Login - Test Cases

Requirements	Test No.	Test Name	Purpose	Input	Input Files	Output	Output Files
No transactions before login	R1T1	TestIdleLogout	Can't log out before logging in	`logout`	None	Error prompt for user to log in before logout	None
	R1T2	TestIdleCreateAccount	Can't create an account before logging in	`createaccount`	None	Error prompt for user to log in before creating account	None
	R1T3	TestIdleDeleteAccount	Can't delete an account before logging in	`deleteaccount`	None	Error prompt for user to log in before deleting account	None
	R1T4	TestIdleDeposit	Can't deposit before logging in	`deposit`	None	Error prompt for user to log in before depositing	None
	R1T5	TestIdleWithdraw	Can't withdraw before logging in	`withdraw`	None	Error prompt for user to log in before withdrawing	None
	R1T6	TestIdleTransfer	Can't transfer before logging in	`transfer`	None	Error prompt for user to log in before transferring	None
No additional login attempts accepted after a successful login, until after a logout	R2T1	TestAdditionalLoginAttempt	Check if the user tries to login twice before logging out	`login (atm or agent) login logout`	None	Error message for user to logout before attempting another login	None
Only ATM transactions and logout after successful ATM login	R3T1	TestAtmCreateacctAfterLogin	Check if any create account transaction is attempted after ATM login	`Login Atm Createacct`	None	Error message, user can't use createacct transaction in ATM mode	None
	R3T2	TestAtmDeleteacctAfterLogin	Check if any delete account transaction is attempted after ATM login	`Login Atm Deleteacct`	None	Error message, user can't use deleteacct transaction in ATM mode	None

Logout - Test Cases

Requirements	Test No.	Test Name	Purpose	Input	Input Files	Output	Output Files
Should only be accepted when logged in	R1T1	TestValidLogout	Check if the user has logged in before logging out	`Login (any transaction) Logout`	None	Error message, can't logout before logging in	None
Write to transaction summary file after logout	R2T1	TestTransactionSummaryUpdatePostLogout	Checks if the transaction summary file is updated after logout	`Login (any valid transaction) Logout`	TransactionSummaryFile.txt	Error message, cannot write to transaction summary file.	Updated TransactionSummaryFile.txt

Create Account - Test Cases

Requirements	Test No.	Test Name	Purpose	Input	Input Files	Output	Output Files
Only accepted in Agent mode	R1T1	TestValidCreateAccountTransaction	Check if the user is in agent mode when trying to create an account	`Login Agent Createacct logout`	None	Error message for invalid mode, cannot create account in ATM mode	None
New account number is 7 decimal digits not beginning with 0	R2T1	TestValidAccountDigits	Check if the account number are digits and has a length of 7	`Login Agent Createacct 1234567 (acct name) logout`	None	Error message for invalid account number, number must be exactly 7 digits.	None
	R2T2	TestValidAccountStartingDigit	Check if the account number starts with a zero	`Login Agent Createacct 0123456 (acct name) logout`	None	Error message for invalid account number, number cannot start with a zero	None
New account number must be	R3T1	TestValidAccountNumber	Checks if the account number	`Login Agent`	ValidAccountsListFile.txt	Error message for invalid account number, that	ValidAccountsListFile.txt

				already exists	`Createacct (valid number) (acct name) logout`		number already exists.	
New account name is between 3 and 30 alphanumeric characters not starting or ending with a space	R4T1	TestAccountNameLength	Checks if the account name is between 3 and 30 characters	`Login Agent Createacct (acct number) Ben logout`	None	Error message for invalid account name, name must be between 3 and 30 characters	None
	R4T2	TestAlphanumericCharacters	Checks if the account name only consists of alphanumeric characters (except a space)	`Login Agent Createacct (acct number) Ben Logout`	None	Error message for invalid account name, name must only consist of alphanumeric characters, except for space character	None
	R4T3	TestValidSpaceCharacter	Checks if a space character is not at the end or beginning of an account name	`Login Agent Createacct (acct number) Ben Logout`	None	Error message for invalid account name, account name cannot have a space character at the start or end.	None
No Transactions on new account accepted	R5T1	TestTransactionsOnNewAccount	Checks if a transaction was attempted on the new account	`Login Agent Createacct (acct number) (acct name) (transaction) Logout`	None	Error message, cannot have a transaction and create a new account in the same session.	None

Delete Account - Test Cases

Requirements	Test No.	Test Name	Purpose	Input	Input Files	Output	Output Files
Only accepted in Agent mode	R1T1	TestValidDeleteAccount	Checks if the user is in agent mode when trying to delete account	Login Agent Deleteacct (valid account number) (account name) Logout	None	Error message, cannot delete account when in ATM mode.	None
No further transactions should be accepted on a deleted account	R2T1	TestTransactionsOnDeletedAccount	Checks if a transaction was attempted on the deleted account	Login Agent Deleteacct (valid account number) (account name) (transaction) Logout	ValidAccountsListFile.txt	Error message, transactions cannot be accepted on deleted account	ValidAccountsListFile.txt
The account number is valid and save the account name in the transaction summary file	R3T1	TestValidAccountNumber	Checks if the given account number is valid	Login Agent Deleteacct (account number) (account name) Logout	ValidAccountsListFile.txt TransactionSummaryFile.txt	Error message, the provided account does not exist or is invalid.	ValidAccountsListFile.txt TransactionSummaryFile.txt

Deposit - Test Cases

Requirement	Test No.	Test Name	Purpose	Input	Input Files	Output	Output Files
Money is deposited into account	R1T1	TestAtmValidateDeposit	Checks if money was deposited successfully in ATM mode	`Login Atm Deposit (valid account) (valid deposit amount) logout`	TransactionSummaryFile.txt	Error message, money was not deposited successfully	TransactionSummaryFile.txt
	R1T2	TestAgentValidateDeposit	Checks if money was deposited successfully in Agent mode	`Login Agent Deposit (valid account) (valid deposit amount) logout`	TransactionSummaryFile.txt	Error message, money was not deposited successfully	TransactionSummaryFile.txt

Deposits above $2,000 should be rejected in ATM mode	R2T1	TestAtmValidDepositAmount	Check if the deposit in ATM mode is under $2,000	`Login`
				`Atm`
				`Deposit`
				`(valid account)`
				`(deposit amount > $2000)`
				`logout`
					None	Error message, cannot deposit more than $2,000 in ATM mode	None

For ATM, the daily deposit limit is $5,000 per account.	R3T1	TestAtmDailyDepositLimit	Checks if the same account has deposited more than $5,000 per day in ATM mode	`Login`
				`Atm`
				`Deposit`
				`(valid account)`
				`(invalid deposit amount)`
				`logout`
					TransactionSummaryFile.txt	Error message, cannot deposit more than $5,000 per account each day in ATM mode	TransactionSummaryFile.txt

For Agent, deposit limit is $999,999.99 per account.	R4T1	TestAgentDailyDepositLimit	Checks if the same account has deposited more than $999,999.99 per day in Agent mode	`Login`
				`Agent`
				`Deposit`
				`(valid account)`
				`(invalid deposit amount)`
				`logout`
					TransactionSummaryFile.txt	Error message, cannot deposit more than $999,999.99 per account in Agent mode	TransactionSummaryFile.txt

Withdraw - Test Cases

Requirement	Test No.	Test Name	Purpose	Input	Input Files	Output	Output Files

Money is withdrawn from account	R1T1	TestAtmValidateWithdrawal	Checks if money was withdrawn successfully in ATM mode	`Login`
				`Atm`
				`Withdrawal`
				`(valid account)`
				`(valid withdrawal amount)`
				`logout`
					TransactionSummaryFile.txt	Error message, money was not withdrawn successfully	TransactionSummaryFile.txt

	R1T2	TestAgentValidateWithdrawal	Checks if money was withdrawn successfully in Agent mode	`Login`
				`Agent`
				`Withdrawal`
				`(valid account)`
				`(valid withdrawal amount)`
				`logout`
					TransactionSummaryFile.txt	Error message, money was not withdrawn successfully	TransactionSummaryFile.txt

A total of at most $5,000 can be withdrawn from a single account in a single day (when in atm mode)	R2T1	TestAtmDailyWithdrawalLimit	Check if daily amount withdrawn exceeds $5,000	`Login`
				`Atm`
				`Withdrawal`
				`(valid account)`
				`(invalid amount)`
				`logout`
					TransactionSummaryFile.txt	Error message, Cannot withdraw more than $5,000 in ATM mode in one day	TransactionSummaryFile.txt

Withdrawals above $1,000 should be rejected in ATM mode	R3T1	TestAtmWithdrawalLimit	Check if withdrawal amount exceeds $1000	`Login`
				`Atm`
				`Withdrawal`
				`(valid account)`
				`(amount > $1000)`
				`logout`
					None	Error message, cannot withdraw that $1,000 in ATM mode	None

Withdrawals above $999,999.99 should be rejected in Agent mode	R4T1	TestAgentWithdrawalLimit	Check if withdrawal amount exceeds $999,999.99 in Agent mode	`Login`
				`Atm`
				`Withdrawal`
				`(valid account)`
				`(amount > $999,999.99)`
				`logout`
					None	Error message, cannot withdraw more than $999,999.99 in Agent mode	None

Account number must be valid	R5T1	TestAtmValidWithdrawalAccount	Check if the account is valid in atm mode	`Login`
				`Atm`
				`Withdrawal`
				`(invalid account)`
				`(amount)`
				`logout`
					ValidAccountsListFile.txt	Error message, invalid account number	ValidAccountsListFile.txt

	R5T2	TestAgentValidWithdrawalAccount	Check if the account is valid in agent mode	`Login`
				`Agent`
				`Withdrawal`
				`(invalid account)`
				`(amount)`
				`Logout`
					ValidAccountsListFile.txt	Error message, invalid account number	ValidAccountsListFile.txt

Transfer - Test Cases

Requirement	Test No.	Test Name	Purpose	Input	Input Files	Output	Output Files

Money is transferred between accounts	R1T1	TestAtmValidate Transfer	Checks if the money was transferred between accounts in atm mode	`Login`
				`Atm`
				`Transfer`
				`(valid account)`
				`(valid account)`
				`(valid transfer amount)`
				`logout`
					TransactionSum maryFile.txt	Error message, money was not transferred successfully	TransactionSummaryFile.txt

	R1T2	TestAgentValida teTransfer	Checks if the money was transferred between accounts in agent mode	`Login`
				`Agent`
				`Transfer`
				`(valid account)`
				`(valid account)`
				`(valid transfer amount)`
				`logout`
					TransactionSum maryFile.txt	Error message, money was not transferred successfully	TransactionSummaryFile.txt

Both accounts must be valid	R2T1	TestAtmValidFir stAccountTransf er	Checks if the first (to) account is valid	`Login`
				`Atm`
				`Transfer`
				`(invalid account)`
				`(account)`
				`logout`
					ValidAccountsLi stFile.txt	Error message, invalid first (to) account	ValidAccountsListFile.txt

	R2T2	TestAtmValidSe condAccountTra nsfer	Checks if the second account is valid	`Login`
				`Atm`
				`Transfer`
				`(account)`
				`(invalid account)`
				`logout`
					ValidAccountsLi stFile.txt	Error message, invalid second (from) account	ValidAccountsListFile.txt

	R2T3	TestAgentValidF irstAccountTran sfer	Checks if the first (to) account is valid	`Login`
				`Agent`
				`Transfer`
				`(invalid account)`
				`(account)`
				`logout`
					ValidAccountsLi stFile.txt	Error message, invalid first (to) account	ValidAccountsListFile.txt

	R2T4	TestAgentValid SecondAccount Transfer	Checks if the second (from) account is valid	`Login`
				`Agent`
				`Transfer`
				`(account)`
				`(invalid account)`
				`Logout`
					ValidAccounstLi stFile.txt	Error message, invalid second (from) account	ValidAccountsListFile.txt

Transfer amounts of more than $10,000 should be rejected in ATM mode	R3T1	TestAtmTransfe rLimit	Checks if transfer amount exceeds $10,000 in atm mode	`Login`
				`Atm`
				`Transfer`
				`(account)`
				`(account)`
				`(transfer amount > $10,000)`
				`Logout`
					None	Error message, cannot transfer more that $10,000 in ATM mode	None

Transfer amounts of more than $999,999.99 should be rejected in Agent mode	R3T1	TestAgentTransf erLimit	Checks if transfer amount exceeds $999,999.9 9	`Login`
				`Agent`
				`Transfer`
				`(account)`
				`(account)`
				`(transfer amount > $999,999.99)`
				`Logout`
					None	Error message, cannot transfer more that $999,999.99 in Agent mode	None

Daily limit for transferring out of a single account is $10,000 for ATM mode	R3T1	TestAtmDailyTr ansferLimit	Checks if daily transfer amount exceeds $10,000	`Login`
				`Atm`
				`Transfer`
				`(account)`
				`(account)`
				`(invalid transfer amount)`
				`Logout`
					TransactionSum maryFile.txt	Error message, cannot transfer more than $10,000 from a single account in ATM mode	TransactionSummaryFile.txt

Valid Accounts List File - Test Cases

Requirement	Test No.	Test Name	Purpose	Input	Input Files	Output	Output Files
Consists of text lines containing only an account number	R1T1	TestVALCharNu mber	Each line has exactly 7 characters	None	ValidAccounts ListFile.txt	Error message, account number must be exactly 7 characters	ValidAccountsListFile.txt
	R1T2	TestVALDigits	Each line only contains digits and does not start with zero	None	ValidAccounts ListFile.txt	Error message, account numbers must contain only digits and not start with zero	ValidAccountsListFile.txt
	R1T3	TestVALSpecial Number	List ends with the special account number	None	ValidAccounts ListFile.txt	Error message, Valid Accounts List File must end with a special account number, containing 7 zeros	ValidAccountsListFile.txt

Transaction Summary File - Test Cases

Requirement	Test No.	Test Name	Purpose	Input	Input Files	Output	Output Files
Has at most 61 characters per line	R1T1	TestValidCharN umber	Check if each line has at most 61 characters	(Line with more than 61 characters)	TransactionSum maryFile.txt	Error message, line has too many characters	TransactionSummaryFile.txt
Each line starts with a valid transaction code	R2T1	TestValidTrana ctionCode	Check if the first three characters of each line are valid transaction codes	DEO AAAA MMMM BBBB NNNN	TransactionSum maryFile.txt	Error message, invalid transaction code	TransactionSummaryFile.txt
Items are separated by exactly one space	R3T1	TestValidItemS pacing	Checks if there are spaces between each item on each line	CCCAAAA MMMM BBBB NNNN	TransactionSum maryFile.txt	Error message, each item must be separated by exactly one space	TransactionSummaryFile.txt
	R3T2	TestDoubleSpa ces	Checks if any space is next to another space on each line	CCC AAAA MMMM BBBB NNNN	TransactionSum maryFile.txt	Error message, each item must be separated by exactly one space	TransactionSummaryFile.txt
Account numbers are exactly seven digits, not beginning with zero	R4T1	TestToAccount ValidDigitLengt h	Checks if the first (to) account number is exactly seven digits	CCC 1234567 MMMM BBBB NNNN	TransactionSum maryFile.txt	Error message, account numbers must be exactly 7 digits	TransactionSummaryFile.txt
	R4T2	TestFromAccou ntValidDigitLen gth	Checks if the second (from) account number is exactly seven digits on each line	CCC AAAA MMMM 1234567 NNNN	TransactionSum maryFile.txt	Error message, account numbers must be exactly 7 digits	TransactionSummaryFile.txt
	R4T3	TestToAccount BeginsWithZero	Checks if the first (to) account number only begins with a zero but is not all zeros on each line	CCC 0123456 MMMM BBBB NNNN	TransactionSum maryFile.txt	Error message, account numbers cannot begin with zero	TransactionSummaryFile.txt
	R4T4	TestFromAccou ntBeginsWithZe ro	Checks if the second (from) account number only begins with a zero but is not all zeros on each line	CCC AAAA MMMM 0123456 NNNN	TransactionSum maryFile.txt	Error message, account numbers cannot begin with zero	TransactionSummaryFile.txt

Monetary amounts are between 3 and 8 decimal digits	R5T1	TestValidMonetaryAmount	Checks if the monetary amount is between 3 and 8 digits on each line	`CCC AAAA 00 BBBB NNNN`	TransactionSummaryFile.txt	Error message, monetary amount must be between 3 and 8 decimal digits	TransationSummaryFile.txt
Account names are between 3 and 30 alphanumeric characters, possibly including spaces but not at the beginning or end	R6T1	TestValidAlphanumericCharacterLength	Checks if each account name on each line is between 3 and 30 alphanumeric characters	`CCC AAAA MMMM BBBB BD`	TransactionSummaryFile.txt	Error message, account name must be between 3 and 30 alphanumeric characters	TransactionSummaryFile.txt
	R6T2	TestValidAccountNameSpace	Checks if there is a space at the start or end of each account name on each line	`CCC AAAA MMMM BBBB  BEN` (Note: there is a double space)	TransactionSummaryFile.txt	Error message, account name cannot begin or end with a space	TransactionSummaryFile.txt
Unused numeric fields are filled with zeros	R7T1	TestNEWUnusedNumericFields	Checks if the numeric fields are zero for each create account line	`NEW AAAA 000 BBBB NNNN`	TransactionSummaryFile.txt	Error message, unused numeric fields must be filled with zeros	TransactionSummaryFile.txt
	R7T2	TestDELUnusedNumericFields	Checks if the numeric fields are zero for each delete account line	`DEL AAAA 000 BBBB NNNN`	TranactionSummaryFile.txt	Error message, unused numeric fields must be filled with zeros	TransactionSummaryFile.txt
	R7T3	TestEOSUnusedNumericFields	Checks if the numeric fields are zero for each end of session line	`EOS AAAA 000 BBBB NNNN`	TranactionSummaryFile.txt	Error message, unused numeric fields must be filled with zeros	TransactionSummaryFile.txt
Unused account name fields are filled with three asterisks	R8T1	TestDEPUnusedNameFields	Checks if the name fields are *** for each deposit line	`DEP AAAA MMMM BBBB ***`	TransactionSummaryFile.txt	Error message, unused account name fields must be filled with three asterisks	TransactionSummaryFile.txt
	R8T2	TestWDRUnusedNameFields	Checks if the name fields are *** for each withdrawal line	`WDR AAAA MMMM BBBB ***`	TransactionSummaryFile.txt	Error message, unused account name fields must be filled with three asterisks	TransactionSummaryFile.txt
	R8T3	TestXFRUnusedNameFields	Checks if the name fields are *** for each transfer line	`XFR AAAA MMMM BBBB ***`	TransactionSummaryFile.txt	Error message, unused account name fields must be filled with three asterisks	TransactionSummaryFile.txt
	R8T4	TestEOSUnusedNameFields	Checks if the name fields are *** for each end of session line	`EOS AAAA MMMM BBBB ***`	TransactionSummaryFile.txt	Error message, unused account name fields must be filled with three asterisks	TransactionSummaryFile.txt
The set of transactions ends with an end of session (EOS) transaction code	R9T1	TestValidTransactionSummaryFile	Checks if each set of transactions ends with an EOS code	`Login (anything) Logout`	TransactionSummaryFile.txt	Error message, set of transactions must end with EOS transaction code in transaction summary file	Updates TransactionSummaryFile.txt

Test Plan:

To run our tests, we will be using the unittest module that is built into python. All of our tests will be in their respective subdirectories within the test/ directory. For example, the tests for login will have the path /tests/test_login/. Within each subdirectory, there will also be a directory for the logs (i.e tests/test_login/logs/<date of test>.txt). To run our tests, we will write a script within the tests/ directory that will execute all of the tests and put their output in their respective log files. Since the project has quite a few unit tests, having the results put in a log will prevent the terminal from becoming cluttered, and the test results more readable.