Test Plan

The tests are organized by component on a per-folder basis. The qbasic.c program is inside the folder "Stratton Brokemont" and inside that there is the shell script to start the test and the folder "Test_Components". The test components folder holds folders for all of the individual components of the system. In each component's folder there is a shell script that runs all of the test cases for that component, an Input folder and an Output folder for each test case. In the Input folder there are the test case files, each with the input that will be used to test the system. In the Output folder are the files with the expected output for each test case.

The input and output files will follow a similar naming convention but with the word 'in' being replaced with 'out'.
The Input text file names will have the following naming convention:
　　　　[Test Case Number]in_[Test Component]_[Test Case Name].txt
The Output text file names will follow the following naming convention:
　　　　[Test Case Number]out_[Test Component]_[Test Case Name].txt

　　　　Test Case Number : The test number for a specific test case (coordinated with the test case table). Ex. 01
　　　　Test Component : The name of the component being tested. Ex. agent
　　　　Test Case Name : A very short description of the test case name to be able to identify the test. Ex. log
　　　　Example of an input file name: 01in_agent_log.txt
　　　　Example of an output file name: 01out_agent_log.txt

The tests will be run as shell scripts. An overall shell will take in 4 parameters: the program being tested (ex. qbasic.c), a valid accounts file (ex. valaccts.txt), a folder containing the components and test cases (ex. Test_Components) and a results folder that will hold all the previous test results (ex. Test_Results). The valid accounts file consists of all of the account numbers. The test components folder consists of sub-folders that have a shell script, test case input files and expected output files. The results folder consists of all of the previous tests that have been completed.
The script will call every shell script in each component's folder. Each individual shell script will perform the tests from the files in the Input folder and then compare the result with the expected output in the Output folder for each component. These expected output files will be compared to the output files that the program produces. After each shell script is finished with all of its test and compared the results with the expected output file, it will merge its results file with the master results file and store it in the results folder using the naming convention below.

The output will be validated by comparison within each shell script. It will compare the output of the program with the expected output located in each Ouput folder.

Each results file will be stored in a folder at the top level called Test_Results. The results file will be named as followed:
　　　　[Test Number]_[Version Number]_[[Date].txt
　　　　Test Number : This is the number of tests performed on the program. Ex. T1
　　　　Version Number : This is the version number of the program that the test case is being performed on. Ex. V1-1

Date : This is the date at which the test was completed. Ex. 2017-10-10

Example of a test result file name: T1_V1-1_2017-10-10.txt

<table>
<tr><td colspan="11" align="center">Test Case Table</td></tr>
<tr>
<th>Components Folder</th>
<th>#</th>
<th>Input File Name</th>
<th>Test Case</th>
<th>Purpose</th>
<th>Input</th>
<th>Input Files</th>
<th>Output Files</th>
<th>Output File Name</th>
<th>Output</th>
</tr>
<tr>
<td>t_login</td>
<td>1</td>
<td>1in_login_dep.txt</td>
<td>deposit command, before login</td>
<td>Check a deposit is not accepted before login</td>
<td>deposit 1000001 50000</td>
<td>None</td>
<td>Transaction summary file with no transactions</td>
<td>1out_login_dep.txt</td>
<td>EOS 0000000 000 0000000 ***</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2in_login_wdr.txt</td>
<td>withdraw command, before login</td>
<td>Check a withdraw is not accepted before login</td>
<td>withdraw 1000001 50000</td>
<td>None</td>
<td>Transaction summary file with no transactions</td>
<td>2out_login_wdr.txt</td>
<td>EOS 0000000 000 0000000 ***</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3in_login_xfr.txt</td>
<td>transfer command, before login</td>
<td>Check a transfer is not accepted before login</td>
<td>transfer 1000001 1000002 50000</td>
<td>None</td>
<td>Transaction summary file with no transactions</td>
<td>3out_login_xfr.txt</td>
<td>EOS 0000000 000 0000000 ***</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4in_login_log.txt</td>
<td>login command</td>
<td>Check a front end session has started</td>
<td>login logout</td>
<td>None</td>
<td>None</td>
<td>4out_login_log.txt</td>
<td>LOGIN ACCEPTED</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5in_login_x2login.txt</td>
<td>login command twice</td>
<td>Check no subsequent login should be accepted after a login</td>
<td>login login logout</td>
<td>None</td>
<td>None</td>
<td>5out_login_x2login.txt</td>
<td>LOGIN ACCEPTED LOGIN FAILED</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6in_login_logout.txt</td>
<td>logout command, before login command</td>
<td>Check logout is not accepted before login</td>
<td>logout</td>
<td>None</td>
<td>None</td>
<td>6out_login_logout.txt</td>
<td>LOGOUT FAILED</td>
</tr>
<tr>
<td>t_machine</td>
<td>7</td>
<td>1in_machine_log.txt</td>
<td>login command, machine</td>
<td>Check that login is accepted</td>
<td>login machine logout</td>
<td>Valid accounts file with no accounts in it</td>
<td>Transaction summary file with no transactions</td>
<td>1out_machine_log.txt</td>
<td>LOGIN ACCEPTED LOGOUT SUCCESSFUL</td>
</tr>
</table>

	8	2in_machine_dep.txt	deposit command	Check a deposit is accepted	login machine deposit 1000001 50000 logout	Valid accounts file with valid account 1000001 in it	Transaction summary file with 1 transaction	2out_machine_dep.txt	DEP 1000001 50000 0000000 ***
	9	3in_machine_wdr.txt	withdraw command	Check a withdraw is accepted	login machine withdraw 1000001 50000 logout	Valid accounts file with valid account 1000001 in it	Transaction summary file with 1 transaction	3out_machine_wdr.txt	WDR 0000000 50000 1000001 ***
	10	4in_machine_xfr.txt	transfer command	Check a transfer is accepted	login machine transfer 1000001 1000002 50000 logout	Valid accounts file with two valid accounts in it, 1000001 & 1000002	Transaction summary file with 1 transaction in it	4out_machine_xfr.txt	XFR 1000002 50000 1000001 ***
	11	5in_machine_new.txt	createacct command fails	Check createacct fails	login machine createacct 1000001 testname logout	Valid accounts file with valid account 1000001 in it	Transaction summary file with 0 transactions in it	5out_machine_new.txt	EOS 0000000 000 0000000 ***
	12	6in_machine_del.txt	deleteacct command fails	Check deleteacct fails	login machine deleteacct 10000001 testname logout	Valid accounts file with valid accounts in it	Transaction summary file with 0 transactions in it	6out_machine_del.txt	EOS 0000000 000 0000000 ***
t_agent	13	1in_tell_log.txt	login command, agent	Check that login is accepted for agent	login agent logout	Valid empty account file	Transaction summary file with no transactions	1out_tell_log.txt	LOGIN agent SUCCESSFUL
	14	2in_tell_new.txt	createacct command	Check an account is successfully created	login agent createacct	Valid account file with unique 7-digit number,	Transaction file with 1 transaction	2out_tell_new.txt	NEW 10000001 000 0000000 testname

					1000001 testname logout	valid account name			
	15	3in_tell_dep.txt	deposit command	Check a deposit is successful	login agent deposit 1000001 50000 logout	Valid account file with 1 account numbers	Transaction file with 1 transaction in it	3out_tell_dep.txt	DEP 1000001 50000 0000000 ***
	16	4in_tell_del.txt	delete command	Check an account is successfully deleted	login agent deleteacct 10000001 testname logout	Valid account file with 1 account number with name	Transaction file with one transaction	4out_tell_del.txt	DEL 1000001 000 0000000 testname
	17	5in_tell_xfr.txt	transfer command	Check a transfer is successfully transferred	login agent transfer 1000001 1000002 50000 logout	Valid account file with 2 files	Transaction file with one transaction	5out_tell_xfr.txt	XFR 1000001 5000 1000002 ***
	18	6in_tell_wdr.txt	withdraw command	Check for a successful withdraw	login agent withdraw 1000001 500000	Valid account file with 1 account	Transaction file with one transaction	6out_tell_wdr.txt	WDR 1000001 500000 0000000 ***
t_createacct	19	1in_create_nonew.txt	no new transactions	Check that no new transactions are accepted	login agent createacct 1000102 testname deposit 1000102 50000 logout	Valid accounts file with no accounts in it	Transaction file with one transaction	1out_create_nonew.txt	NEW 1000101 000 0000000 testname

	20	2in_create_7dig.txt	7 digit account	Check that account number is seven digits long	login agent createacct 1000102 testname logout	Valid accounts file with no accounts in it	Transaction file with no transactions	2out_create_7dig.txt	EOS 0000000 000 0000000 ***
	21	3in_create_uniq.txt	unique account	Check that account number is unique	login agent createacct 1000102 testname logout	Valid accounts file containing account 1000101	Transaction file with no transactions	3out_create_uniq.txt	EOS 0000000 000 0000000 ***
	22	4in_create_3min.txt	3 character min.	Check that account names with below 3 characters are not allowed	login agent createacct 1000102 a logout	Valid accounts file with no accounts in it	Transaction file with no transactions	4out_create_3min.txt	EOS 0000000 000 0000000 ***
	23	5in_create_30max.txt	30 character max.	Check that account names with above 30 characters are not allowed	login agent createacct 1000102 qwertyuiopa sdfghjkl logout	Valid accounts file with no accounts in it	Transaction file with no transactions	5out_create_30max.txt	EOS 0000000 000 0000000 ***
	24	6in_create_toofew.txt	too few input	Check for too few input parameters	login agent createacct 1000102 logout	Valid accounts file with no accounts in it	Transaction file with no transactions\n\nAn accounts file with no accounts	6out_create_toofew.txt	EOS 0000000 000 0000000 ***
	25	7in_create_accnum.txt	account number as int	Check that account number can be parsed as an int	login agent createacct 1000102 walrus1 logout	Valid accounts file with no accounts in it	Transaction file with no transactions	7out_create_accnum.txt	EOS 0000000 000 0000000 ***

	26	8in_create_space.txt	spaces in name	Check that spaces are allowed in account names	login agent createacct 1000102 test name logout	Valid accounts file with no accounts in it	Transaction file with one transaction in it	8out_create_space.txt	NEW 100102 000 0000000 test name
	27	9in_create_startspace.txt	name starts with space	Check that spaces at the start of account names is not allowed	login agent createacct 1000102 testname logout	Valid accounts file with no accounts in it	Transaction file with one transaction in it	9out_create_startspace.txt	EOS 0000000 000 0000000 ***
	28	10in_create_invalchar.txt	invalid characters	Check that non-alphanumeric characters are not accepted	login agent createacct 1000102 t%$tn@me logout	Valid accounts file with no accounts in it	Transaction file with one transaction in it	10out_create_invalchar.txt	EOS 0000000 000 0000000 ***
t_deleteacct	29	1in_del_exist.txt	account exists	Check that an account number exists	login agent deleteacct 1000101 testtname logoout	Valid accounts file with the target account in it	Transaction file with one transaction in it	1out_del_exist.txt	DEL 1000101 000 0000000 testname
	30	2in_del_nodep.txt	nothing can be deposited	Check that nothing can be deposited in deleted account	login agent deleteacct 1000101 testname deposit 1000101 50000 logout	Valid accounts file with valid accounts in it	Transaction file with no transactions	2out_del_nodep.txt	EOS 0000000 000 0000000 ***
	31	3in_del_nowith.txt	nothing can be withdrawn	Check that nothing can be withdraw in deleted account	login agent deleteacct 1000101 testname	Valid accounts file with valid accounts in it	Transaction file with no transactions	3out_del_nowith.txt	EOS 0000000 000 0000000 ***

					withdraw 1000101 50000 logout				
	32	4in_del_notran.txt	nothing can be transferred	Check that nothing can be transferred in deleted account	login agent deleteacct 1000101 testname transfer 1000101 1100011 50000 logout	Valid accounts file with valid accounts in it	Transaction file with no transactions	4out_del_notran.txt	EOS 0000000 000 0000000 ***
	33	5in_del_val.txt	valid name and account	Checks to see if name and number are valid types	login agent deleteacct 1000101 testname logout	Valid accounts file with target account in it	Transaction file with no transactions	5out_del_val.txt	EOS 0000000 000 0000000 ***
	34	6in_del_toofew.txt	too few parameters	Checks to see if there are too few parameters for name and number	login agent deleteacct 1000101 logout	Valid account file with target account in it	Transaction file with no transactions	6out_del_toofew.txt	EOS 0000000 000 0000000 ***
t_deposit	35	1in_dep_rejmachine.txt	reject over $1000, machine case	Check that deposits over $1000 is rejected in machine mode	login machine deposit 100001 100100 logout	Valid account file with valid account 1000001 in it	Transaction file with no transactions	1out_dep_rejmachine.txt	EOS 0000000 000 0000000 ***
	36	2in_dep_rejtell.txt	reject over $999,999.99, agent case	Check that deposit over $999,999.99 is rejected in agent mode	login agent deposit 1000001 100000000 logout	Valid account file with valid account 1000001 in it	Transaction file with no transactions	2out_dep_rejtell.txt	EOS 0000000 000 0000000 ***

	37	3in_dep_validpara.txt	valid types/constraints	Check valid types/constraints of first 2 inputs	login machine deposit testname 1000001	Valid account file with valid account 1000001 in it	Transaction file with no transactions	3out_dep_validpara.txt	EOS 0000000 000 0000000 ***
	38	4in_dep_2inp.txt	at least 2 input parameters	Check at least 2 input parameters received	login machine deposit 1000001 logout	Valid account file with valid account 1000001 in it	Transaction file with no transactions	4out_dep_2inp.txt	EOS 0000000 000 0000000 ***
	39	5in_dep_over0.txt	input greater than 0	Check no deposit input is below 0	login machine deposit 1000001 -1 logout	Valid account file with account 10000001 in it	Transaction file with no transaction in it	5out_dep_over0.txt	EOS 0000000 000 0000000 ***
t_withdraw	40	1in_wdr_val.txt	valid account	Check that account is valid	login machine withdraw 1000101 100 logout	Valid accounts file with no accounts in it	Transactions file with no transactions in it	1out_wdr_val.txt	EOS 0000000 000 0000000 ***
	41	2in_wdr_rejmachine.txt	above $1000 rejected, machine case	Check that withdraws above $1000 are rejected in machine mode	login machine withdraw 1000101 200000 logout	Valid accounts file with account 1000101	Transactions file with no transactions in it	2out_wdr_rejmachine.txt	EOS 0000000 000 0000000 ***
	42	3in_wdr_abovetell.txt	above $1000 accepted, agent case	Check that withdraws above $1000 are accepted in agent mode	login agent withdraw 1000101 200000 logout	Valid accounts file with account 1000101	Transactions file with 1 transaction in it	3out_wdr_abovetell.txt	WDR 0000000 2000000 1000101 testname
	43	4in_wdr_totmachine.txt	no more than total $1000 in	Check that more than $1000 cannot be withdrawn in a single	login machine withdraw	Valid accounts file with account	Transactions file with 1 transaction	4out_wdr_totmachine.txt	WDR 0000000 50000 1000101 testname

			single session, machine case	session in machine mode	1000101 50000 withdraw 1000101 75000 logout	1000101			
	44	5in_wdr_1000singlesession.txt	more than total $1000 in single session, agent case	Check that more than $1000 can be withdrawn in a single session in agent mode	login agent withdraw 1000101 50000 withdraw 1000101 75000 logout	Valid accounts file with account 1000101	Transactions file with two transactions in it	5out_wdr_1000singlesession.txt	WDR 0000000 50000 1000101 *** WDR 0000000 75000 1000101 ***
	45	6in_wdr_maxamt.txt	no more than max amount can be withdrawn	Check that only the amount of money in the account can be withdrawn	login machine withdraw 1000101 50000 withdraw 1000101 50000 logout	Valid accounts file with account 1000101	Transactions file with 1 transaction in it	6out_wdr_maxamt.txt	WDR 0000000 50000 1000101 testname
	46	7in_wdr_para.txt	correct parameters	Check that two parameters are received	login machine withdraw 1000101 logout	Valid accounts file with account 1000101	Transactions file with no transactions in it	7out_wdr_para.txt	EOS 0000000 000 0000000 ***
t_transfer	47	1in_xfr_valmachineamt.txt	Valid machine amount sent	Checking that an machine transfer with a valid dollar amount	login machine transfer 1000001 1010011 50000 logout	Valid accounts file with account 1000001 and 1010011	Transaction file with transfer of $500 from account 1000001 to account 1010011	1out_xfr_valmachineamt.txt	XFR 1000001 50000 1010011 ***
	48	2in_xfr_valtellamt.txt	Valid agent amount	Checking that a agent transfer with a valid	login agent	Valid accounts file with	Transaction file with transfer of	2out_xfr_valtellamt.txt	XFR 1000001 8000000

			sent	dollar amount	transfer 1000001 1010011 8000000 logout	account 1000001 and 1010011	$80000 from account 1000001 to account 1010011		1010011 ***
	49	3in_xfr_neg.txt	Negative amount	Checking that the transfer amount is non negative.	login machine transfer 1000001 1010011 -100 logout	Valid accounts file with accounts 1000001 and 1010011	Transaction file with no transactions in it	3out_xfr_neg.txt	EOS 0000000 000 0000000 ***
	50	4in_xfr_abvmachine.txt	machine above limit	Checking that the transfer amount is $1000.00 or below for an machine	login machine transfer 1000001 1010011 200000 logout	Valid accounts file with accounts 1000001 and 1010011.	Transaction file with no transactions in it	4out_xfr_abvmachine.txt	EOS 0000000 000 0000000 ***
	51	5in_xfr_abvtel.txt	agent above limit	Checking that the transfer amount is $999,999 or below for a agent	login agent transfer 1000001 1010011 100000000 logout	Valid accounts file with accounts 1000001 and 1010011.	Transaction file with no transactions in it	5out_xfr_abvtel.txt	EOS 0000000 000 0000000 ***
	52	6in_xfr_tononex.txt	To non existent account	Check transfer declines if account being transferred to does not exist	login agent transfer 1000001 1010011 100000000 logout	Valid accounts file with account 10000001.	Transaction file with no transactions in it.	6out_xfr_tononex.txt	EOS 0000000 000 0000000 ***
	53	7in_xfr_fromnonex.txt	From non existent account	Check transfer declines if account being transferred from does not exist	login agent transfer 1000001 1010011	Valid accounts file with account 1010011.	Transaction file with no transactions in it.	7out_xfr_fromnonex.txt	EOS 0000000 000 0000000 ***

					100000000 logout				
t_account	54	1in_acc_lenhigh7.txt	account length greater than 7	Check an account number length greater than 7 is not allowed	login machisedne deposit 123456789 50000 logout	Valid accounts file with no accounts in it	Transaction file with no transaction in it	1out_acc_lenhigh7.txt	EOS 0000000 000 0000000 ***
	55	2in_acc_lensmall7.txt	account length less than 7	Check an account number length less than 7 is not allowed	login machine deposit 1 50000 logout	Valid accounts file with no accounts in it	Transaction file with no transaction in it	2out_acc_lensmall7.txt	EOS 0000000 000 0000000 ***
	56	3in_acc_0start.txt	account does not begin with 0	Check an account number does not begin with a 0	login agent createacct 0000102 testname logout	Valid accounts file with no accounts in it	Transaction file with no transaction in it	3out_acc_0start.txt	EOS 0000000 000 0000000 ***
	57	4in_acc_notall0s.txt	account is not special invalid account	Check an account number is not the special invalid account number (0000000)	login machine deposit 0000000 50000 logout	Valid accounts file with no accounts in it	Transaction file with no transaction in it	4out_acc_notall0s.txt	EOS 0000000 000 0000000 ***
t_logout	58	1in_login_dep.txt	deposit command, after logout command	Check a deposit is not accepted after logout	login machine logout deposit 1000001 50000	None	Transaction summary file with no transactions	1oaut_logout_dep.txt	EOS 0000000 000 0000000 ***
	59	2in_login_wdr.txt	withdraw command, after logout command	Check a withdraw is not accepted after logout	login machine logout withdraw 1000001	None	Transaction summary file with no transactions	2out_logout_wdr.txt	EOS 0000000 000 0000000 ***

				50000				
60	3in_login_xfr.txt	transfer command, after logout command	Check a transfer is not accepted after logout	login machine logout transfer 1000001 1000002 50000	None	Transaction summary file with no transactions	3out_logout_xfr.txt	EOS 0000000 000 0000000 ***
61	4in_logout_x2logout.txt	logout command, after logout command	Check logout is not accepted after a logout	login machine logout logout	None	None	4out_logout_x2logout.txt	LOGOUT FAILED