

ONLINE BANKING SYSTEM

REPORT

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Introduction:

This is an online banking system. Here there are 3 types of users in the bank. Normal users, joint account users and admins. Each has their own access.

Normal users:

These types of users can just control their account. There are some actions these people can do. They are

1. Deposit amount
2. withdraw amount
3. Balance enquiry
4. Password change
5. View details
6. Exit

These are the transactions that these users can do. However there are some restrictions bank prohibits the user to do.

1. Bank min balance is 1000. You can't withdraw money if this condition fails.
2. Bank balance can't be more than 50L.

Maintaining these 2 these users can do anything.

Joint account users:

These people are also like users. It's just that their account can also be controlled by another user.

This is maintained by proper file locking. No two joint account users can't write and read or write at a same time. However they can login and read together i.e., check balance.

Admin:

These people have extra privialges given by the bank. They have the access to

1. Add user
2. Delete user
3. Modify User
4. Get User Details

Code:

There are 3 files server.c, client.c and useful.c.

All the user actions and admin actions and thread handlers are present in useful.c.

Readme to run:

server side

```
gcc useful.c server.c -o server -pthread  
./server
```

client side

```
gcc useful.c client.c -o client  
./client
```

Testing:

These are the following tests that have been done:

1. Add a single-user account and exit. (Admin)
2. View a single-user account and exit. (Admin)
3. Add a joint-user account and exit. (Admin)
4. View a joint-user account and exit. (Admin)
5. Logout and log-back in and exit. (Admin)
6. Delete a single-user account and exit. (Admin)
7. Delete a joint-user account and exit. (Admin)
8. View a deleted account (single and joint) - shows invalid ID. (Admin)
9. Remove a single account and add a joint account containing the ID of the deleted single account (Admin).
10. Perform all 5 functions (Deposit, Withdraw, Balance Inquiry, View Account details, Password Change) and exit. (User)
11. Perform all 5 functions on an added account and exit. (User)
12. Accessing a deleted account - shows invalid ID. (User)
13. Deleting an account being accessed. (Concurrent)
14. Concurrently accessing the same account from two IDs. (Concurrent-User) (Tried all combinations of withdraw-deposit)
15. Trying to delete an account being accessed from more than one ID. (Concurrent)
16. Shutting the server down while users are still online. (Concurrent)
17. Shutting the server down while users are in between the login process.

(Concurrent)

18.Delete all the accounts (except the admin). (Admin)

19.Create accounts having deleted all the accounts.

(Admin)

20.Access accounts having deleted all the accounts.

(Concurrent)