Ain Shams University
Faculty of Engineering
Computers & Systems Engineering Department

Data Structure CSE323

Banking System Software

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Abstract

This document introduces a software designing process for a piece of software intended to be use as a Banking system in real life.

This software is developed by group of computer and systems engineering students at faculty of engineering Ain Shams University under supervision of CSE323 Data Structure teaching stuff.

A Quick view on the system and its features will be introduced in the following few pages in this document.

1- Introduction

- Problem:
  - every day lots of client goes to the bank to do money transaction, they waste many time either waiting for their turn in queue or waiting for extracting their information from bank records
  - bankers work hard to search the bank records and there is a lot of mistakes
  - too many employees in the bank because the system is old and need much workers
  - high average waiting time for each client
  - no client satisfaction about the bank routine

- solution
  - create new banking system using computer software
  - replace the old bank records with the new software which has fast search Tanique
  - the new software will include all data about client's identity, name, age and history of all his transaction
  - this new software will facilitate money transactions on both clients and bankers
  - reduces the number of employees in the bank because the new system is fast and easy to learn
  - reduce the average waiting time for each client which enhance client satisfaction about the bank and make clients happy

2- General description

- This Banking system is going to deal with money transactions, withdrawal, deposit, paying bills and bank statements, Also, dealing with bankers, creating history of transactions for each client. On the other hand, system can deal with bank clients holding their information and previous transactions they done, so as to ease the process of depositing and withdrawal of money for each client, or to facilitate the process of paying clients pills for clients dealing with the bank.

- General capabilities:
  - The system will have two main courses of actions and their relative functionalities according to these interaction types:

Client:

The system will be able add new Client each with a unique ID, name, age, and contact number. The system will have a compiled history for each client with their latest transaction, as well as a history of his balance. The system will have the algorithm accumulate paying client's pills.

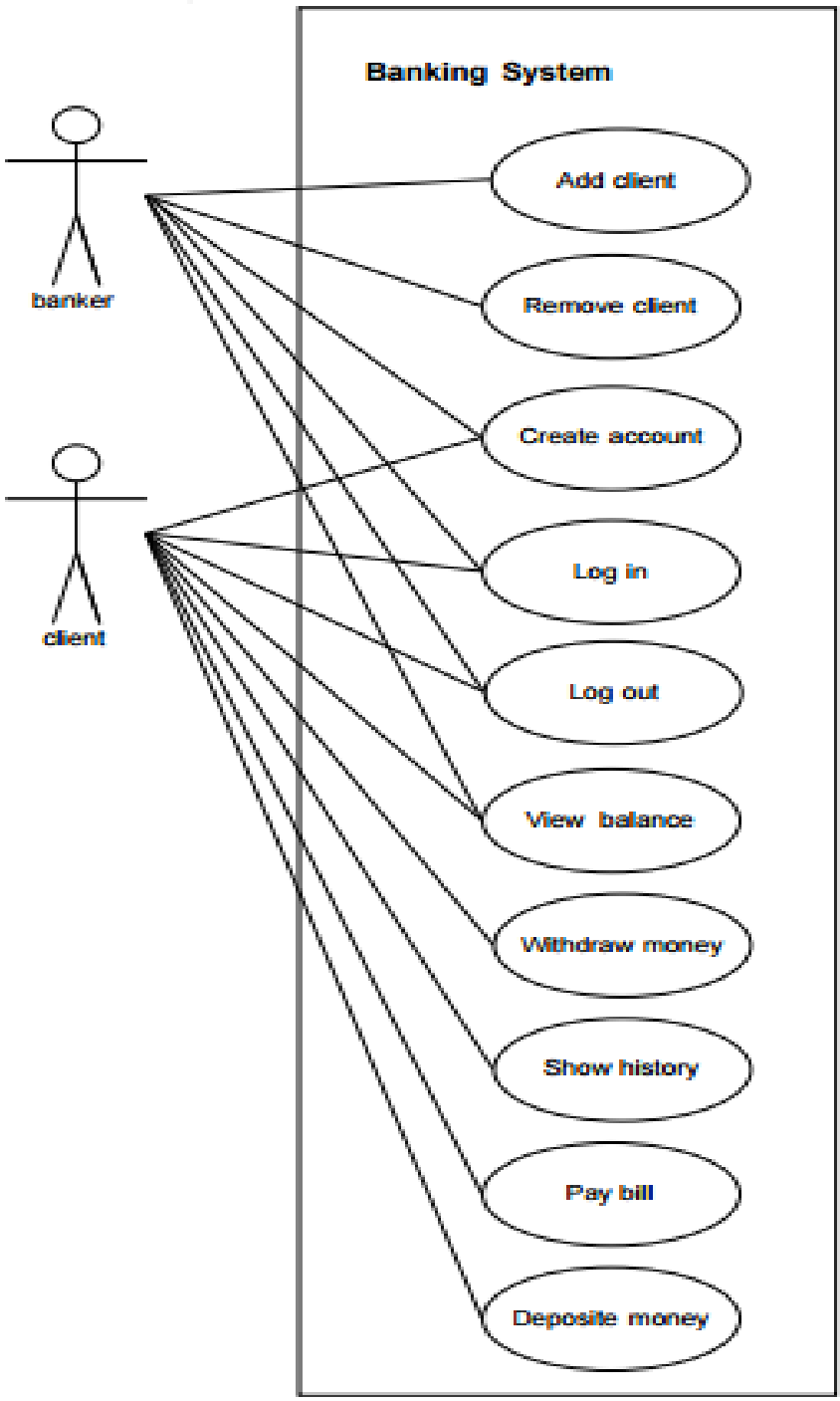
Banker:

The system will a have an interface for both banker and clients with client history including his name, company, and balance. The system will record every transaction, the amount of withdrawal or deposited by the client, payed pills history and the corresponding paid amount.

3- Project main flow

- Data structure used:
  - We are going to use Tree data structure to be as the main structure of the system
  - where each node of the tree will contain the client ID to ease the search process for the client
  - Also, each tree node will contain instance of class client
  - Class client will contain data of the client (client's name, age, ID, balance, contact number …)
  - Class client will contain linked list data structure
  - The linked list data structure will contain all data about client's (deposit, withdrawal, pills) all client's money transaction will be saved in this list in ascending order with time of each transaction
  - The linked list will be used to view or print all client's money transactions

- Use case


Banking System
banker
client
Add client
Remove client
Create account
Log in
Log out
View balance
Withdraw money
Show history
Pay bill
Deposite money