Ari Goldberg
Lab 1 Analysis

As was required in the assignment, I implemented the lab using stacks. For converting prefix to postfix, we need to read the equation from right to left, adding operands to the stack and then popping two from the stack everytime we arrive at an operator, combine them and add them to the stack. Stacks made sense to use since the lifo structure works perfectly with needing the most recently added operands or group of operands. I decided to implement an iterative approach as well, due to memory and time. If I were to implement this function recursively, every time the function would be called it would take more time to run and allocate more memory for the new variables, especially for larger equations. This also avoids the possibility of stack overflow with larger equations. I would conclude from these reasons that an iterative solution is better than a recursive one, given the drawbacks of recursion and that the program itself is rather short and easy to understand, negating the main benefit of recursion.

I learned about many new built-in functions and variables in python, such as isalpha and isdigit. I also learned how to read arguments from the command line and how to use files to handle input and output. I also learned about error handling in python. I have some experience with python, but most of my coding experience is with javascript. I am very to happy to see that error handling is even simpler in python! I also learned more about modular programming, which has shown to be very useful in staying organized and breaking the code down into smaller, more understandable chunks.

As for what I would do differently, next time I would try to plan out the code in advance before actually coding. I started off coding right away and found myself very disorganized, and needed to start over a fair amount of times. Breaking it into different modules is definitely a better route to take, which is what I ended up doing after a few attempts. It was helpful with setting small goals, and being able to leave modules alone once they were complete.