**Homework: Introduction to Programming**

This document defines homework assignments from the [“C# HYPERLINK "http://softuni.bg/courses/csharp-basics/"BasicsHYPERLINK "http://softuni.bg/courses/csharp-basics/"“ Course @ Software University](http://softuni.bg/courses/csharp-basics/). Please submit as homework a single **zip** / **rar** / **7z** archive holding the solutions (source code only) of all below described problems.

* **Play with Visual Studio**

Familiarize yourself with Microsoft Visual Studio (if you already have it installed) or **install Visual Studio** (or Visual Studio Express) at your laptop or home computer. Search in Internet for the correct download link: <http://google.com/search?q=download+visual+studio>. You do not have to submit anything in your homework for this problem.

Start Visual Studio and play with it. **Create a simple C# program** (console application), compile and run it.

* **Blank Solution in Visual Studio**

Create a **blank solution** in Visual Studio called “**Intro-Programming-Homework**”. This solution will hold all your homework projects, code and files. For each problem (exercises) add a separate project with self-descriptive name like “**Hello-World**” and “**Print-Your-Name**”. You do not have to submit anything in your homework for this problem.

* **Play with MSDN Library**

Play with Microsoft Developer Network (MSDN) Library Documentation. You may find it online at <http://msdn.microsoft.com/library>.

* Find information about **Console.WriteLine()** method in MSDN.
* Find information about the **Console** class.
* Find information about the **class** keyword.

You do not have to submit anything in your homework for this problem.

* **Hello World**

Create, compile and run a **“Hello C#” console application**. Ensure you have named the application well (e.g. “”**HelloCSharp**”). You should submit the Visual Studio project holding the **HelloCSharp** class as part of your homework.

* **Print Your Name**

Modify the previous application to **print your name**. Ensure you have named the application well (e.g. “**PrintMyName**”). You should submit a separate project Visual Studio project holding the **PrintMyName** class as part of your homework.

* **Print Numbers**

Write a program to print the numbers **1**, **101** and **1001**, each at a separate line. Name the program correctly. You should submit in your homework the Visual Studio project holding the source code of the **PrintNumbers** program.

* **Print First and Last Name**

Create console application that **prints your first and last name**, each at a separate line.

* **Square Root**

Create a console application that calculates and prints the **square root** of the number 12345. Find in Internet “how to calculate square root in C#”.

* **Print a Sequence**

Write a program that prints the first 10 members of the sequence: 2, -3, 4, -5, 6, -7, ...

* **Reformat C# Code**

Reformat the following C# code to **make it readable** according to the C# best practices for code formatting. Change the casing of the identifiers in the code (e.g. use **PascalCase** for the class name):

|  |
| --- |
| **HorribleCode.cs** |
| using  System;  class hoRRiblEcoDe  {  static  void  Main()  {  Console.  WriteLine("Hi, I am horribly formatted program"  ); Console.  WriteLine("Numbers and squares:")  ; for (int i = 0;  i < 10;  i++)  {  Console.WriteLine(i +  " --> " + i  \*  i);  }  }  } |

* **Programming Languages**

Perform a research (e.g. in Google or Wikipedia) and provide a short list with information about the most popular programming languages. How similar are they to C#? How do they differ from C#? Write in a text file called “**programming-languages.txt**” at least five languages along with 2-3 sentences about each of them. Use English.

* **Development Environments**

Perform a research (e.g. in Google or Wikipedia) and provide a short list with popular development environments (IDEs) like Visual Studio. Write in a text file called “**list-of-IDEs.txt**” at least five IDEs along with 2-3 sentences about each of them. Use English.

* **C# and .NET Differences**

Describe the difference between C# and .NET Framework in 2-3 sentences. Write your description in a text file called “**csharp-and-dot-net-framework.txt**”. Use English.

* **\* Current Date and Time**

Create a console application that **prints the current date and time**. Find in Internet how.

* **\* Age after 10 Years**

Write a program to read your birthday from the console and print how old you are now and how old you will be after 10 years.

* **\* Print Long Sequence**

Write a program that prints the first 1000 members of the sequence: 2, -3, 4, -5, 6, -7, … You might need to learn how to use loops in C# (search in Internet).

* **\* Play with the Debugger in Visual Studio**

Write a program that prints at the console the numbers from 1 to 1000, each at a separate line. You might need to learn how to use loops (search in Internet). Set a **breakpoint** in the line, which prints the next number in the Visual Studio code editor. Run the program through the debugger using the [F5] key. When the debugger stops at the breakpoint trace the code execution with [F10] key. You do not have to submit anything in your homework for this problem. Just play with the debugger to learn how it works.