CPADS Programming Activity I – Due 9/11

“Hello Python!”

The goal of this section of the course is to introduce fundamental programming constructs using a simple scripting language, Python. This approach will allow us to focus on *programming* rather than *syntax*, i.e. formulating a procedural solution. To accomplish this task we will write both *console* programs that process text files, as well as *turtle graphics* programs where we draw graphics in an “Etch-a-Sketch” fashion.

A program is nothing more than a text file(s) that is either compiled or run via an interpreter such as Python. Programs can be written using any simple text editor such as Notepad. However, it is often more convenient to use an IDE (*I*ntegrated *D*evelopment *E*nvironment) that provides a graphical interface and incorporates additional functionality into the editor. An IDE typically provides *syntactical highlighting* so that different structures of a program can be quickly identified (e.g. variables, keywords, block structures, comments, etc.). Many IDE's also support debugging features to help track down errors interactively, particularly semantic errors. In this class, we will be using a common IDE for Python called IDLE. This activity is intended to help you get acquainted with IDLE and use it to write your first Python program.

**1. Basic Python**

Before we start writing programs, we are going to try some simple interactive Python commands to see how Python works. Open an IDLE window: **Start->All Programs->Python 2.7->IDLE (Python GUI**.

Which version of Python is installed on these computers (look at the top of the IDLE window)?

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At the prompt >>> type the following commands (shown in bold), write the output below the command. If you receive an error when you type a command, *explain why* the error exists (do not simply write down the error message). Some commands may not produce output. If that is the case, write ‘NO OUTPUT’ below the command.

>>> **print Hello World!**

>>> **print 'Hello World!'**

>>> **message = 'Hello World!'**

>>> **n = 17**

>>> **print message**

>>> **print n**

>>> **message**

>>> **lambda = 3.125**

>>> **type(message)**

>>> **type(n)**

>>> **message/8**

>>> **n/8**

>>> **n/8.0**

>>> **message\*2**

>>> **quit()**

**2. Hello Python!** (Review)

We will now write (again) the trivial “Hello World” program to review using IDLE.

* Open a new window (**File->New Window**)
* In the editor window type (note the syntactical highlighting):

**print 'Hello Python!'**

* Save the program somewhere in your documents folder (e.g. My Documents\CS100\programs) with the filename **hello.py** (note the **.py** extension is used for python programs)
* In the menu bar select **Run->Run Module**

What output is produced in the main IDLE window?

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**Congratulations!** You have just written your first Python program. In subsequent classes we will learn basic programming constructs and begin writing more interesting Python programs using turtle graphics.