Introduction to Python

The goals of this section are:

1. to give students basic exposure to Python
2. to allow students to use Python for some of the National Cyber League challenges
3. and to allow students to complete the Python scripts in the cryptography portion the class is about to do.

# Module Choices

It is hard to know what experience with writing code students have, so I have tried to give you options. You can do either one; the assignments are the same either way.

## Confident students or those with some programming experience

The Python modules available through Cyber Aces (<https://tutorials.cyberaces.org/tutorials.html> ) go quickly through the basics of Python and are enough to get you started. If you wish, you can just read the Cyber Aces Python modules and complete the simple programming assignments.

## Students wanting basic programming materials

The book, *Automate the Boring Stuff with Python* (no starch press) is available online free of cost at <https://automatetheboringstuff.com/> . You’ll need to scroll to the bottom to see the Table of Contents and links to each chapter. Most of the skills we need are in chapters 1 – 4, and 6. You can read those chapters and work the examples in the book to get more assistance on your journey into Python. I still suggest you read the Cyber Aces slides, however.

## Students in between

I have created an index that links the Cyber Aces slides to the appropriate portions of Automate the Boring Stuff. You can read the Cyber Aces slides, and as you come across things that confuse you, you can look them up in the online book. This may be the method most of you want to start with.

# The first assignment

Read the first session in Cyber Aces, <https://tutorials.cyberaces.org/tutorials/view/3-3-1.html>, or read the first two chapters of *Automate the Boring Stuff with Python*.

Whenever you start a new programming language, the first thing you have to do is install the language and decide what environment you want to use: Linux or Windows, text editor or Integrated Development Environment (IDE), etc. For this assignment you will choose either Linux with the gedit text editor, or Windows with IDLE (comes with the Python installation). You can do both if you like but you are only required to do one.

# Hand In

Chose the environment you wish to use, as explained in this document. Run the file, caesarCipher.py, in the environment you chose. Then, edit this line  
  
so that it only contains capital letters; remove the lower case, numbers, and symbols. Use the new version you’ve created to decode this message:  
SBWKRQ LV UHDOOB FRRO  
It was encoded with Caesar cipher with a shift of 3.

Note: you will have to change the message, key, and SYMBOLS in caesarCipher.py.

Note: caesarCipher.py is a slightly modified version of the file from the book *Cracking Codes with Python*, by Al Sweigart. We will be using it in our cryptography section.