

We take approach example #1 to implement our testing process

1. We make each functionality as an individual test. Importing FrontEnd python program and rename it fn
2. we create our test methods which takes capsys as parameter to capture stdout and stderr, then we specify the terminal input, the expected terminal output, the expected output file content and account list directory for each test case. Afterall, we pass those variables to call run\_app function (which is copied and modified from approach #1) in each test method.
3. In the run\_app method, it takes the directory of account list, terminal input/output, and expected output file in string format as parameter. Then create a temp file in system to record output transactions (as output file). Then, set three system arguments, which are the FroontEnd.py (argv[0]), the account list directory(argv[1]) and temp file(argv[2]). We set the terminal input and run the program (main function in frontEnd.py), capture the terminal output and errors, and split terminal output in lines. At the end, we compare the differences between terminal **outputs vs expected terminal output**, output file (which is temp file) vs expected output file. Then we clean up temp files.