Project Phase One

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Abstract:

The following document contains the description of a testing plan for the front end of our Auction System. The testing plan includes the directory structure for the organization of test files and the methodology which will be used to conduct the testing. Finally, a chart will detail the rationale for each test, as well as provide a description of the input required to facilitate the test and the expected output.

Note: references to 'testName' and 'transactionName' represent variable strings, containing an existing test and corresponding transaction name respectively.

Assumptions:

- Customer stated that trivial test cases such as basic input analysis (invalid input type, formatting), should not be fully considered. More focus on analysis of particular system transaction test cases.
- All test input files are handcrafted and 100% correct, meaning that the test case input files match identically with their respective semantics outlined in this document. They should thusly contain no errors.
- These tests will not be run on an active transaction database. This is to avoid any possible users which make take the name 'user05', or like situations that inadvertently cause test cases to fail.
- admin01 will exist without conducting any tests, since an admin user is required to create a standard user

Test Plan:

- A single bash script will be executed in the project root directory.
- This script will run all tests contained within the subdirectories of '../test/input/'.
- The script will pipe the output to two seperate files within the '../test/output/transactionName' directory; one containing the runtime terminal output, and another the transaction file output.
- The script with then compare each output file to the corresponding the expected output; failing if any differences are found.

Directory Organization:

```
.
|-- build
|-- src
|-- test
     |-- output
          |-- transactionName
                |-- testName.cout
                |-- testName.fout
                |-- ...
          |-- ...
     |-- input
          |-- transactionName
                |--testName.inp
          |-- ...
     |-- expectedOutput
          |-- transactionName
                |-- testName.cexp
                |-- testName.fexp
          |-- ...
|-- ...
```

The above figure depicts the directory tree structure we will use for testing. Within the input and output directories, input test files will be stored in a 'inputs/trasactionName/testName.inp' format. All test files will ran successively, and their intermediate results will be stored in a '../output/transactionName/testName.cout' and '../output/transactionName/testName.fout' format. Where '.cout' files are console output, and '.fout' files are the transaction file output. These will be compared to corresponding '../expectedOutput/transactionName/testName' files of both types.

File types:

- '.inp': input test file
- '.cout': terminal output log
- '.fout': file output log
- '.cexp': expected terminal output
- '.fexp': expected file output

Test Order:

1. create   - required to test user01
2. login   - must be working to evaluate other transactions
3. Advertise - required to test bid, refund
4. Bid
5. Refund
6. addCredit
7. Delete   - tested last since user01 is needed

```
Test Cases
```

```
Transaction: login
```

Test Name	Description	Input	Output File	Output Terminal
login01	Standard user logs in	login user01 logout	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Username:** user01 **Welcome, user01!** **Logging out user01.**
login02	Admin user logs in	login admin01 logout	`10_admin01_____AA_000000000` `00_admin01_____AA_000000000`	**Username:** admin01 **Welcome, admin01!** **Logging out admin01.**
login03	User attempts login transaction after initial login	login user01 login logout	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Username:** user01 **Welcome, user01!** **Username:** user01 **Unable to login, user:** **user01 is already logged** **in.** **Logging out user01.**
login04	Non-login transaction called before login	All transactions except login	`00_user01_____FS_000000000`	**Unexpected transaction** **before login**
login05	User attempts to login to username	login user05 logout		**Username:** user05 **ERROR: Entered username** **does not exist.**

	which does not exists			

Transaction: Logout

Test Name	Description	Input	Output File	Output Terminal
logout01	User logs out after logging in, and completing transactions	login user01 logout	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Username:** user01 **Welcome, user01!** **Logging out user01.**
logout02	User attempts to logout before logging in	logout		**Error:** No user is current logged in

Transaction: Create

Test Name	Description	Input	Output File	Output Terminal

create01	Admin creates standard users.	login
		admin01
		create
		user01
		FS
		0
		create
		user02
		FS
		0
		create
		buyer01
		BS
		0
		create
		seller01
		SS
		0
		logout
			`10_admin01_____AA_000000000`
			`01_user01_____FS_000000000`
			`01_user02_____FS_000000000`
			`01_buyer01_____BS_000000000`
			`01_seller01_____SS_000000000`
			`00_admin01_____AA_000000000`
				Welcome, admin01!
				user01 created by
				admin01.
				user02 created by
				admin01.
				buyer01 created by
				admin01.
				seller01 created by
				admin01.
				Logging out admin01.

create02	Admin creates another admin	login
		admin01
		create
		admin02
		AA
		0
		logout
			`10_admin01_____AA_000000000`
			`01_admin02_____AA_000000000`
			`00_admin01_____AA_000000000`
				Welcome, admin01!
				admin02 created by
				admin01.
				Logging out admin01.

create03	User attempts to	login user01	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Welcome, user01!** **Error: Standard user**

	create another user	create logout		**cannot use CREATE** **Logging out user01.**
create04	Admin attempts to create user with name longer than 15 characters	login admin01 create username12 345678 FS 0 logout	`10_admin01_____AA_000000000` `00_admin01_____AA_000000000`	**Welcome, admin01!** **Error: New username** **cannot exceed 15** **characters.** **Logging out admin01.**

create05	Admin attempts to create a user with a pre-existing name	login
		admin01
		create
		user01
		FS
		0
		create
		user01
		FS
		0
		logout
			`10_admin01_____AA_000000000`
			`01_user01_____FS_000000000`
			`00_admin01_____AA_000000000`
				Welcome, admin01!
				user01 created by
				admin01.
				Error: user01 already
				exists.
				Logging out admin01.

create06	Admin attempts to create a user with over 999,999 credits	login admin01 create user01 FS 0 logout	`10_admin01_____AA_000000000` `00_admin01_____AA_000000000`	**Welcome, admin01!** **Error: User cannot have** **more than the 999,999** **credit limit.** **Logging out admin01.**

Transaction: Delete

Test Name	Description	Input	Output File	Output Terminal

delete01	Admin deletes a user	login admin01 delete user01 logout	`10_admin01_____AA_000000000`
			`02_user01_____FS_000000000`
			`00_admin01_____AA_000000000`
				Welcome, admin01!
				user01 deleted by admin01.
				Logging out admin01.

delete02	Admin attempts to delete another admin	login admin01 delete admin02 logout	`10_admin01_____AA_000000000` `00_admin01_____AA_000000000`	**Welcome, admin01!** **Error: Admins cannot delete other admins.** **Logging out admin01.**
delete03	User attempts to delete another user	login user01 delete user02 logout	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Welcome, user01!** **Error: Standard users cannot delete other standard users.** **Logging out user01.**
delete04	Admin attempts to delete itself	login admin01 delete admin01 logout	`10_admin01_____AA_000000000` `00_admin01_____AA_000000000`	**Welcome, admin01!** **Error: User cannot delete itself.** **Logging out admin01.**
delete05	Admin attempts to delete a non-existent user	login admin01 delete user05 logout	`10_admin01_____AA_000000000` `00_admin01_____AA_000000000`	**Welcome, admin01!** **Error: user05 does not exist.** **Logging out admin01.**

Transaction: Advertise

Test Name	Description	Input	Output File	Output Terminal

advertise01	Full-standard user puts up an item for auction	login
		user01
		advertise
		item01
		5
		100
		logout
			`10_user01_____FS_000000000`
			`03_item01_____user01_`
			`_____005_000100.00`
			`00_user01_____FS_000000000`
				Welcome, user01!
				item01 is up for auction!
				Logging out user01.

advertise02	Standard-buy user attempts to put up an item	login buyer01 advertise buyer01 5 100 logout	`10_buyer01_____BS_000000000` `00_buyer01_____BS_000000000`	**Welcome, buyer01!** **Error: Buy-standard user cannot put items up for auction.** **Logging out buyer01.**
advertise03	User attempts to put an item up for auction over the price limit	login user01 advertise item01 5 1000 logout	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Welcome, user01!** **Error: Cannot put items up for over 999.99 credits.** **Logging out user01.**
advertise04	User attempts to put an item up with a name exceeding the character limit	login user01 advertise itemnamelomb olombo123456 789 logout	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Welcome, user01!** **Error: Item name cannot exceed 25 characters.** **Logging out user01**

advertise05	User attempts to put an item up with an expiration over the maximum days	login user01 advertise item01 101 100 logout	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Welcome, user01!** **Error: Item cannot be up** **for over 100 days** **Logging out user01**

advertise06	User attempts to advertise multiple times in one session	login
		user01
		advertise
		item02
		5
		100
		advertise
		item03
		5
		100
		logout
			`10_user01_____FS_000000000`
			`03_item02_____user01_`
			`_____005_000100.00`
			`00_user01_____FS_000000000`
				Welcome, user01!
				item02 is up for auction!
				Error: Cannot advertise
				multiple items in one
				session.
				Logging out user01

advertise07	User attempts to advertise an item that is already up for auction.	login user01 advertise item01 5 100 logout	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Welcome, user01!** **Error: item01 is already up** **for auction.**

Transaction: Bid

Test Name	Description	Input	Output File	Output Terminal

bid01	User attempts to make a bid with correct privilege.	login user01 bid item01 seller01 500 logout	`10_user01_____FS_000500.00`
			`04_item01_____seller01__`
			`_____005_000500.00`
			`00_user01_____FS_000000000`
				Welcome, user01!
				-Item: item01
				- Seller: seller01
				Highest bid:400
				Bid: 500
				Bid made on item01!
				Logging out user01

bid02	User attempts to make a bid without correct privilege (standard-sell)	login sellerr01 bid item01 user01 logout	`10_seller01_____SS_000000000` `00_seller01_____SS_000000000`	**Welcome, seller01!** **Error: seller01 does not** **have privilege to buy.** **Logging out user01**
bid03	User attempts to make a bid on an item name which does not exist	login user01 bid item01 seller01 logout	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Welcome, user01!** **- item: item01** **- Seller: seller01** **Error: item01 does not** **exist.** **Logging out user01**
bid04	User makes bid less than 5% greater than the highest bid	login user01 bid item01 seller01 410 logout	`10_user01_____FS_000410.00` `00_user01_____FS_000410.00`	**Welcome, user01!** **- item: item01** **- Seller: seller01** **Highest bid:400** **Bid:** 410 **Error: Bid is not 5% greater** **than current highest bid.** **Logging out user01**

bid05	Admin makes bid higher than highest bid	login admin01 bid item01 seller01 410 logout	`10_admin01_____AA_000410.00`
			`04_item01_____seller01__`
			`_____005_000410.00`
			`00_admin01_____AA_000000000`
				Welcome, admin01!
				- item: item01
				- Seller: seller01
				Highest bid:400
				Bid: 410
				Bid made on item01!
				Logging out admin01

bid06	User attempts to bid on their own item.	login user01 bid item01 user01 500 logout	`10_user01_____FS_000500.00` `00_user01_____FS_000500.00`	**Welcome, user01!** **Error: Can't bid on your own items.** **Logging out user01**

Transaction: Refund

Test Name	Description	Input	Output File	Output Terminal

refund01	Admin attempts refund with existing buyer and seller.	login admin01 refund buyer01 seller01 500 logout	`10_admin01_____AA_000000000`
			`05_buyer01_____seller01_____000500.00`
			`00_admin01_____AA_000000000`
				Welcome, admin01!
				- buyer: buyer01
				- seller: seller01
				- credit: 500
				Logging out admin01.

refund02	Admin attempts refund with non-existing buyer or seller.	login admin01 refund buyer01 seller01 500 logout	`10_admin01_____AA_000000000` `00_admin01_____AA_000000000`	**Welcome, admin01!** **- buyer:** buyer01 **- seller:** seller01 **- credit:** 500 **ERROR: Seller user seller01 does not exist.** **Logging out admin01.**
refund03	Non-privileged user attempts to refund	login refund logout	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Welcome, user01!** **ERROR: user01 does not have privilege to refund.** **Logging out user01.**

Transaction: Add Credit

Test Name	Description	Input	Output File	Output Terminal

addcredit01	Admin adds credit to existing user	login
		admin01
		addcredit
		user01
		500
		logout
			`10_admin01_____AA_000000000`
			`06_user01_____FS_000000500`
			`00_admin01_____AA_000000000`
				Welcome, admin01!
				- user: user01
				- credit: 500
				Credit of 500 added to user01.
				Logging out admin01

addcredit02	Admin adds credit to non-existing user	login admin01 addcredit user02 500 logout	`10_admin01_____AA_000000000` `00_admin01_____AA_000000000`	**Welcome, admin01!** **- user:** user01 **- credit:** 500 **ERROR: User user01 does not exist.** **Logging out admin01**

addcredit03	Standard user adds credit within valid range	login
		user01
		addcredit
		500
		logout
			`10_user01_____FS_000000000`
			`06_user01_____FS_000500.00`
			`00_user01_____FS_000000500`
				Welcome, user01!
				- credit: 500
				Credit of 500 added to user01.
				Logging out user01

addcredit04	Standard user adds credit higher than valid range	login user01 addcredit 1010 logout	`10_user01_____FS_000000000` `00_user01_____FS_000000000`	**Welcome, user01!** **- credit:** 500 **ERROR: Credit inputted above maximum value ($1000.00)** **Logging out user01**

addcredit05	Admin adds credit to another admin user	login
		admin01
		addcredit
		admin02
			`10_admin01_____AA_000000000`
			`06_admin02_____AA_000500.00`
			`00_admin01_____AA_000000000`
				Welcome, admin01!
				- user: admin02
				- credit: 500
				Credit of 500 added to

		500 logout		**admin02.** **Logging out admin01**

addcredit06	User attempts to add more than maximum input credit over two or more transactions.	login
		user01
		addcredit
		700
		addcredit
		500
		logout
			`10_user01_____FS_000000000`
			`06_user01_____FS_000700.00`
			`00_user01_____FS_000700.00`
				Welcome, user01!
				- credit: 700
				Credit of 700 added to user01.
				- credit: 500
				ERROR: Add credit limit over range (currently pending \$700)
				Logging out user01