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Project 3 Reflection

Using C++ for the menu portion of this project made it very easy to receive and manage user input. It also made it easy to validate user input and format the output of the user’s desired function. Another benefit of C++ that was essential for this project is function overloading. Being able to define the same function but with different parameters was extremely valuable for combining C++ with python in this project. One drawback of C++ is its lack of a garbage collector. This paired with its use of pointers makes it prone to errors due to memory management.

Python was useful for this project because it made it extremely easy to receive information from a file and work with it. Python allowed me to store all of the grocery items in a dictionary and keep track of how many times each item appeared in the input file with very simple code. The Python module re provides full support for working with regular expressions and it raises the exception re.error if an error occurs while compiling or using a regular expression.

Combining C++ and Python can be extremely effective for a variety of purposes. The two languages compliment each other well as C++ runs extremely fast and makes it easy to receive inputs and format outputs while Python has vast libraries for data analysis. Because of this it can be very useful to receive input from C++, send it to Python to perform your desired action, and send this new information back to C++ to utilize its speed. Another scenario where this can be beneficial is in a video game. Since a game needs to process quickly to avoid laggy input reception, C++ should be used for the main function while Python can be utilized to make use of its vast libraries for functions. Java could have been used in place of either language for this project but it would not have made it any easier. It wouldn’t have really added much to the menu portion of the program as C++ is the best option for that and it wouldn’t have made the Python portion any simpler than it already is.