To test the program, accounts can be seen in the accounts.txt file. The format is “username password”. One account has the username “rivera” and password “password” that can be used for testing or use any of the other accounts.

Testing for the program involves many areas. We check if the username and password are valid before going into the main program menu. We also tested most of the places user’s can input data by typing in incorrect data or random strings. If the user types in a string when cin is reading an integer it will cause an output loop and crash the program. We added a check for this when reading in values to prevent the program from crashing.

We added checks for when files such as the file storing user accounts and the file storing stock values are missing. These files are necessary for the program’s basic functionality so we don’t allow the program to run when these files are missing. We also stop the program from running if the file storing the user’s balance or stocks can’t be found since it is also necessary for basic functionality.

In the buy/sell functions, checks are performed to ensure that the stock the user would like to buy or sell is valid. The buy/sell functions were tested by entering stocks that don’t exist in our file to buy, and entering strings and decimals for the number of stocks we’d like to buy. We also ensure that the user account balance is high enough to purchase the stocks entered. The stocks aren’t added to their account until this is verified. We also don’t allow the user to buy or sell a negative number of stocks. When selling, the program also checks if the user has enough stocks to sell the number they entered. When these errors are encountered in the buy/sell functions the program simply returns to the main menu where other commands can be carried out thereby limiting the blast radius or the part of the program affected by the error.

Some refactoring includes our sign in for regular users and administrators. The administrator functionality is not yet complete, but the sign in for them is complete and it required some rework of the sign in. However, this doesn’t affect the external behavior of our program for regular users.

The create user functionality has not been implemented yet as the administrator will have the sole ability to create other users. The administrator function has not yet been completed. We have not given the user’s the ability to purchase stocks based on the price at a later time yet, either. This will be implemented in the next release. They will be able to choose a stock and if the price drops below a certain amount, the program will automatically buy the stock for them. Right now, the user name and stock that they want to buy are simply added to a file. User’s can, however, manually buy and sell stocks from the menu in this iteration. We will also add the ability to view available stocks so user’s can view available stocks and prices before purchase. We can also include operators for editing the balance and stocks withing the buy/sell functions. This will be implemented in a later iteration.



