Welcome to Colleton Code Club!

Introduction

Thanks for turning up everyone! You're all members of a special **Code Club** that we're going to be running between 5pm and 6pm Thursdays at the Colleton. The idea is to introduce you to a **programming** language called Python which can help you build upon what you've learned with Scratch and take you much further in learning about computers and how to control them. Programming is the process of instructing a computer how to do something and the output from programming is called **software**. To write software, instructions have to be written in a language the computer will understand - **computer code**. Code is how you get the computer to express itself. Whenever you use a computer in a device like a tablet or a smartphone or a PC, you're interfacing with software that was developed by many different programmers. Without software a computer is really just a dumb box. There are many types of code that are used to program computers – you already know about Scratch of course. Another language you may have heard of especially if you're into Minecraft mods is Java.

Python is a programming language very well suited for starting your adventures in coding but it is no toy. It is a powerful tool widely used today at places like Google, NASA and Pixar where Toy Story was created. It is also the main language for accessing and controlling a **Raspberry Pi**. So what you're about to start learning in this Code Club is "serious fun".

How Code Club works

During the lessons you will be using a very simple Python environment called **IDLE**. The IDLE environment works by reading the code you write, processing that code and then outputting results as required:

input code -> processing -> printed output

It's important to learn to write the code yourselves letter by letter into IDLE during the lesson. You should try and work through the lesson and understand the material as well as have lots of fun. You should aim to understand what you're doing rather than just copy the exercises without thinking because learning to code is a journey not a "test" and it's important you take your time because it will really benefit you in the future if you do. Plenty of time has been built into the lessons for you to try things out.

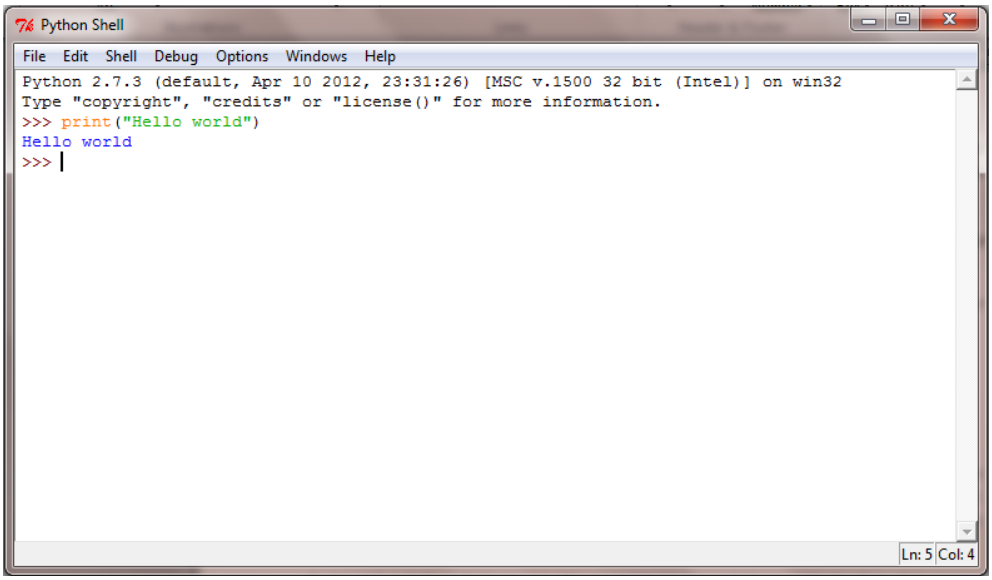
Don't worry if you get it wrong – you can't break anything writing Python! In fact it's really good to study the error messages and try to understand them and fix errors yourself because it will help you to learn to do so and that's what you will have to do when developing your own code in the future. If you really are stuck at any point during the session, though, just ask for help because we don't want you to get bored and lose focus!

It's worth bringing some paper and pencils and you should use them if you need to sketch out how you will tackle coding problems. There will also be printouts covering the material in each lesson. In those printouts, actual Python code is written in `Courier font`. And Exercises where you get to try writing code are clearly blocked. If you have some spare time during a lesson, try experimenting in IDLE either on your own or with one another and again feel free to ask me questions if you don't understand anything.

Each lesson will end with a **code quest** that you can take further after the lesson either by yourselves or working with each other afterwards. We will start each lesson by looking back at what we did before and checking if anyone had any questions from further work they did. The theme of each code quest will be **Secret Codes** which you might want to use with your school friends to exchange secret messages ☺ Later on we'll learn how you can "break" these secret codes and move on to build more secure ones.

Tools

It's very important that you are comfortable and familiar with the tools you will use to develop Python. And the key tool is IDLE. You can use IDLE in one of two ways: i) interpreter mode, ii) file mode. In interpreter mode, you type your Python code at a **command prompt** or >>>. In file mode, you use IDLE to save your code to text files which you can build upon over time. You can launch IDLE from the Python menu option on Windows. Below is a screenshot of IDLE in interpreter mode. To change to file mode, you need to go to Options -> Configure IDLE -> General and click on the startup preference. It's also a good idea to change the key mapping to Windows so that file editing shortcuts are the same as on Word:



We hope you find Python as fun and interesting to play with as many grown-ups do – now let's get on with the lessons.

Happy Hacking!