Hand-out

Programming

II. “Hello world!”

1. **Programming with C#**

   C# or c-sharp is the language with which we will learn computer programming.

   You can program a computer in many different languages but the good thing is that most of them are very similar and look alike so once you can program C# you can quickly learn to adapt to other languages if you choose to.

   C# is also the language you use to interact with a framework like .net or "dot net". This framework consists of many pre-programmed libraries and functions for you to use out of the box.

   .NET is not a programming language, it is the framework which we "again" program against with the C# programming language.

   C# is a compile time programming language which means that a "interpreter" has to "compile" C# into bytecode which is the ones and zeros.

2. **The .NET Framework**

   .net is the framework that Microsoft has built for you to program on to with different languages, one of them is C# another one is F#. The .net framework is HUGE and even so HUGE that one is literally unable to memorize every bit of it. And this is why we introduce the Microsoft Developer Network .a.k.a. The Documentation :

   https://msdn.microsoft.com/en-us/library/ff361664(v=vs.110).aspx

   Whenever you are programming in C#, keep this with you at all times since all answers to all questions can be found here.

   .net libraries are loaded into your program using the reserved keyword "using" in the header of you program like this :

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
```

3. **Namespaces**

   Namespaces you can view as the domain in which your program or parts of your program run for easy access in other different parts of one's code.

```
namespace HelloWorld
{
    // program
}
```

4. **The Program**

   The program itself is what we call a class. A class is a readable version of the "object instantiation". When we program we program in classes, especially when it comes to C#, C# is what we call an Object Oriented Programming Language (OOP) and very different from Javascript for example which is a static programming language, actually a scripting language.

   Every program has what we call a "constructor". This is the exact place in which the interpreter of the compiler actually starts the index automatically. This means that your program is automatically run from this position, we annotate it as following:

```
namespace HelloWorld
{
    class Program
    {
        static void Main(string[] args)
        {
            // program
        }
    }
}
```

   The Main function is now our "constructor" in which we execute all other code. This function is made "static" and does not have a "return value" which is the reason for the reserved keyword "void". More on that later.

   I keep saying "reserved" due to the fact that certain "keywords" in the C# programming language and .net framework are as the saying goes "reserved" and can therefore can never be used by the programmer.

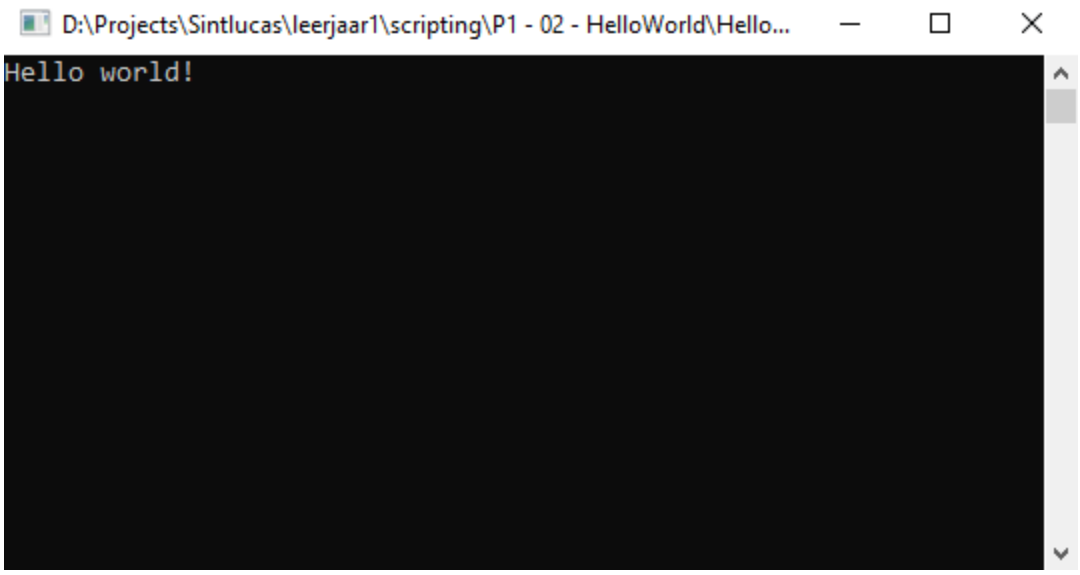
Remember this.

5. **Syntax**

   Syntax refers to the way we write our code, its structure and way of behavior. This is predominantly defined by the programming language. Every programmer is bound to the syntax of a language and we can not break these.

6. **Let’s code together!**

   The demo is done live and it’s important that you follow every step. After this step you will be on your own with an assignment to see if you understood the lesson.



7. Assignment

Create a program that asks for your name and your age, the put this information together and display the results on the screen. Like this!