Introduction to Python Workshop Outline and Tips

This workshop will involve you working through a series of twelve modules, outlined below.

If you haven't yet, the first thing to do is install the necessary software. Please review the "Software_Download_Instructions" .pdf file, and follow the instructions there to download the Anaconda Distribution, which we will be using for this module. Once you've completed that, read on!

One you have successfully downloaded the software, you are ready to begin. First, though, review this document regarding the workshop structure, a description of the modules and expectations, and recommended tips for how to proceed.

This workshop has been specifically designed to be completed entirely remotely. Indeed, you should be able to work through the modules at your own pace over the next 2 weeks, using the provided instructions and script files for each module. You can then upload the deliverable for your assignment file and submit to WebCampus when you reach it in Module 10. To be clear: it is entirely possible to complete this workshop on your own, without even logging into Zoom once! However, you are certainly welcome to reach out via email or WebCampus if needed, and I of course will host a 3 hour help session on Saturday, October 17th via Zoom, where I can answer any questions, address any issues that may have arisen, or talk about specific use areas for your research. First, a review of what we will cover

Topic Overview

Module Number	Topic
1	Introduction to Anaconda Navigator and working in Spyder
2	Variables and Assignment Statements
3	String Data
4	Integer and Float Data
5	Definite and Indefinite Loops
6	Conditional Statements
7	Functions
8	Lists
9	Tuples and Dictionaries
10	Reading and Writing **Files** ***this module contains the deliverable for course credit***
11	numpy and matplotlib
12	Environments, Installing Packages, and a Case Study

Each module contains the following:

1) An .pdf document that provides detailed instructions for completing the module, along with helpful explanations of subject matter and code intent. Use this to navigate the provided code in the associated script file. You will see discussion of the subject matter, screenshots of some important parts of the code's flow, and prompts for you to explore and/or work on your own. Most importantly, it contains references to line numbers in the instructions! Run certain line(s) of code when prompted in the instructions so you can follow along.

2) A script (.py) file that contains the pre-generated code that you will open in Spyder, complete with code documentation. Some of this is reflected in the associated instructions file, but that file contains more detail. Please note, only the first and last script files are intended to all be run at once! The rest contains smaller code snippets that you will run as you work through the module. The instructions will always note exactly what lines to run at what point. These code snippets are resources that you are welcome to keep and modify for your future work.

Recommendations

1) Make sure that you have both the script file and the associated instructional .pdf document open at the same time as you work through each module, as the latter helps guide you through the former. The exception to this is the first module, which only have a video associated with the script file.

2) Feel free to edit and modify the code – especially when prompted! - but be aware that any shifts you make to the number of lines in the code may throw off the lines referenced in the instructions document. Therefore, we recommend making copies of the provided script files, and you can use these copies to make your edits. That way, you always refer to a copy of the script where the line numbers in the code and instructions align. Of course, you can always download fresh copies of the original scripts that have the lines numbers referenced correctly in the instructions through WebCampus, too.

3) We strongly encourage you to complete these modules in the order presented, but no restrictions are in place that force that to be the case. If you need to or want to jump around, you can.

4) The deliverable that you will upload to WebCampus for credit in this module can be found in Module 10 – Reading and Writing Files. Instructions for exactly what to upload can be found there. The deliverable is due by 4 pm on Saturday, October 17th.

5) For best results, work through these remotely over the next two weeks at your own pace. The documents are designed so that you can work entirely independently, but we understand questions may arise. Email us if you need guidance or clarification. I will online from 9 until noon on Saturday, October 17th to help field any questions that may have arisen as you worked through the module.