(text); |
|  |  |
|  | } |
|  | } |
|  | } |

25.   Write a program that reads a list of words separated by commas from the console and prints them in alphabetical order (after **sorting**).

using System;

using System.Linq;

namespace Detyra25

{

class Program

{

static void Main(string[] args)

{

Console.WriteLine("Enter randoms Input: ");

var strng = Console.ReadLine();

var str = strng.Split(",");

Array.Sort(str);

foreach (var arr in str)

{

Console.WriteLine(arr);

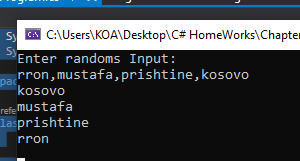
}

Console.ReadLine();

}

}

}



.Laberion Ex.1

using System;

namespace DetyraEx1

{

class Program

{

static void Main(string[] args)

{

Console.Write("Input the string: ");

var str = Console.ReadLine();

var l = 0;

var word = 1;

while (l <= str.Length - 1)

{

if (str[l] == ' ' || str[l] == '\n' || str[l] == '\t')

{

word++;

}

l++;

}

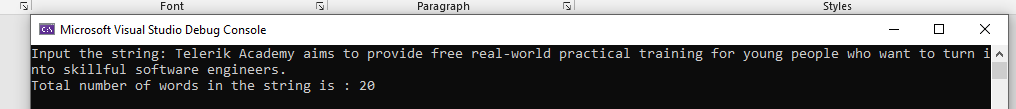
Console.Write("Total number of words in the string is : {0}\n", word);

Console.ReadKey();

}

}

}



.Laberion Ex.2

using System;

namespace DetyraEx2

{

class Program

{

static void Main(string[] args)

{

int krahasimi = 0;

int vlera = 0;

Console.WriteLine("Enter text one");

var str1 = Console.ReadLine();

Console.WriteLine("Enter text two");

var str2 = Console.ReadLine();

if (str1.Length == str2.Length)

{

for (int i = 0; i < str1.Length; i++)

{

if (str1[i] != str1[i])

{

vlera = 1;

i = str1.Length;

}

}

}

if (str1.Length == str2.Length) krahasimi = 0;

else if(str1.Length > str2.Length) krahasimi = 1;

else if(str1.Length < str2.Length) krahasimi = -1;

if (krahasimi == 0)

{

if(vlera == 1)

Console.Write("The length of both strings are equal and \nalso, both strings are same.\n\n");

else

Console.Write("\nThe length of both strings are equal \nbut they are not same.\n\n");

}

if (krahasimi == 1)

Console.WriteLine("The first string is greater than second");

if (krahasimi == -1)

Console.WriteLine("The second array is greater than first ");

Console.ReadKey();

}

}

}

