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Foundations of Python: Programming

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### Lessons Learned

This course brought together a lot of programming concepts that I was struggling to understand from my own self-learning. Prior to enrolling in this course, I had taken a series of online certificates from Codecademy: Code Foundations; Learn Python 3; and Getting Started with Python for Data Science. I also went through the “Python Crash Course” textbook. In retrospect, I’m so glad I took a few self-paced materials before jumping into this course, because it made it easier to understand the more intermediate-advanced concepts and code.

My goal was to become more comfortable with loops, functions, and classes. What I was missing from the online courses were the concepts behind object-oriented programming and separations of concerns to really understand the difference between functions, classes, and general code organization and structure. I found that my knowledge and use of loops improved when we started building our assignment and lab programs. Having a single program that we were building for our assignment also helped me with writing new code because it was narrowed in on a specific goal rather than endlessly practicing how to write code without a real purpose behind it. Initially I was worried about the course setup because there was a lot of syntax that we were skimming through, but I’m glad we focused on the larger concepts because it helped with writing new code. I always tackled this the other way: writing code without understanding the larger concepts – I don’t encourage this!

The code we learned for error handling and unit testing were completely new to me. I struggled the most with parts of Module 5 and Module 8. To understand what was happening line by line, especially in the unittest framework, I had to look at various reference materials online. Initially, I also struggled with using the debugger because the interface was a bit overwhelming. However, by Module 08, I noticed an improvement in my ability to debug code – and there was a lot to debug!

I look forward to improving my programming skills and expanding on the concepts we learned in this course by enrolling in the Python Certificate. I’m also excited to keep exploring PyCharm, different virtual environments, and Jupyter Notebooks. Moving forward, it’ll be exciting to integrate the material I’ve learned in this course to the GIS work (image processing/ vegetation analysis and modeling) I do for my job.