README:

This ATM design project is for <u>Zewei</u> Chen's <u>Cisco</u> interview.

A. Classes:

1. Bank: The centralized system, which allows a client to open an account and doing business with this bank. It stores all the client's information in its database. It also knows if a client has logged into any ATM, to prevent this account gets accessed from multiple ATMs simultaneously. Finally, it validates account credentials when the bank's ATMs make any requests.

2. ATM: One ATM can only work with one bank. It requires a client to login before making any functional requests, and logout the ATM when finishes. ATM collects user data, then sends request to bank system, it will either receive a success confirmation or exception message from bank system.

3. Account: Stores a client's information. Updates the balance property when making a deposit or withdraw.

4. Client: Simulates a user, which has basic information, such as Social Security Number and Name.

B. UML:

<<interface>> IATM

+ String login(long ssn, String password);
+ String logout();
+ String deposit(double amount);
+ String withdraw(double amount);
+ String getBalance();
+ String getHistory();

<<interface>> IBank

+ String openAccount(long ssn, String userName, String password);
+ boolean validateCredential(long ssn, String password);
+ String deposit(long ssn, String password, double amount);
+ String withdraw(long ssn, String password, double amount);
+ double getBalance(long ssn, String password);
+ Map<String, String> getHistory(long ssn, String password);
+ boolean isInCurrentClients(long ssn);
+ void addToCurrentClients(long ssn);
+ void removeFromCurrentClients(long ssn);

ATM

- Bank bank;
- long currentClientId;
- String currentClientPassword

- void isLoggedIn();

Operates   1   0..*   Owns

<<interface>> IClient

+ String getName();
+ long getSSN();

Client

- final long ssn;
- String name;

1   0..*   Woks   0..*

Bank

- Map<Long, Account> db;
- Set<Long> currentClients;
- String errorMessage

1   1

Account

- final long ssn;
- String userName;
- String password;
- double balance;
- Map<String, String> history

0..1   Owns   1   0..*   Stores

<<interface>> IAccount

+ long getSSN();
+ String getUserName();
+ String getPassword();
+ double getBalance();
+ Map<String, String> getHistory();
+ String deposit(double amount);
+ String withdraw(double amount);