

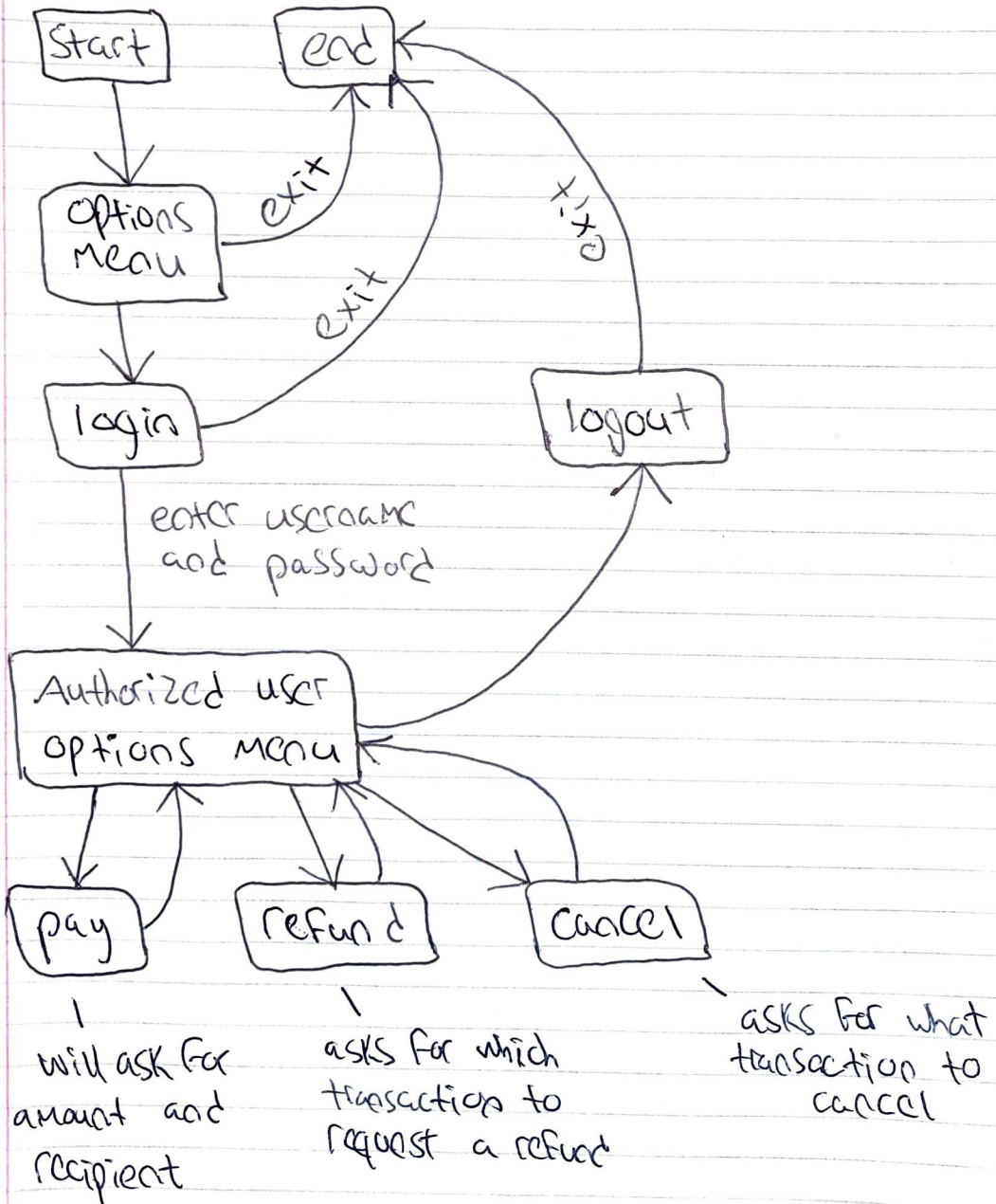
Project Description

This project is a digital wallet system which allows users, once they have been registered into the system as a member with a login (username and password), to have their own digital bank account with some amount of money in it. This money can be added to their digital wallet from some payment method such as a credit card, debit card or bank account. They can also send and receive payments to other members of the system, request payments, cancel payments so long as they have not been accepted by the recipient at the other end yet (this means they are still pending), and even request refunds from someone they have made a payment to in the past so long as this payment is fully completed and not pending. This system should also be implemented in such a way that each member is assured that their money is kept safe under the supervision of a trusted third party and all transactions that a member can do under this system will go through this third party.

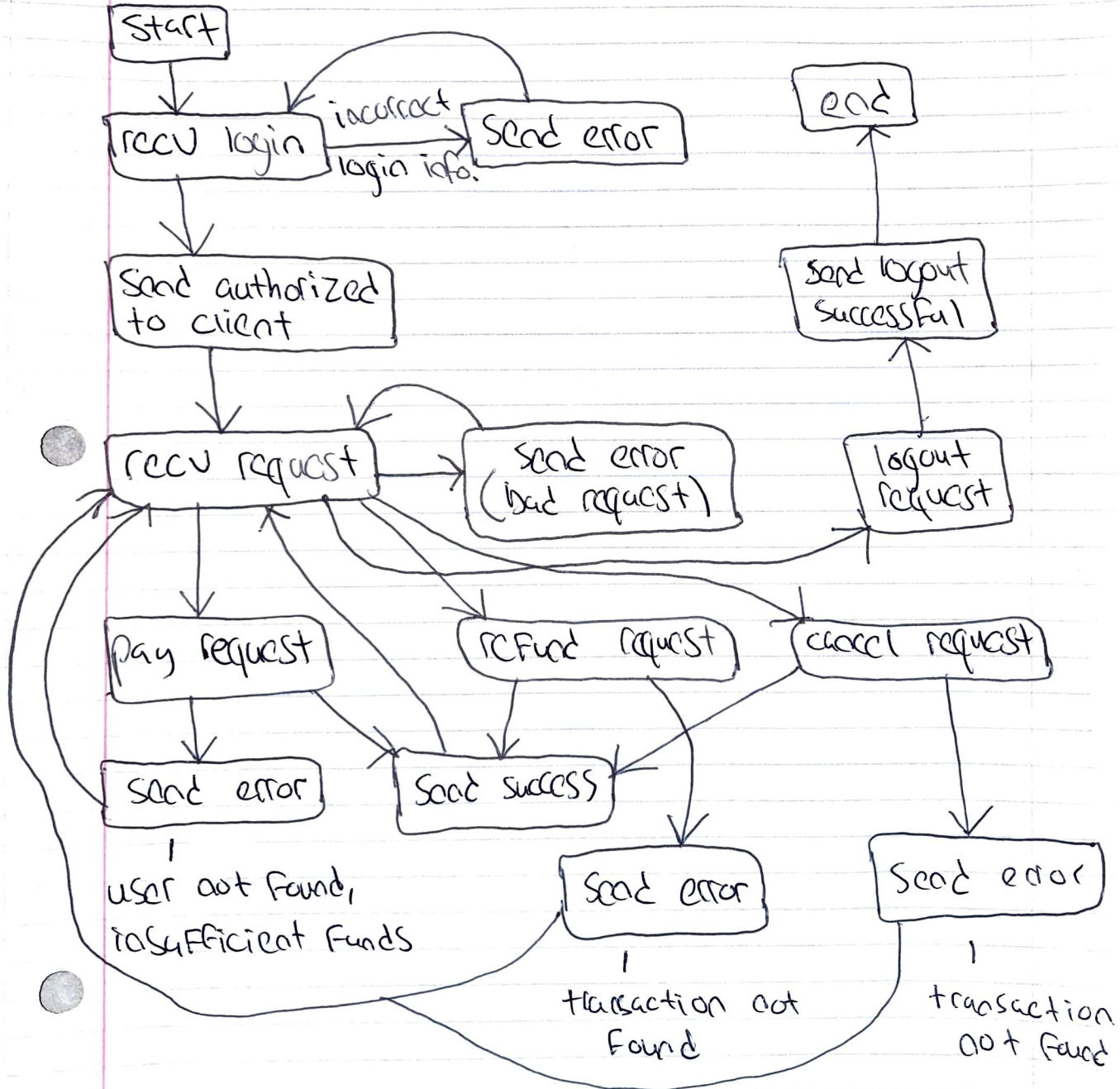
General Architecture

The digital wallet system works by having a centralized server which clients communicate with rather than each other directly. The server keeps a record of all members and their respective username and password for logging in to the system, as well as a ledger of all past payments for verifying refund requests (you cannot request a refund, for example, for an amount that you have not paid to someone in the past; this is simply a payment request and not a refund request). For user convenience, the server should also keep a record of payment information so that a member can quickly add funds to their digital wallet without having to type their entire credit card number or bank routing number in every time (though this information should be encrypted for safety). Every operation that a client can do goes through the server, such as with becoming a member; the server verifies that a username someone is trying to register under is not taken, and if successful the user and their login information is added to a file or database. Similarly, for something like making a payment, it is the server which subtracts funds from one user's wallet and adds them to another user's wallet. This is how we ensure that each member can trust the digital wallet system: so long as they trust the server to be a third party middleman for all transactions, they can trust the system as a whole.

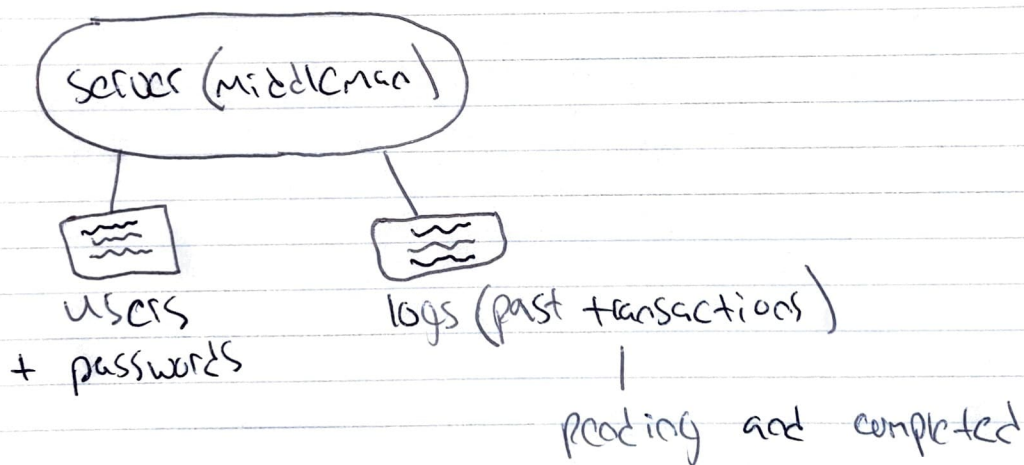
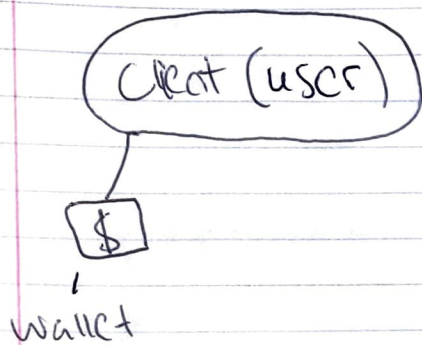
Client Statechart



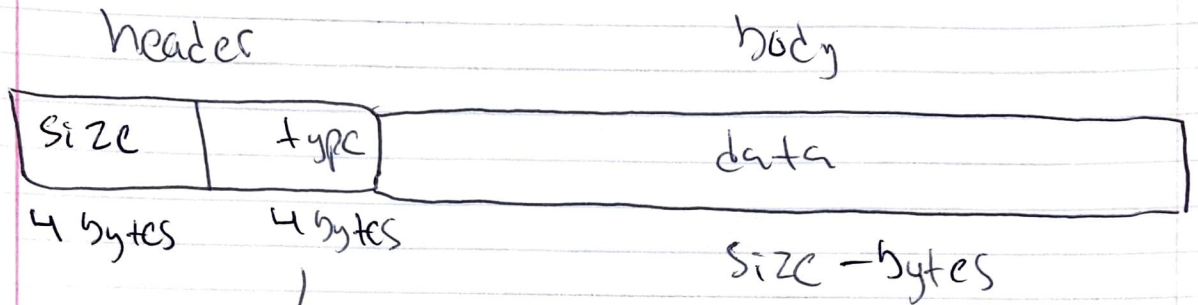
Server Statechart



data models



message design



/

4 character
or less string

Format: Key = value
Separated by -

ex) PAY = pay request
REFU = refund request
CANC = cancel request
LOGO = logout request

ex) amount = 50 -
recipient = Ted

ex) transactionID = 420

Storyboard

