**Bank management system**

**一．**Task description

1. Use WPF App (NET Framework) technology to complete the bank management system

2. Microsoft Visual Studio Community 2022 (64-bit)

3. Database: PostgreSql

4.Functional modules: login, account opening, deposit, withdrawal, transfer, loss reporting and other functions

二．Running interface:

1.Login module:

The login interface (Login) provides filtering in the background, if it is the administrator's login account and password, it will jump to the administrator's home page, if it is an ordinary user, it will enter the ordinary user's home page.

A screenshot of a login screen

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2. Administrator Index, which provides user information, bank card information (option switching), and jumps to add users and view logs. In the user management options, the function of modifying user information is provided under the user name, and the information of multiple cards owned by the user can be viewed under the customer card information. In the bank card information management option, you can query the card information, you can also freeze the card, and record the log.

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3. .New user interface

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4. View the bank account

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5. View the log page

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6. Deposit Module (Regular Users)：

Log in to the user, select your bank card number (drop-down box lists accounts that have not been reported lost), enter the amount, and deposit the money into the account (simulated deposit only); and keep logs;

7. The user homepage (CustomerIndex) can make deposits, withdrawals, and transfers

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三．Task detailed requirements

1. Login module:

Enter the user name and password, match, match successfully, jump to different interfaces according to different user types; ordinary users jump to the home page of ordinary users, and administrators jump to the home page of administrators;

2. Account opening module (administrator):

User management module

Display the user list, in the list, by clicking the user name, you can link to the user information editing page; provide a link, can link to view all the bank card information of the user, and in the user's bank card list page, provide account opening (new bank card), loss reporting (logging) and other functions.

3. Card List (Admin):

List all card information

Including card number, username, ID number, card opening date, and whether it is frozen

And can use the ID number, user name, bank card number for retrieval function;

Provide loss reporting function (logging);

4. Log List (Admin)

5. Deposit module (ordinary users):

Log in to the user, select your bank card number (drop-down box lists accounts that have not been reported lost), enter the amount, and deposit the money into the account (simulated deposit only); and keep logs;

6. Withdrawal module (ordinary users):

Log in to the user, select one of their bank card numbers (drop-down box lists accounts that have not been reported lost), enter the withdrawal amount, before withdrawal, use AJAX to determine whether there is enough money in the account; if it is enough, withdraw money (and record the log), otherwise make corresponding prompts;

7. Transfer module (ordinary users):

Log in to the user, select one of their bank card numbers (drop-down box lists accounts that have not been reported lost), enter the transfer amount and the other party's account number, use AJAX to determine whether there is enough money in the account and whether the other party's account is not reported as lost;

四．Database design

|  |  |  |
| --- | --- | --- |
| User table | | |
| Field | Description | Notes |
| ID | Primary key, autoincrement |  |
| User name |  |  |
| User type | Used to distinguish between bank administrators and ordinary users |  |
| password |  |  |
| gender |  |  |
| ID number |  |  |
| birthday |  |  |
| Mobile phone number |  |  |

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|  |  |  |
| --- | --- | --- |
| Bank account form | | |
| field | Description | Notes |
| ID | Primary key, autoincrement |  |
| User ID | Foreign key, the ID in the associated user table |  |
| Card number |  |  |
| Bank card password |  |  |
| balance |  |  |
| Whether to report the loss |  |  |
| Card opening date |  |  |

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|  |  |  |
| --- | --- | --- |
| Operational log tables | | |
| field | Description | Notes |
| ID | Primary key, autoincrement |  |
| Log type | Deposits, withdrawals, transfers, loss reporting |  |
| Record the user ID | Foreign key, associated user ID |  |
| User name |  |  |
| Operation details |  | For example, when making a deposit, record: Deposit:8000.00 |
| Date of operation |  |  |
| IP address |  |  |

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