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CS -210 Programming Languages 22EW3

Project 3 - Programming Languages Explanation

Working with C++ for this project had it’s benefits and drawbacks. C++ was used in this program to create a menu to prompt the user to enter a number one through four. Depending on the choice, C++ would then call a function to communicate with Python, and at times pass additional user input to Python. C++ allowed me to create a menu that I had full control over, and I could easily pass information over to Python when needed. I was able to add validation for user input and easily exit the program with choice four when using C++. I could have also manipulated the output of C++ histograms to have different formatting, such as having everything aligned to the left, or colors, such as a blue background. Some drawbacks would be that C++ is a bit more difficult and tedious to code in, such as having to add semicolons at the end of most lines. C++ also doesn’t have the same abilities as Python when creating and going through lists.

Working with Python for this project also had its benefits and drawbacks. Python is great at analyzing data and creating lists. In my code, I used the power of Python’s dictionaries to create a comprehensive list of the produce items and their frequencies. This is more efficient than C++ because each item is paired with a value, which can be later referenced. Python also has much simpler syntax that is much shorter than C++ syntax. Some drawbacks of using Python for this project would be that Python is a bit slower than C++ and Python doesn’t allow for the same manipulation of the user interface as C++ does.

This project combined the coding languages of C++ and Python to benefit the whole project. C++ had functions that were able to call Python functions and, at times, pass additional user input to Python. Python was then able to read a file, create a dictionary, and easily print that dictionary to be displayed to the user. This scenario was a great time to use two languages because we were able to leverage the abilities of C++ through the menu and through the manipulation of output. We also were able to use the speed of C++. We then leveraged the analyzing abilities of Python to print lists, and go through lists to return certain values to C++ Java could be used in this project to hold the user interface due to its great speed over the other two languages. C++ could then be used for its security and Python would be used to analyze the data.