

Final Project Report

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CSPB 3112

Introduction:

The goal of my project was to improve my understanding of python by working through a series of practice problems that allowed me to naturally explore concepts. This led me to discovering new libraries, packages, and better understanding various data structures and concepts and overall improving my usage of python and my knowledge of concepts that are shared among programming languages.

Background:

Initially, I was interested in exploring a new language, R, in order to make myself more marketable for data science jobs. However, this semester I also took the Data Science course and learned that data science is not very interesting to me. I also initially planned to follow along with several LinkedIn Learning classes and that allowed me to understand more about my personal learning style. I realized that I learn best when I am free to explore and naturally find answers to questions. For example, if I were working on a practice problem and I encountered a data structure that I wasn't familiar with, it was more engaging for me to seek out information naturally than following along a course, which made me less likely to seek out additional information. When I shifted gears to focus on allowing myself to be curious and approach learning in a new way,, I felt like I got much more benefit and ultimately learned more than I would have had I strictly followed along with the LinkedIn Learning courses.

Goals and Methods:

Each week I picked one or a few practice problems from exercism or real python that involved a concept, data structure, or idea. Then I would find several resources online such as videos, tutorials, articles, and documentation that I could follow and reference while working on my problem. This allowed me to gain practical experience in using the concepts and exercise my ability to find and utilize helpful resources.

Results/Discussion:

I have a series of practice problems that show the kinds of concepts and ideas that I found interesting for this semester. Overall, I improved my understanding of common data structures and their use cases. Additionally, I was able to gain valuable insights about myself, such as what type of learning is most beneficial for me, and what studies within the field of computer science are most interesting to me. Ultimately, I think this semester was an excellent use of my time. I learned many things about myself, my learning style, and what fields may interest me for my career. During the course of my studies in the CSPB program, I have had exposure to

various programming languages and important concepts, however, I haven't had the opportunity to explore these ideas outside of class. I find that learning is much more engaging and I remember what I have learned when I have had the opportunity to put something into practice. While working on the grep problem, I found myself constantly looking for new methods to optimize my code and make it more readable. This led me to finding various new resources and ways of structuring similar problems that helped me to become more familiar with and comfortable with using python. Despite it not being directly related to the problem for the week, I explored list comprehension, lambda functions, and case pattern matching. All of these ideas are applicable in other languages and are useful for various other types of problems.

Project Links:

Personal website: <https://halleeray.github.io/>