Program 1: Bank app

Due: March 6, 2017

You are tasked with creating a Bank application.

Points applicable throughout the bank app:

- A user can have multiple accounts to manage money.
- User needs an admin’s authorization to deposit money.
- User needs an admin’s authorization to withdraw money if the transaction amount is greater than $1000 from his/her account.
- User should be able to search through the list of users (by name or email address) and add them as friends.
- User can transfer money between his/her accounts and to a friend’s account without permission from an admin.
- An admin has the authorization to approve or decline any pending transactions.

There will be two types of users in the system:

- Admin
- User

Admins

The system should have a preconfigured Admin, which cannot be deleted or modified by other admins.

Any admin user will have the following attributes: email (unique for each admin), name and password.

All admins can perform the following tasks:

- Log in with an email and password
- Edit her/his profile details
- Manage admins
    - Create new admins
    - View the list of all the admins and their profile details (except password)
    - Delete admins (except herself/himself and the preconfigured Admin)
- Manage account
    - Create an account for a user. An account will have the following attributes: Account Number (unique for each account, 9-digit number), status, balance
        - Possible values for the status attribute:
            - Active - all the transaction operations, deposit, withdraw, send and borrow are available.
            - Closed - All the transaction operations are unavailable.
    - View the list of all the accounts. View the balance for the accounts
    - View the details(account number, status, balance) of an account. Also, show the user who own the account.
    - Edit the details of an account
        - Admin can change the status of an account

    - Approve or decline a transaction request
        - Once the transaction is approved, the change should be reflected to the account immediately.
    - View the transaction history of an account
        - a history of the pending transactions that are not canceled by user before approved or declined.
        - a history of the transactions that have been approved and declined.
    - Delete an account from the system
- Manage Users
    - View the list of all the users and their profile details (except password)
    - View the transaction history of a user
        - a history of the pending transactions that did not canceled before approved or declined.
        - a history of the transactions that have been approved and declined.
    - Delete a user

Users

A user will have the following attributes: email (unique for each member), name and password.

Anyone can sign up as a user using their email, name and password. After signup, she/he can do the following tasks:

- Log in with email and password
- Edit her/his profile details
- View the details of his/her accounts
- Request the admin to create bank accounts
- Search other users using email or name.
- Add other users as friend
    - A user can only transfer money to friends.
    - Users who are not friends are not allowed to transfer money between themselves.
- View the list of his friends.
- View the list of transactions with their details. For example, the amount, from which account to which, status, start date and effective date.
- Cancel a transaction request.

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Miscellaneous

Testing

- Thoroughly test one model and one controller. Feel free to use any testing framework.

Deployment

Please ensure that your deployment is always accessible. You can use the following

- Heroku or any similar PaaS (OpenShift etc) with free plans
- Amazon AWS
- NCSU VCL

Bonus (Extra Credit)

You can do any or all of the below for extra credit (each item would be an extra credit item).

- If a user has successfully completed a transaction(it maybe a deposit/withdraw or transfer between friends) the system should send a notification message(email) to them with the details(account numbers, amount and effective timestamp of a transaction of the transaction.
- User can send a borrow money request message to his/her friend. Once the friend approves this request, the transaction should be reflected to an account immediately

Submission

Your submission in Expertiza should consist of the following-

- A link to your deployed application
- A link to a youtube video where you should explain how to verify the functionalities of your application.
- A link to your repository (use github.ncsu.edu to host your repository)
  - Credentials for the preconfigured admin and any other information that reviewers would find useful should be in the README.md file in this repository
  - Some information that reviewers may find useful are:
    - how to test various features (e.g., how to access certain pages, what details to enter in the form etc.)
    - use cases for some of the edge case scenarios (e.g., what will happen if admin tries to delete a user who currently has a transaction not checked by admin.).