

# Prestige Worldwide: Quinterac Assignment 1

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# Test Cases and Completeness

## Description

All of the test cases for the front-end requirements of Quinterac, Queen's Old-Fashioned Interactive Banking System, have been included in the table below. The test table includes the requirements, test numbers, test cases, purpose of tests, test inputs, expected results, and expected output files. The requirements defines which feature is being tested and the test case describes the specific aspect of the feature that is being tested. The purpose of test further describes what is intended to happen within the test. The test table covers all functionality allowed by requirements, and include cases to test constraints.

## Requirements Problems

A few assumptions were made while writing of the test table. Below is a list of the assumptions that were made.

- It is assumed that a deposit of \$0 will fail, rather than pass. Therefore, the minimum amount of money that can be deposited is \$0.01.
- It is assumed that a user or a teller is able to input negative amounts of dollars. This will result in a failure.
- It is assumed that you can both logout and cancel at any time. Meaning, if cancel (or logout) is ever given as input, the system will not use as the input. Instead, it will either cancel the current transaction or logout of the current session, respectively.
- If an invalid file is ever attempted to be used as the valid accounts list, the system will force a logout and will print out an error message that the valid accounts list is not useable. This is an exception to the "Front End should never crash and should never stop except as directed by transactions" requirement.
- It is assumed that the following situation will never occur: In two different parts of the city, two accounts are created using the same account number.
- It is assumed that if the valid accounts file list contains invalid accounts (they have been corrupted in some way to make them violate one or more of the rules) then the system will work properly but those accounts will not be registered as valid accounts and an error will be output that some accounts in the list are invalid.
- It is assumed that error messages will be printed out to the user whenever invalid commands are attempted and users will be prompted again for input. This will be implemented at a later stage.
- It is assumed that for testing the valid accounts list there will be multiple lists that can be tested and the one to use for test will be signified in <> brackets in the test input.

- A test valid accounts file will be used for testing and will include:
  - 1234567
  - 7654321

## Test Plan

Below is the test table that covers all of Quinterac's functionality.

Requirement	Test Num	Test Cases	Purpose of Test	Test Input	Expected Result	Expected Output Files
General	R1T1	Misspelled login handled politely	Ensure typing login incorrectly does not do anything, and handled politely	lgin	Pass	
	R1T2	Misspelled commands handled politely	Ensure typing commands incorrectly does not do anything, and handled politely	login agent withdraw depst transfr createact deleteact logot logout	Pass	EOS
Login	R2T1	Subsequent login, while in Teller mode	Can't login again after already logging in	login agent login logout	Fail	EOS
	R2T2	Subsequent login, while in ATM mode	Can't login again after already logging in	login machine	Fail	EOS

				login logout		
	R2T3	Agent Login	Login to Teller mode should work	login agent logout	Pass	EOS
	R2T4	Machine Login	Login to ATM mode should work	login machine logout	Pass	EOS
	R2T5	Consecutive Machine logins, after logout	Login after logging out should work between any two modes	login machine logout login machine logout	Pass	EOS EOS
	R2T6	Consecutive Agent logins, after logout	Login after logging out should work between any two modes	login agent logout login agent logout	Pass	EOS EOS
	R2T7	Agent login, followed by Machine login	Login after logging out should work between any two modes	login agent logout login machine logout	Pass	EOS EOS
	R2T8	Machine login, followed by Agent	Login after logging out should work between	login machine	Pass	EOS EOS

		login	any two modes	logout login agent logout		
Valid Accounts List File	R3T1	Lines too long	Ensure that login works even if lines in the file are too long	<tooLongFile.txt > login machine deposit 1234567 logout	Pass	EOS
	R3T2	Lines too short	Ensure that login works even if lines in the file are too short	<tooShortFile.tx t> login machine deposit 1234567 logout	Pass	EOS
	R3T3	Account not all digits	Ensure that login works even if an account number is not all digits	<nonDigitFile.tx t> login machine deposit 987654a logout	Pass	EOS
	R3T4	Account beginning with 0	Ensure that login works even if an account number begins with 0	<zeroStartFile.t xt> login machine deposit	Pass	EOS

				0987654 logout		
	R3T5	Account numbers after special 0000000 not read	Ensure that only accounts before the 0000000 are read	<acctsAfterSpe cialFile.txt> login machine deposit 1234567 logout	Fail	EOS
	R3T6	File does not contain special 0000000	Ensure that if a file does not contain the special end character, the login will fail gracefully	<noSpecialFile.t xt> login machine	Fail	EOS
Logout	R4T1	Log out from teller account only when logged in	Ensure that a teller can log out after logging in	Login Agent Logout	Pass	EOS
	R4T2	Log out from teller account when logged in	Ensure that an ATM can log out after logging in	Login Machine Logout	Pass	EOS
	R4T3	Idle logout	Can't logout before logging in	logout	Fail	
	R4T4	Idle createacct	Can't create account if logged out	createacct	Fail	
	R4T5	Idle deleteacct	Can't delete account if logged out	deleteacct	Fail	

	R4T6	Idle deposit	Can't deposit once logged out	deposit	Fail	
	R4T7	Idle transfer	Can't transfer once logged out	transfer	Fail	
	R4T8	Idle withdraw	Can't withdraw once logged out	withdraw	Fail	
	R4T9	Idle login	Log out allows me to log back in afterwards	login	Pass	EOS
	R4T10	Idle createacct	Can't createacct before logging in	createacct	Fail	
	R4T11	Idle deleteacct	Can't deleteacct before logging in	deleteacct	Fail	
	R4T12	Idle deposit	Can't deposit before logging in	deposit	Fail	
	R4T13	Idle transfer	Can't transfer before logging in	transfer	Fail	
	R4T14	Idle withdraw	Can't withdraw before logging in	withdraw	Fail	
	R4T15	Print appropriate transaction summary	Once logged out print appropriate day/account transaction summary	Transaction summary	Pass	Full day transaction summary
Create Account	R5T1	Create an account	Ensure that an agent can create an account	login agent createacct	Pass	NEW 1234567 000 0000000 Some Name

				1234567 Some Name logout		EOS
	R5T2	No new transactions on new account	Ensure that no new transactions on the account are accepted in the same session that the account is created	login agent createacct 9876543 Some Name withdraw 9876543 logout	Fail	NEW 9876543 000 0000000 Some Name  EOS
	R5T3	ATM mode, Create Account	Ensure that when logged into ATM mode the user cannot create an account	login machine createacct logout	Fail	EOS
	R5T4	New account number, more than 7 digits	Ensure that new accounts cannot be created with invalid account numbers	login agent createacct 12345678 logout	Fail	EOS
	R5T5	New account number, less than 7 digits	Ensure that new accounts cannot be created with invalid account numbers	login agent createacct 123456 logout	Fail	EOS
	R5T6	New account number, not all decimal digits	Ensure that new accounts cannot be created with invalid	login agent createacct	Fail	EOS



			account numbers	1a34567 logout		
	R5T7	New account number, beginning with 0	Ensure that new accounts cannot be created with invalid account numbers	login agent createacct 0234567 logout	Fail	EOS
	R5T8	New account, matching number	Ensure that a new account cannot be the same as another account in the valid files list	<acctWithAll1s.txt> login agent createacct 1234567 logout	Fail	EOS
	R5T9	New account, same number in same session	Ensure that a new account created in one session is saved in such a way that trying to create an account in the same session with that same number does not work	login agent createacct 2345678 Some Name createacct 2345678 Some Name2 logout	Fail	NEW 1234567 000 0000000 Some Name EOS
	R5T10	Too short account name	Ensure that an account name is not shorter than 3 characters	login agent createacct 3456789 SN logout	Fail	EOS

	R5T11	Too long account name	Ensure that an account name is not longer than 30 characters	login agent createacct 4567891 Abcdefghijklmn opqrstuvwxyz bcde logout	Fail	EOS
	R5T12	Account name starting with space	Ensure that an account name does not start with a space	login agent createacct 5678912 Start Space logout	Pass	NEW 1234567 000 0000000 Start Space EOS
	R5T13	Account name ending with space	Ensure that an account name does not end with a space	login agent createacct 6789123 End Space logout	Pass (space truncated)	NEW 1234567 000 0000000 End Space EOS
	R5T14	Account name including non-alphanumeric character	Ensure that an account name contains only alphanumeric characters	login agent createacct 7891234 N+m logout	Fail	EOS
Delete account	R6T1	Attempt in ATM mode	Should not accept and give warning/error	login machine deleteacct	Fail	EOS

				1234567 abc logout		
	R6T2	Incorrect spelling (Teller mode)	Should not accept and give warning/error	login agent deletacct 1234567 abc logout	Fail	EOS
	R6T3	Invalid account number (Teller mode)	Should not delete anything given invalid account number (not on valid accounts list file)	login agent deleteacct 2234567 abc logout	Fail	EOS
	R6T4	Invalid account name (Teller mode)	Should not delete anything given an invalid account name (not on valid accounts list file)	login agent deleteacct 1234567 bbc logout	Fail	EOS
	R6T5	Improper account number input (Teller mode)	Account number must be 7 decimal digits	login agent deleteacct 12345678 abc logout	Fail	EOS
	R6T6	Improper account	Account name must be	login	Fail	EOS

		name input (Teller mode)	between 3-30 alphanumeric digits	agent deleteacct 1234567 bc logout		
	R6T7	Attempt transaction on deleted account (Teller mode)	No transactions on deleted account	login agent deleteacct 1234567 abc deposit 1234567 1234 logout	Pass on delete Fail on deposit	DEL 1234567 0 0 abc EOS
	R6T8	Correct credentials (Teller Mode)	Method should be accessible to agent mode and work with proper credentials	login agent deleteacct 1234567 abc logout	Pass	DEL 1234567 0 0 abc EOS
Deposit	R7T1	ATM deposit success	Ensure that a user can deposit using ATM	login machine deposit 1234567 1234 logout	Pass	DEP 1234567 1234 0000000 *** EOS
	R7T2	ATM deposit rejected	Ensure that a user cannot deposit negative amounts	login machine deposit	Fail	EOS

				1234567 -1234 logout		
	R7T3	ATM deposit rejected	Ensure that a user cannot deposit over \$2000 at a time	login machine deposit 1234567 2420 logout	Fail	EOS
	R7T4	ATM deposit rejected	Ensure that a user cannot deposit over \$5000 per day	login machine deposit 1234567 199900 deposit 1234567 199900 1234567 100300 logout	Fail	EOS
	R7T5	ATM deposit rejected	Ensure that a user cannot deposit \$0	login machine deposit 1234567 0 logout	Fail	EOS
	R7T6	ATM deposit rejected	Ensure that a user cannot deposit an invalid amount	login machine deposit 1234567	Fail	EOS

				abc logout		
	R7T7	ATM deposit rejected	Ensure that a user cannot deposit using an invalid account	login machine deposit 0123456 1234 logout	Fail	EOS
	R7T8	ATM deposit rejected	Ensure that a user cannot deposit using an account name	login machine deposit abcd 1234 logout	Fail	EOS
	R7T9	Teller deposit success	Ensure that a teller can deposit	login agent deposit 1234567 1234 logout	Pass	DEP 1234567 1234 0000000 *** EOS
	R7T10	Teller deposit success	Ensure that a teller can deposit over \$2000 at a time	login agent deposit 1234567 200100 logout	Pass	DEP 1234567 200100 0000000 *** EOS
	R7T11	Teller deposit rejected	Ensure that a teller cannot deposit \$0	login agent deposit	Fail	EOS

				1234567 0 logout		
	R7T12	Teller deposit rejected	Ensure that a teller cannot deposit negative amounts	login agent deposit 1234567 -1234 logout	Fail	EOS
	R7T13	Teller deposit rejected	Ensure that a teller cannot deposit over \$999 999.99 at a time	login agent deposit 1234567 100000000 logout	Fail	EOS
	R7T14	Teller deposit rejected	Ensure that a teller cannot deposit an invalid amount	login agent deposit 1234567 abc logout	Fail	EOS
	R7T15	Teller deposit rejected	Ensure that a teller cannot deposit using an invalid account	login agent deposit 0123456 1234 logout	Fail	EOS
	R7T16	Teller deposit rejected	Ensure that a teller cannot deposit using an	login agent	Fail	EOS

			account name	deposit abcd 1234 logout		
Withdraw	R8T1	ATM withdraw success	Ensure that a user can withdraw using ATM	login machine withdraw 1234567 1234 logout	Pass	WDR 1234567 1234 7654321 abc EOS
	R8T2	ATM withdraw rejected	Ensure that a user cannot withdraw with negative amounts in the account	login machine withdraw -1234567 1234 logout	Fail	EOS
	R8T3	ATM withdraw rejected	Ensure that a user cannot withdraw over \$1000 at a time	login machine withdraw 123456 2420 logout	Fail	EOS
	R8T4	ATM withdraw rejected	Ensure that a user cannot withdraw over \$5000 per day	login machine withdraw 1234567 199900 withdraw 1234567	Fail	EOS



				199900 1234567 100300 logout		
	R8T5	ATM withdraw rejected	Ensure that a user cannot withdraw an invalid amount	login machine withdraw 1234567 abc logout	Fail	EOS
	R8T6	ATM withdraw rejected	Ensure that a user cannot withdraw from an invalid account	login machine withdraw 123456 1234 logout	Fail	EOS
	R8T7	Teller withdraw success	Ensure that a teller can withdraw upto 999,999.99 at a time	login agent withdraw 1234567 999999.99  logout	Pass	WDR 1234567 1234 7654321 abc EOS
	R8T8	Teller withdraw success	Ensure that a teller can't withdraw over \$999,999.99 at a time	login agent withdraw 1234567 1000000.00 logout	Fail	EOS

	R8T9	Teller withdraw success	Ensure that a teller can withdraw an unlimited amount of money from an account per day	login Agent WDR	Pass	EOS
	R8T10	Teller withdraw rejected	Ensure that a user cannot negative withdraw amounts	login agent Withdraw -1234567 1234 logout	Fail	EOS
	R8T11	Teller withdraw rejected	Ensure that a user cannot withdraw over \$999 999.99 at a time	login agent withdraw 1234567 100000000 logout	Fail	EOS
	R8T12	Teller withdraw rejected	Ensure that a user cannot withdraw an invalid amount	login agent withdraw 1234567 abc logout	Fail	EOS
	R8T13	Teller withdraw rejected	Ensure that a user cannot withdraw into an invalid account	login agent withdraw 123456 1234 logout	Fail	EOS
	R8T14	Teller withdraw	Teller tries to withdraw	login	Fail	EOS

		rejected	zero dollars	agent withdraw 0.00 logout		
Transfer	R9T1	ATM transfer success	Ensure that a user can transfer using ATM	login machine transfer 1234567 1234 7654321 logout	Pass	XFR 1234567 1234 7654321 abc EOS
	R9T2	ATM transfer rejected	Ensure that a user cannot transfer negative amounts	login machine transfer 1234567 -1234 7654321 logout	Fail	EOS
	R9T3	ATM transfer rejected	Ensure that a user cannot transfer over \$10000 at a time	login machine transfer 1234567 10100 7654321 logout	Fail	EOS
	R9T4	ATM transfer rejected	Ensure that a user cannot transfer over \$10000 per day	login machine transfer 1234567	Fail	EOS

				199900 7654321 transfer 1234567 199900 7654321 1234567 100300 7654321 logout		
	R9T5	ATM transfer rejected	Ensure that a user cannot transfer an invalid amount	login machine transfer 1234567 abc 7654321 logout	Fail	EOS
	R9T6	ATM transfer rejected	Ensure that a user cannot transfer into an invalid account	login Machine transfer 1234567 1234 0654321 logout	Fail	EOS
	R9T7	ATM transfer rejected	Ensure that a user cannot transfer into an account using the account name	login Machine transfer 1234567 1234 abcd logout	Fail	EOS

	R9T8	ATM transfer rejected	Ensure that a user cannot transfer into its own account	login machine transfer 1234567 1234 1234567 logout	Fail	EOS
	R9T9	Teller transfer success	Ensure that a teller can transfer	login agent transfer 1234567 1234 7654321 logout	Pass	XFR 1234567 1234 7654321 abc EOS
	R9T10	Teller transfer rejected	Ensure that a user cannot transfer negative amounts	login agent transfer 1234567 -1234 7654321 logout	Fail	EOS
	R9T11	Teller transfer rejected	Ensure that a user cannot transfer over \$999 999.99 at a time	login agent transfer 1234567 100000000 7654321 logout	Fail	EOS
	R9T12	Teller transfer rejected	Ensure that a user cannot transfer an	login agent	Fail	EOS

			invalid amount	transfer 1234567 abc 7654321 logout		
	R9T13	Teller transfer rejected	Ensure that a user cannot transfer into an invalid account	login agent transfer 1234567 1234 0654321 logout	Fail	EOS
	R9T14	Teller transfer rejected	Ensure that a user cannot transfer into an account using the account name	login agent transfer 1234567 1234 abcd logout	Fail	EOS
	R9T15	Teller transfer rejected	Teller tries to transfer zero dollars	login agent transfer 1234567 0.00 7654321 logout	Fail	EOS

## Transaction Summary File (TSF)

Transaction summary file will be tested mainly through inspection to ensure that everything is being entered correctly. Additionally the summary file will be scanned to ensure all syntax requirements are met.

### Test File for TSF

```
For (lines in TSF){  
    if(line > 61 characters)  
        fail  
    if(first 3 characters != 'DEP' or 'WDR' or 'XFR' or 'NEW' or 'DEL' or 'EOS' )  
        fail  
    if(4th character and 12th != ' ' )  
        fail  
    if(newline not at end of line)  
        fail  
    if(no space before or after amount)  
        fail  
    if(no space after second account number)  
        fail  
    if(line contains ' ' not in acct name) //two spaces in a row  
        fail  
    if(last line != 'EOS')  
        fail  
    else  
        success  
}
```

## Test Input and Output Organization

The GitHub repository has been set up such that each requirement specified in the test table above has its own folder. Within that folder, there is an input and an output folder wherein the actual input and output files are located. The output file names can easily be

distinguished from the input file names because the file name convention that was used indicates an output file by adding the word 'out' at the end of the name. For example, R1T1.txt is an input file and R1T1out.txt is its associated output file. This will simplify the process of validating the output files by not confusing their names with the input file names.

## Test Run Plan

The test cases will be done using windows batch files, one corresponding to each different requirement, running all the test cases for that requirement. The application will be called successively each time with a new input file for the given requirement and the results will be stored in txt output files. A simple txt comparing program will be written to automatically compare the output files to the expected output files to ensure there are no errors with the program. This will allow for one of the team members to quickly validate the results. Additionally, they will be added to the GitHub and a version tag will be created so that they can be used for comparison with future testing. The expected output and actual output will be kept in separate folders within the repository and a different naming convention will be used to differentiate the file names.