

TEST PLAN – SOFTWARE ARCH & DESIGN PROJECT ASSIGNMENT #1

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1. PURPOSE

The purpose of this document is to guide a user through a set of tests that will prove/disprove that the program delivers all functionality that it is supposed to contain. Tests are broken down by User Type and User functionality. Multiple tests may exist for one type of functionality. In order to test the functionality, read an explanation of the test and follow the steps in order to run the test. The tests are to be completed sequentially to ensure that the user is logged into the appropriate account to run the tests from.

****Note:** “transaction success” and “transaction failure” messages are not the literal output of the system on a successful or failed transaction but indicate that the specific message for that transaction’s success or failure will be printed out.

2. CUSTOMER FUNCTIONALITY TESTS

a. LOGIN AS CUSTOMER

i. Login with invalid username/password combo

1. Explanation: Test that non-users are incapable of logging into and accessing the bank system
2. Steps:
 - a. Run software-arch-project/app/main.py
 - b. Username Prompt: Type “**nonUser**”
 - c. Password Prompt: Type “**blah**” (or whatever you want)
 - d. Observe login error message

ii. Login with valid username/password combo

1. Explanation: Test that registered customers are capable of logging into and accessing the bank system
2. Steps:
 - a. Run software-arch-project/app/main.py
 - b. Username Prompt: Type “**Customer1**” and enter
 - c. Password Prompt: Type “**password**” and enter
 - d. Observe message that login was successful. NOTE: Remain logged in for the remainder of the Customer functionality tests.

b. GET HELP WITH CUSTOMER OPTIONS

i. Get help with customer options

1. Explanation: Typing “**help**” when logged in as a customer displays customer options
2. Steps
 - a. Be logged in as Customer1
 - b. Type “**help**” and enter

c. Read the help dialogue for customer options

c. DEPOSIT (ADD) FUNDS

i. Deposit funds to account belonging to user

1. Explanation: Specify the number of an account belonging to the user and the amount to deposit to that account. The transaction should succeed.

2. Steps:

- a. Be logged in as Customer1
- b. Type **"d"** to deposit and enter
- c. Account Number Prompt: Type **"1"** and enter
- d. Amount Prompt: Type **"500.00"** and enter
- e. Observe the "transaction success" message

ii. Try to deposit funds to account not belonging to user

1. Explanation: Specify the number of an account not belonging to the user and the amount to deposit to that account. The transaction should fail.

2. Steps:

- a. Be logged in as Customer1
- b. Type **"d"** to deposit and enter
- c. Account Number Prompt: Type **"3"** and enter
- d. Amount Prompt: Type **"500.00"** and enter
- e. Observe the "transaction failure" message

d. WITHDRAW FUNDS

i. Withdraw amount less than or equal to the funds in account

1. Explanation: Specify the number of an account belonging to the user and the amount to withdraw from the account less than or equal to the amount in the account. The transaction should succeed.

2. Steps:

- a. Be logged in as Customer1
- b. Type **"w"** to withdraw and enter
- c. Account Number Prompt: Type **"1"** and enter
- d. Amount Prompt: Type **"100.00"** and enter
- e. Observe the "transaction success" message

ii. Try to withdraw more funds than are in account

1. Explanation: Specify the number of an account belonging to the user and the amount to withdraw from the account greater than the amount within the account. The transaction should fail.

2. Steps:

- a. Be logged in as Customer1
- b. Type **"w"** to withdraw and enter
- c. Account Number Prompt: Type **"1"** and enter
- d. Amount Prompt: Type **"600.00"** and enter

- e. Observe the “transaction failure” message
- iii. Try to withdraw funds from an account that doesn’t belong to the user
 - 1. Explanation: Specify the number of an account not belonging to the user and the amount to withdraw from the account. The transaction should fail.
 - 2. Steps:
 - a. Be logged in as Customer1
 - b. Type “w” to withdraw and enter
 - c. Account Number Prompt: Type “3” and enter
 - d. Amount Prompt: Type “100.00” and enter
 - e. Observe the “transaction failure” message
- e. TRANSFER FUNDS
 - i. Transfer amount of funds less than or equal to the funds in account
 - 1. Explanation: Specify the number of the account to transfer funds from (belonging to the user) and the number of the account to transfer funds to (belonging to the user), along with the amount of funds to be transferred (less than or equal to the amount of funds available in the account transferring from). The transaction should succeed.
 - 2. Steps:
 - a. Be logged in as Customer1
 - b. Type “t” to transfer and enter
 - c. Account Number 1 Prompt: Type “1” and enter
 - d. Amount Prompt: Type “100.00” and enter
 - e. Account Number 2 Prompt: Type “2” and enter
 - f. Observe the “transaction success” message
 - ii. Try to transfer more funds than are in account
 - 1. Explanation: Specify the number of the account to transfer funds from (belonging to the user) and the number of the account to transfer funds to (belonging to the user), along with the amount of funds to be transferred (greater than the amount of funds available in the account transferring from). The transaction should fail.
 - 2. Steps:
 - a. Be logged in as Customer1
 - b. Type “t” to transfer and enter
 - c. Account Number 1 Prompt: Type “1” and enter
 - d. Amount Prompt: Type “1000.00” and enter
 - e. Account Number 2 Prompt: Type “2” and enter
 - f. Observe the “transaction failure” message
 - iii. Try to transfer funds to an account that doesn’t belong to the user
 - 1. Explanation: Specify the number of the account to transfer funds from (belonging to the user) and the number of the account to transfer funds to (not belonging to the user), along with the amount of funds to be

transferred (less than or equal to the amount of funds available in the account transferring from). The transaction should fail.

2. Steps:

- a. Be logged in as Customer1
- b. Type **"t"** to transfer and enter
- c. Account Number 1 Prompt: Type **"1"** and enter
- d. Amount Prompt: Type **"100.00"** and enter
- e. Account Number 2 Prompt: Type **"3"** and enter
- f. Observe the "transaction failure" message

iv. Try to transfer funds from an account that doesn't belong to the user

1. Explanation: Specify the number of the account to transfer funds from (not belonging to the user) and the number of the account to transfer funds to (belonging to the user), along with the amount of funds to be transferred (less than or equal to the amount of funds available in the account transferring from). The transaction should fail.

2. Steps:

- a. Be logged in as Customer1
- b. Type **"t"** to transfer and enter
- c. Account Number 1 Prompt: Type **"3"** and enter
- d. Amount Prompt: Type **"100.00"** and enter
- e. Account Number 2 Prompt: Type **"1"** and enter
- f. Observe the "transaction failure" message

f. VIEW CUSTOMER TRANSACTION LOG

i. View all customer transactions

1. Explanation: View a log of all the transactions the customer user has carried out.

2. Steps:

- a. Be logged in as Customer1
- b. Type **"l"** (lowercase L) to view log
- c. Observe the log of user activity

g. EXIT APPLICATION

i. Exit the application

1. Explanation: Exit the banking system functionality and effectively log the user out.

2. Steps:

- a. Be logged in as Customer1
- b. Type **"exit"** to exit and enter. The application will close and must be restarted to interact further with the banking system.

3. ADMIN FUNCTIONALITY TESTS

- a. LOGIN AS ADMIN
 - i. Login with valid username/password combo
 - 1. Explanation: Test that registered admins are capable of logging into and accessing the bank system.
 - 2. Steps:
 - a. Run software-arch-project/app/main.py
 - b. Username Prompt: Type "**Admin1**" and enter
 - c. Password Prompt: Type "**password**" and enter
 - d. Observe message that login was successful. NOTE: Remain logged in for the remainder of the Admin functionality tests.
- b. GET HELP WITH ADMIN OPTIONS
 - i. Get help with admin options
 - 1. Explanation: Typing "**help**" when logged in as an admin displays admin options
 - 2. Steps
 - a. Be logged in as Admin1
 - b. Type "**help**" and enter
 - c. Read the help dialogue for admin options
- c. CREATE CUSTOMER
 - i. Create user with valid username/password combo
 - 1. Explanation: Tests creating a user with a valid username/password combo. The transaction should succeed.
 - 2. Steps:
 - a. Be logged in as Admin1
 - b. Type "**n**" to create new customer and enter
 - c. Username Prompt: Type "**Customer3**" and enter
 - d. Password Prompt: Type "**password**" and enter
 - e. Observe "transaction success" message
 - ii. Try to create user with already existing username
 - 1. Explanation: Tests creating a user with an existing username and password. The transaction should fail.
 - 2. Steps:
 - a. Be logged in as Admin1
 - b. Type "**n**" to create new customer and enter
 - c. Username Prompt: Type "**Customer3**" and enter
 - d. Password Prompt: Type "**password**" and enter
 - e. Observe "transaction failure" message
 - iii. Try to create user with password that is too short
 - 1. Explanation: Tests creating a user with a valid username and invalid password
 - 2. Steps:
 - a. Be logged in as Admin1

- b. Type “n” to create new customer and enter
- c. Username Prompt: Type “**Customer4**” and enter
- d. Password Prompt: Type “**pass**” and enter

d. CREATE ACCOUNTS

- i. Create a checking account with a valid account number
 - 1. Explanation: Test creating a checking account with a valid number not being used. The transaction should succeed.
 - 2. Steps:
 - a. Be logged in as Admin1
 - b. Type “c” to create an account and enter
 - c. Account Type Prompt: Type “c” and enter
 - d. Account Number Prompt: Type “5” and enter
 - e. Observe the “transaction success” message
- ii. Create a checking account with an account number already in use
 - 1. Explanation: Test creating a checking account with a number already being used. The transaction should fail.
 - 2. Steps:
 - a. Be logged in as Admin1
 - b. Type “c” to create an account and enter
 - c. Account Type Prompt: Type “c” and enter
 - d. Account Number Prompt: Type “5” and enter
 - e. Observe the “transaction failure” message
- iii. Create a savings account with a valid account number
 - 1. Explanation: Test creating a savings account with a valid number not being used. The transaction should succeed.
 - 2. Steps:
 - a. Be logged in as Admin1
 - b. Type “c” to create an account and enter
 - c. Account Type Prompt: Type “s” and enter
 - d. Account Number Prompt: Type “6” and enter
 - e. Observe “transaction success” message
- iv. Create a savings account with an account number already in use
 - 1. Explanation: Test trying to create a savings account with a number already being used. The transaction should fail.
 - 2. Steps:
 - a. Be logged in as Admin1
 - b. Type “c” to create an account and enter
 - c. Account Type Prompt: Type “s” and enter
 - d. Account Number Prompt: Type “6” and enter
 - e. Observe “transaction failure” message

e. ASSIGN ACCOUNTS TO CUSTOMER

- i. Assign a checking account to customer

1. Explanation: Tests assigning a checking account to a customer.
Transaction should succeed.
2. Steps:
 - a. Be logged in as Admin1
 - b. Type “a” to assign account and enter
 - c. Account Number Prompt: Type “5” and enter
 - d. Username Prompt: Type “Customer2” and enter
 - e. Observe “transaction success” message
- ii. Assign a savings account to customer
 1. Explanation: Tests assigning a savings account to a customer.
Transaction should succeed.
 2. Steps:
 - a. Be logged in as Admin1
 - b. Type “a” to assign account and enter
 - c. Account Number Prompt: Type “6” and enter
 - d. Username Prompt: Type “Customer2” and enter
 - e. Observe “transaction success” message
- f. VIEW SYSTEM LOG (ALL CUSTOMER TRANSACTIONS)
 - i. View system log
 1. Explanation: Prints a log of all transactions that have occurred on the banking system. The transaction should succeed.
 2. Steps:
 - a. Be logged in as Admin1
 - b. Type “l” (lowercase L) for log and enter
 - c. Observe the system log printed
- g. LIST ACCOUNT NUMBERS, CUSTOMERS, AND BALANCES
 - i. List account information
 1. Explanation: Gets a list of all accounts, their owners, and their balances and prints the list. The transaction should succeed.
 2. Steps:
 - a. Be logged in as Admin1
 - b. Type “i” for account info and enter
 - c. Observe the list of accounts printed
 - ii. List customer information
 1. Explanation: Gets a list of customers and prints the list. The transaction should succeed.
 - a. Be logged in as Admin1
 - b. Type “u” for customer list and enter
 - c. Observe the list of customers printed
- h. SUSPEND ACCOUNT
 - i. Suspend customer account

1. Explanation: Tests suspending a customer account so that customer is unable to login/perform their own transactions. The transaction should succeed.
2. Steps:
 - a. Be logged in as Admin1
 - b. Type “s” to suspend account and enter
 - c. Username Prompt: Type “**Customer2**” and enter
 - d. Observe the “transaction success” message
- ii. Try to suspend admin account
 1. Explanation: Tests trying to suspend an admin account. Admins should not be able to suspend other admins. The transaction should fail.
 2. Steps:
 - a. Be logged in as Admin1
 - b. Type “s” to suspend account and enter
 - c. Username Prompt: Type “**Admin2**” and enter
 - d. Observe the “transaction failure” message
- i. REACTIVATE ACCOUNT
 - i. Reactivate suspended customer account
 1. Explanation: Tests reactivating a customer account that has been suspended. The transaction should succeed.
 2. Steps:
 - a. Be logged in as Admin1
 - b. Type “r” to reactivate account and enter
 - c. Username Prompt: Type “**Customer2**” and enter
 - d. Observe the “transaction success” message
 - ii. Activate already active account
 1. Explanation: Tests activating a customer account that is already active. The transaction should succeed but do nothing.
 2. Steps:
 - a. Be logged in as Admin1
 - b. Type “r” to reactivate account and enter
 - c. Username Prompt: Type “**Customer2**” and enter
 - d. Observe the “transaction success” message
- j. EXIT APPLICATION
 - i. Exit the application
 1. Explanation: Exit the banking system functionality and effectively log the user out.
 2. Steps:
 - a. Be logged in as Admin1
 - b. Type “**exit**” to exit and enter. The application will close and must be restarted to interact further with the banking system.