

detailed failure report

Team: Zero Defects



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# QBasic Application Usage:

The following provides a brief overview of how to use the QBasic python front end application.

The Front End takes two arguments: the name of a Valid Accounts List file, and the name of a Transaction Summary file.

Additionally, the Front-End reads input from standard input, which can either be typed in by the user or redirected from a file (when testing).

**For the first case (production mode):**

./QBasic.py validaccounts.txt transactionsummary.txt

**When testing, use redirection to feed in the "user" input, say testinput.txt:**

./QBasic.py validaccounts.txt transactionsummary.txt < testinput.txt

**You can also save the terminal output created by the test:**

./QBasic.py validaccounts.txt transactionsummary.txt < testinput.txt > testoutput.txt

# Testing Scripts:

To automate the black box testing performed on the QBasic application two shell scripts were developed. These scripts together allow for test **execution and verification** to be performed using automation rather than the tedious task of performing these operations manually.

* **testExecutionScript.sh**
  + Dependent on testsToRun.txt file. This file is used as a comma delimited list of the tests to be run/verified, including the test area (LOGIN, LOGOUT etc.), test name, and transaction file name.
  + This simple shell script iterates through the testsToRun file and executes the QBasic.py application as appropriate for each test.
    - The valid accounts file path used is constructed using the following:

"Testing/${testArea}/Input Files/valid\_accounts\_file\_${testName}.txt"

* + - The transaction file path used is constructed using the following:

"Testing/${testArea}/Output Files/${transactionFileName}.txt"

* + - The standard input file path used is constructed using the following:

"Testing/${testArea}/Input Files/input\_${testName}.txt"

* + - The standard output file path used is constructed using the following: "Testing/${testArea}/Output Files/output\_${testName}.txt"
  + Sample output from running the script:

$ ./testExecutionScript.sh

Executing LOGIN/test\_single\_login test:

./QBasic.py "Testing/LOGIN/Input Files/valid\_accounts\_file\_test\_single\_login.txt" "Testing/LOGIN/Output Files/transaction\_file\_empty.txt" < "Testing/LOGIN/Input Files/input\_test\_single\_login.txt" > "Testing/LOGIN/Output Files/output\_test\_single\_login.txt"

LOGIN/test\_single\_login test output saved to Testing/LOGIN/Output Files/output\_test\_single\_login.txt

Executing LOGIN/test\_txn\_login test:

./QBasic.py "Testing/LOGIN/Input Files/valid\_accounts\_file\_test\_txn\_login.txt" "Testing/LOGIN/Output Files/transaction\_file\_empty.txt" < "Testing/LOGIN/Input Files/input\_test\_txn\_login.txt" > "Testing/LOGIN/Output Files/output\_test\_txn\_login.txt"

LOGIN/test\_txn\_login test output saved to Testing/LOGIN/Output Files/output\_test\_txn\_login.txt

* **testOutputVerificationScript.sh**
  + Dependent on testsToRun.txt file. This file is used as a comma delimited list of the tests to be run/verified, including the test area (LOGIN, LOGOUT etc.), test name, and transaction file name.
  + This simple shell script iterates through the testsToRun file and executes the “diff” command to compare the standard output files (log file) and the transaction file created. Each file is compared to the respective file found in the “Expected Output Files” directory to verify the expected results were created during the testing phase.
    - The **test** transaction file path used is constructed using the following: "Testing/${testArea}/Output Files/${transactionFileName}.txt "
    - The **expected** transaction file path used is constructed using the following: "Testing/${testArea}/Expected Output Files/${transactionFileName}.txt"
    - The **test** standard output file path used is constructed using the following: "Testing/${testArea}/Output Files/output\_${testName}.txt"
    - The **expected** standard output file path used is constructed using the following: "Testing/${testArea}/Expected Output Files/output\_${testName}.txt"
  + Sample output (showing both passing and failing test cases) from running the script:

$ ./testOutputVerificationScript.sh

Verifying LOGIN/test\_single\_login test:

diff "Testing/LOGIN/Output Files/transaction\_file\_empty.txt" "Testing/LOGIN/Expected Output Files/transaction\_file\_empty.txt"

diff "Testing/LOGIN/Output Files/output\_test\_single\_login.txt" "Testing/LOGIN/Expected Output Files/output\_test\_single\_login.txt"

LOGIN/test\_single\_login TEST PASSED!

…….

Verifying CREATEACCT/test\_acc\_seven\_digits test:

diff "Testing/CREATEACCT/Output Files/transaction\_file\_empty.txt" "Testing/CREATEACCT/Expected Output Files/transaction\_file\_empty.txt"

diff "Testing/CREATEACCT/Output Files/output\_test\_acc\_seven\_digits.txt" "Testing/CREATEACCT/Expected Output Files/output\_test\_acc\_seven\_digits.txt"

11c11,12

< Please enter the name of account owner:

---

> Error Invalid account number

> Sorry an error occurred, please try again:

CREATEACCT/test\_acc\_seven\_digits TEST FAILED!

…….

#####################TESTING STATISTICS#####################

Tests Passed: 28

Tests Failed: 4

Tests Run : 32

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# Failure Report:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Failure # | Test Area | Test Name | Test Intention | Error in output | Error in code | Fix applied | Re-Test details |
| 0 | All | All | N/A | In the testing list created in Assignment 1, it was assumed that an empty (only EOS line) transaction file would be created when the QBasic application is started. However, in the application design for Assignment 2 it was determined that a transaction file should only be created during a “LOGOUT” transaction.  Error seen in verification script output: diff: Testing/DELETEACCT/Output Files/transaction\_file\_empty.txt: No such file or directory | Test verification script was looking for non-existent transaction file. | testOutputVerificationScript.sh script adjusted to use a new keyword in testsToRun.txt file to indicate when no transaction file should be created. This should also detect the erroneous case where a transaction file is created when none is expected. | Ran testExecutionScript.sh and testOutputVerificationScript.sh to ensure previously failing test cases are now passing. Also manually created erroneous case of where a transaction file is created when there shouldn’t be one to ensure the verification script successfully found the error. |
| 1 |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |