

Computer Science - Summer Work

C# Basics

The programming elements of the course are taught using C#. C# is chosen because it is an object-oriented language, that is very commonly used in the working world and highly sought after by employers.

It is your responsibility to get to grips with the basics of coding in C# including:

- Casting and initialising variables (integer, string, bool)
- Writing to and reading from the screen/user input
- Branching and iteration techniques including IF, FOR and WHILE
- Defining an Array and a List

To support you in learning these basics, and a few more, please complete the tutorials at:

<http://www.learncs.org/>

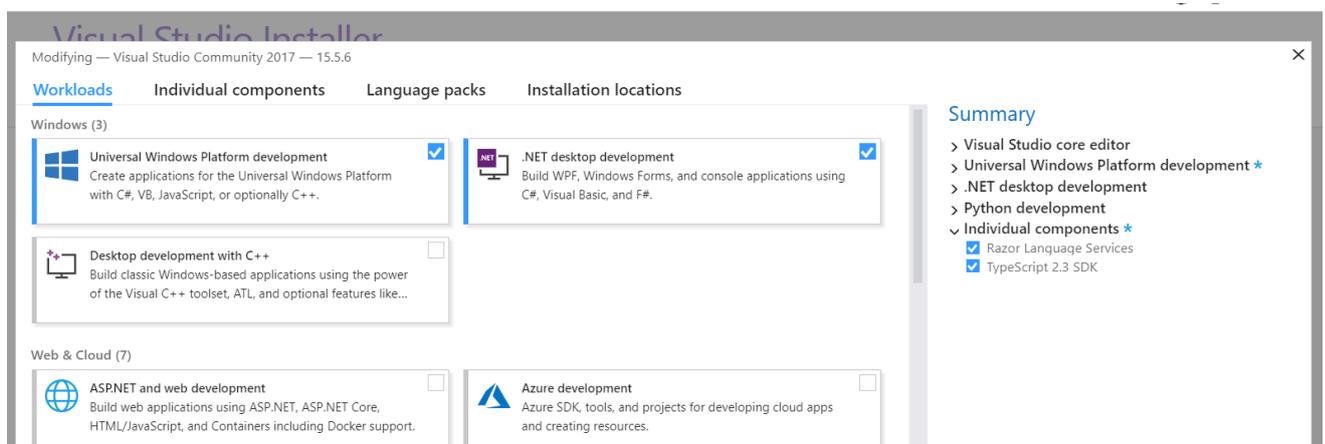
If you are able to get hold of this: <https://www.amazon.co.uk/Beginners-Hands-Project-Coding-Project-ebook/dp/BOI6ZI8MLG> book I would also recommend it as an excellent starting guide to C#. However, this is not essential. Please enquire in the library, as we may have some copies available to loan.

Visual Studio

The Integrated Development Environment that we use during the course is visual studio. If you have access to a computer at home, please install the free community license version of visual studio:

<https://visualstudio.microsoft.com/vs/community/>

And install the C# elements within visual studio (see the ticked parts in the picture):



We will mainly be developing console applications.

If you can't get hold of visual studio, you can still attempt to write C#, without an IDE, using a basic notepad .txt file.

If you have done GCSE Computer Science:

Take a piece of code that you have written in your GCSE course and convert it to C#. You may not be fully successful, but I will be looking for evidence that you have attempted the conversion and can explain the difficulties in doing so. I will expect to see the original (non-C#) code, and the converted (C#) code.

If you have not done GCSE Computer Science:

Use BBC bitesize (complete all of the tests)

<https://www.bbc.com/education/subjects/z34k7ty>

While it is not essential that you have done GCSE computer science to do A Level computer science, familiarising yourself with a high-level understanding of the topic areas is very useful.

Assessment

During the first week of the course, in September, we will be assessing you on your basic C# and programming understanding, through a series of activities.

You will also be assessed on your GCSE level understanding of computer science. This assessment will give us a key understanding of where each person's current knowledge is and how certain elements of the course can be delivered most effectively.

The purpose of both assessments is to inform teaching and will not reflect on you individually.