



LenDen v2

CG32 - Group 9

Members :-

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INTRODUCTION

- Handling money and keeping record of transactions - main problem among students and working class
- Solution - Simple ledger application
- Helpful for people especially students who've numerous small transactions
- Keeping record of small transactions between roommates and friends made easier
- No more worrying about splitting bills before every outing
- Now the large number of small transactions won't exhaust allowances

PROBLEMS WITH CURRENT LEDGER APPS

Each ledger app today has one of following problems -

- No chatting feature present
- Sturdy handling of group expenses
- Unavailability on both web and mobile platform

Solution to each of the above problems is present in our application through features like chatting (extended even to groups), simple and easy to understand UI and available both as a website and a mobile application.

FUNCTIONAL REQUIREMENTS

- User authentication at login and creating profile
- Add credit/debit entry with notes
- Edit entries
- Customize profile
- Simple UI, easy navigation and management
- Complete compilation of lent/owed amount history
- Making groups and ease of splitting bill among group members
- Chat with individual or in group to resolve disputes on certain payments

NON-FUNCTIONAL REQUIREMENTS

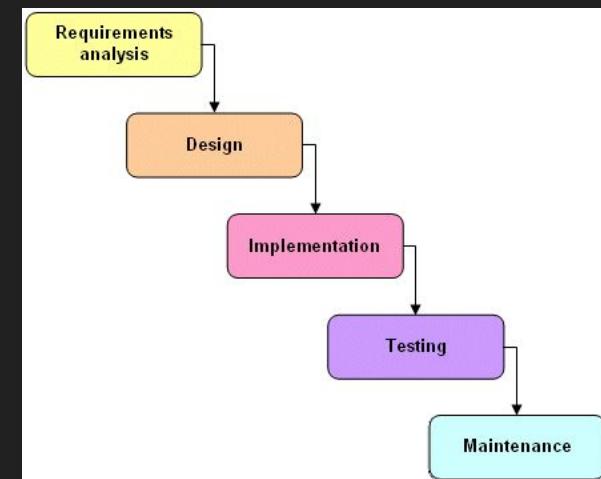
- Provide security of user data
- 24x7 access to the application
- User-friendly and efficient UI to boost user performance
- Flexible architecture for future integrations

Model of Our Project : Waterfall Model

The waterfall Model illustrates the software development process in an exceedingly linear sequential flow. The major reason why we elect to travel ahead with this model was because it allows for apportionment and control. By following this model, we could schedule all our work beforehand and that we were able to set deadlines for every stage of development and also the product proceeded through the event process model phases one by one.

Other Benefits of Waterfall model:

- Planning resources for Waterfall is generally easier as you know exactly when everything will start and end
- Ideal for small projects, where the speed of delivery is not of utmost importance
- Situations where similar projects will be carried out in the future, allowing the project plan to be reused, making use of the heavy documentation that was drawn up previously.



IMPLEMENTATION

We documented the SRS document of our project which included the initial requirements which modified a bit as we progressed over developing our product based on the constraints.

Now, we come to the 2nd step of the waterfall model, which is system designing. Here we made the UML ER diagram/ Relational Schema followed by the Data Flow Diagrams up to Level 2 and also the Use case diagram. We used Mongo DB as the database for our project. Mongo DB is a document oriented NO SQL database. The advantage of Document oriented over relation type is the columns can be changed as an when required for each case as opposed to the same column name for all the rows

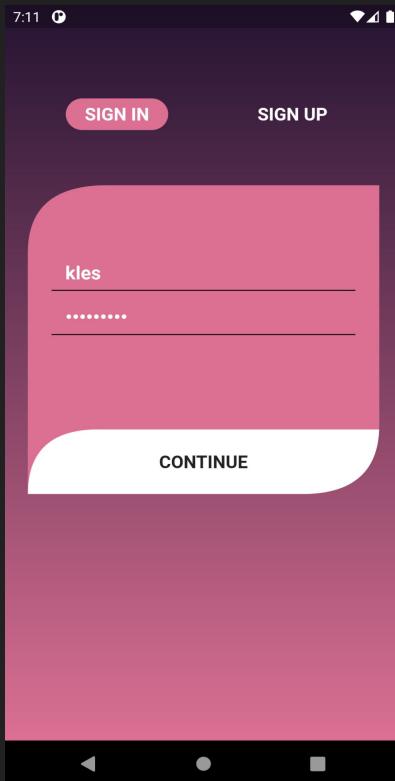
- For the Mobile client application, the runtime environment is Dart VM which uses dart language and flutter is used for mobile UI.
- For the Web client application, ReactJS framework is used which uses the context API to share data that can be considered “global” for a tree of React Components.
- For the common server for both mobile and web client, Flask framework in python is used to serve the APIs to the clients.

Now, we build the APIs according to our functional requirements and tested the APIs. Simultaneously, we worked over both mobile and web frontend to synchronize the progress with the server part.

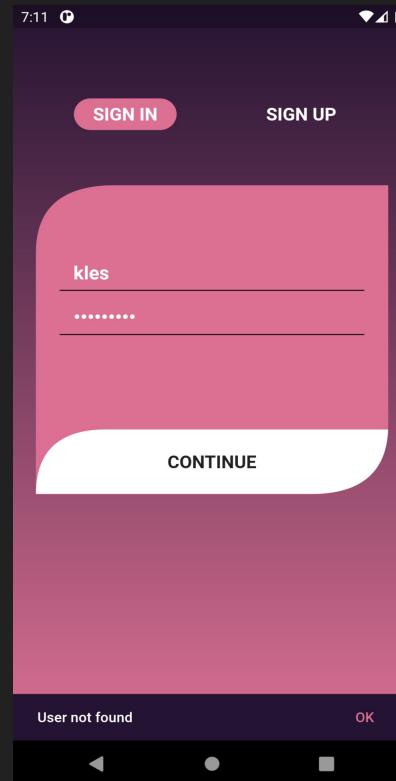
Finally, at the testing stage of waterfall model, we used unit testing to test the APIs to test that all the APIs are responding in the correct way for corner cases.

Appendix: Mobile Client Screenshots

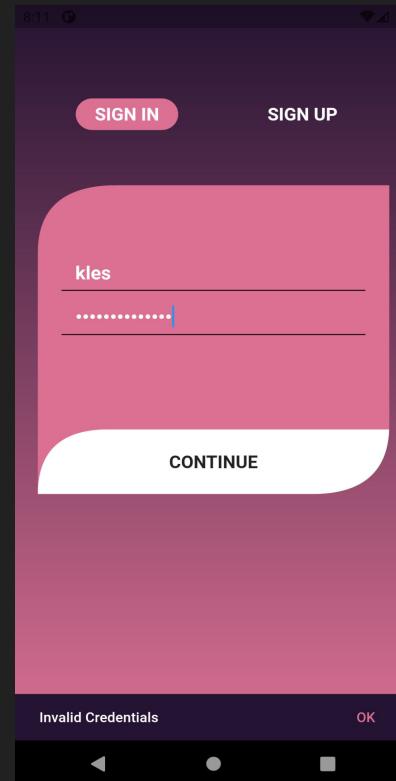
User input his credentials

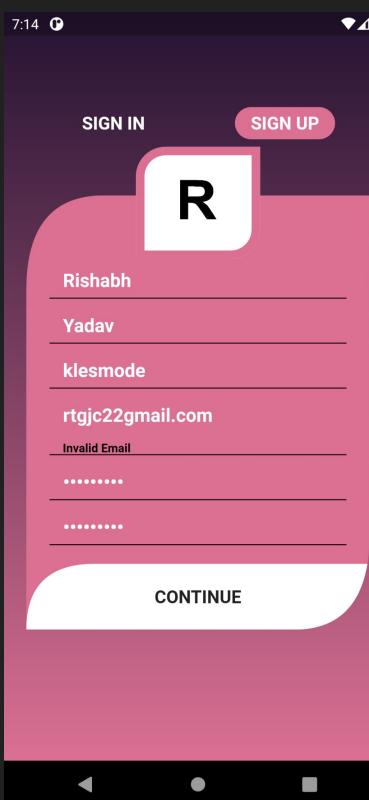
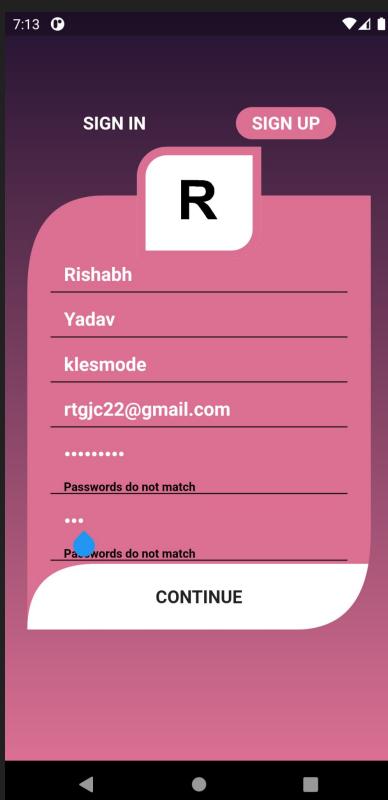
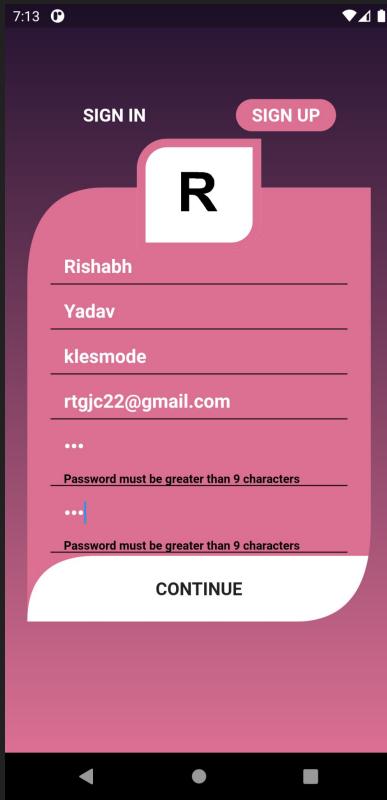


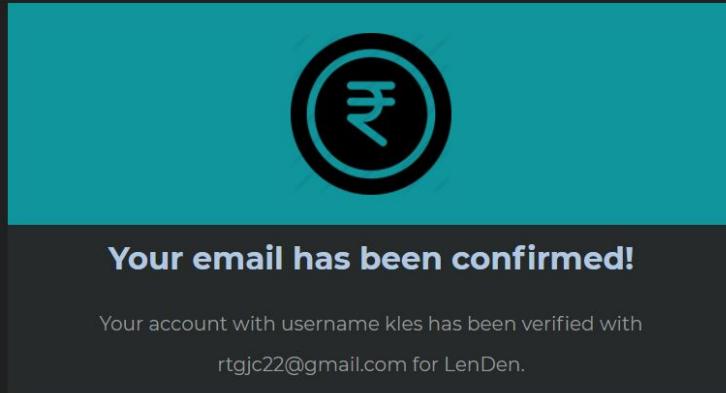
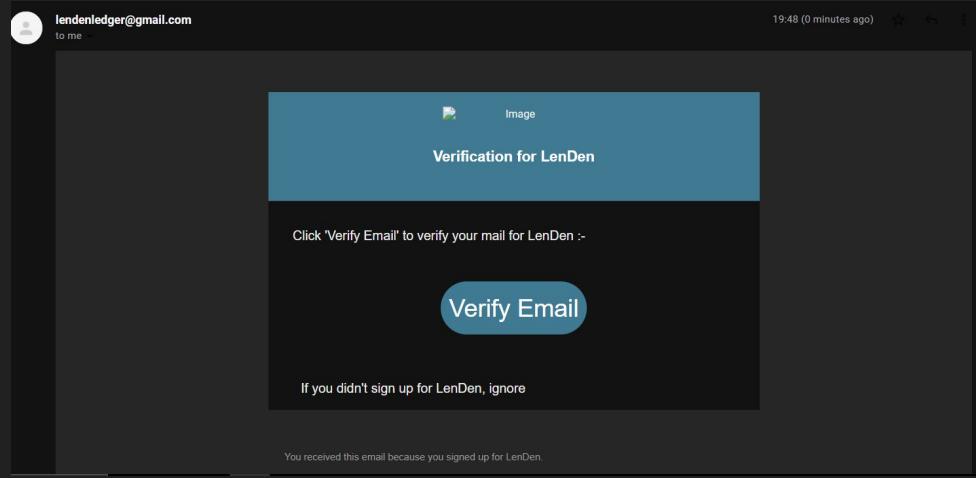
If not signed up yet

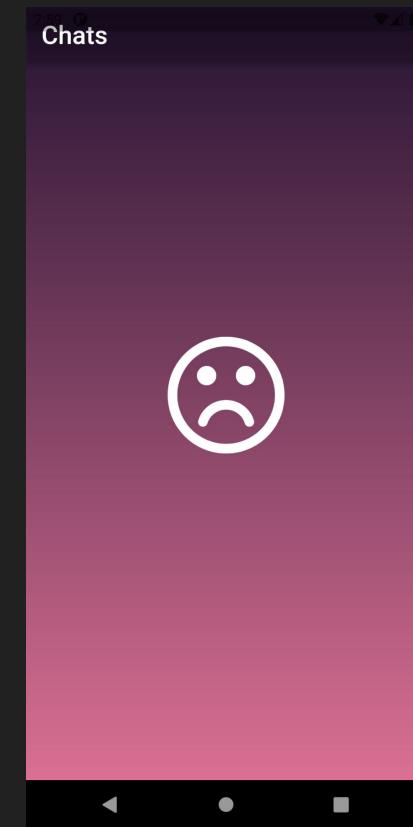
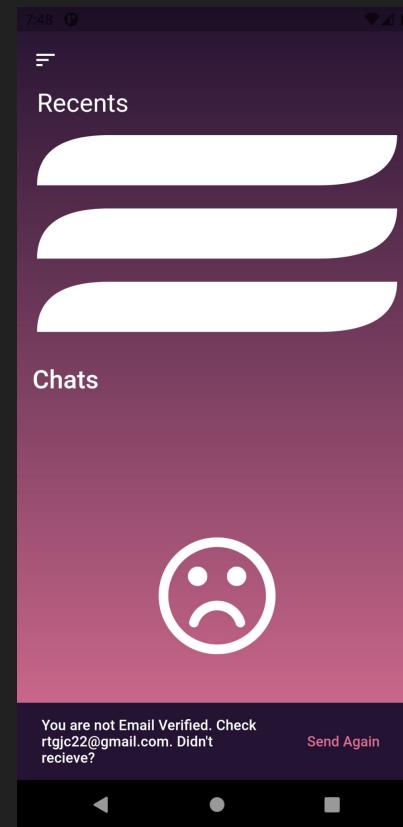
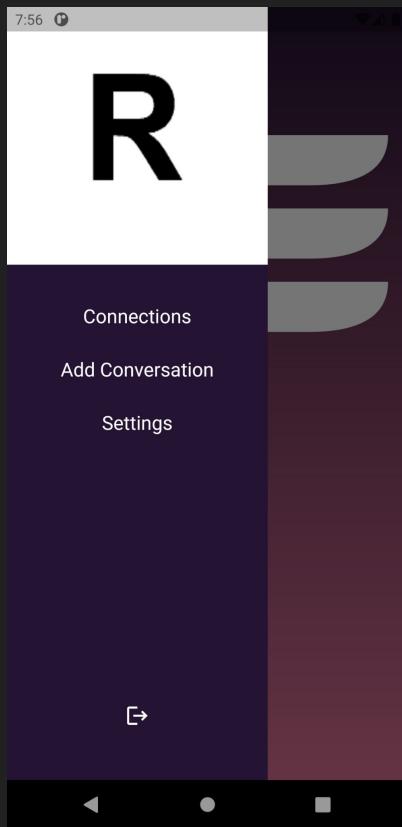
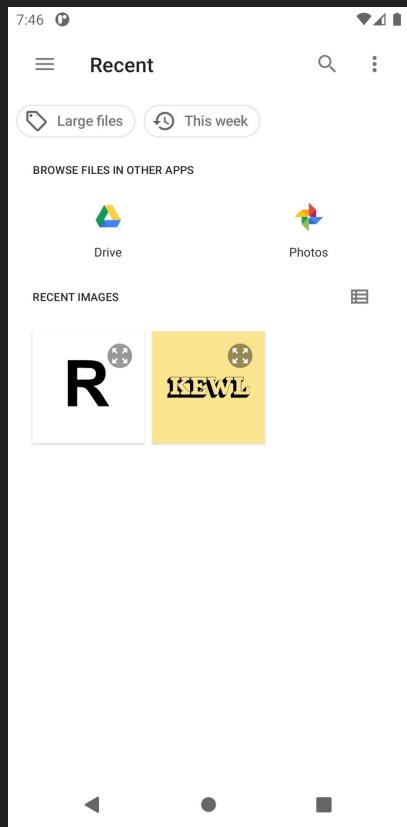


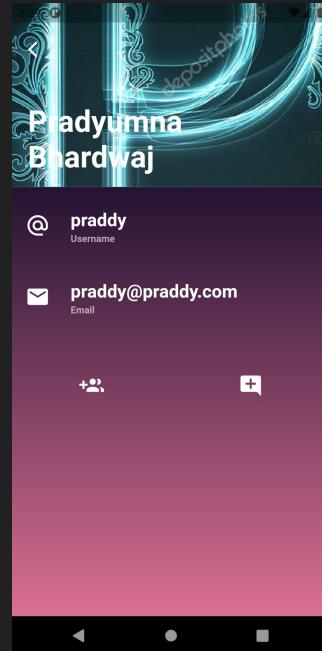
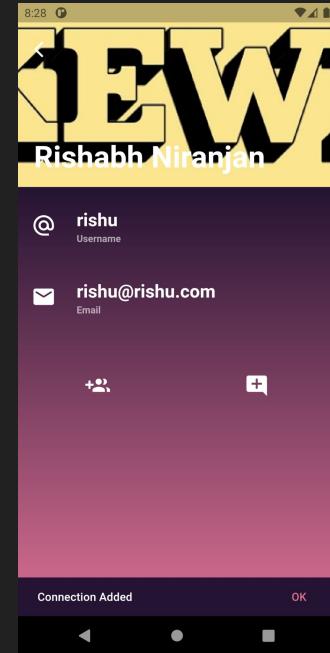
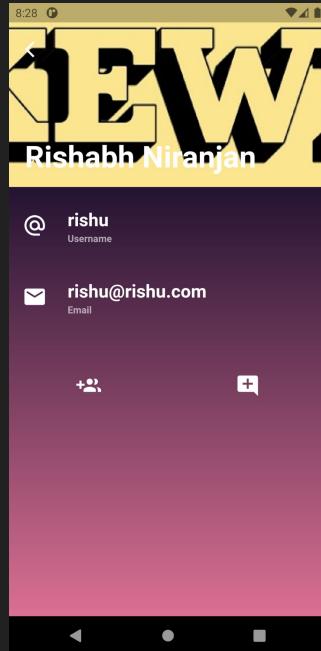
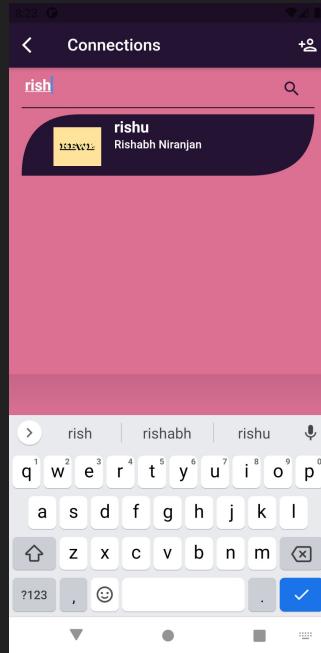
Wrong credentials

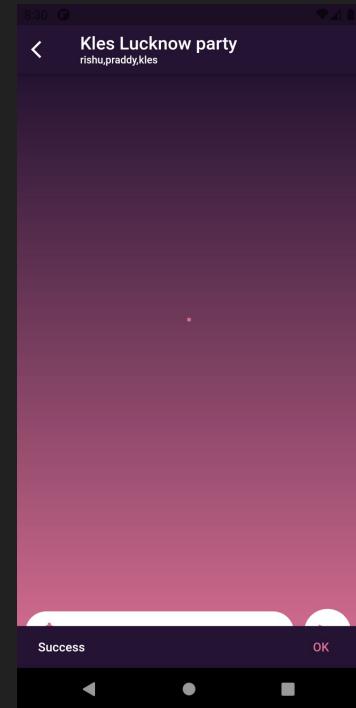
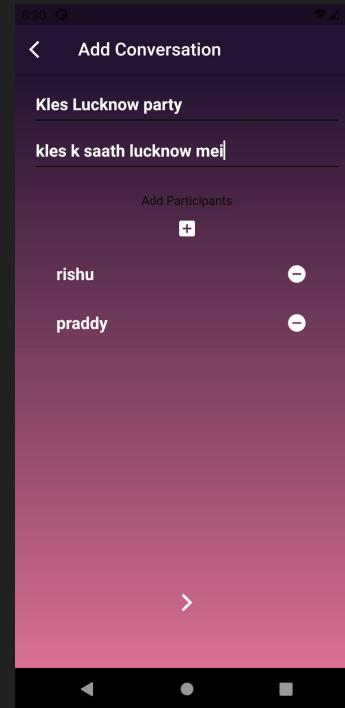
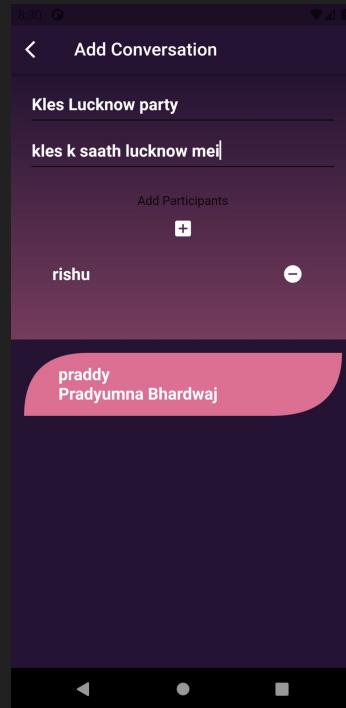


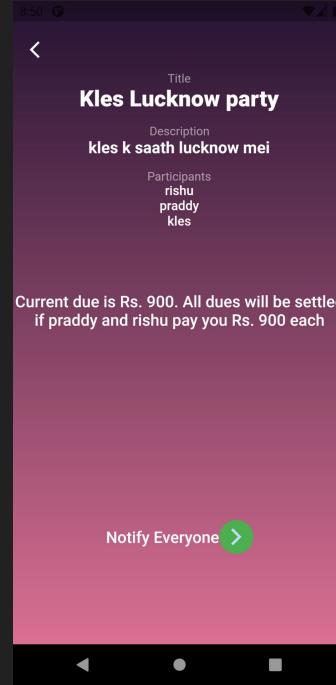
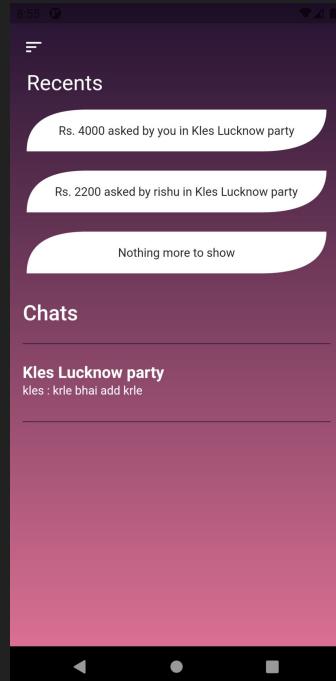




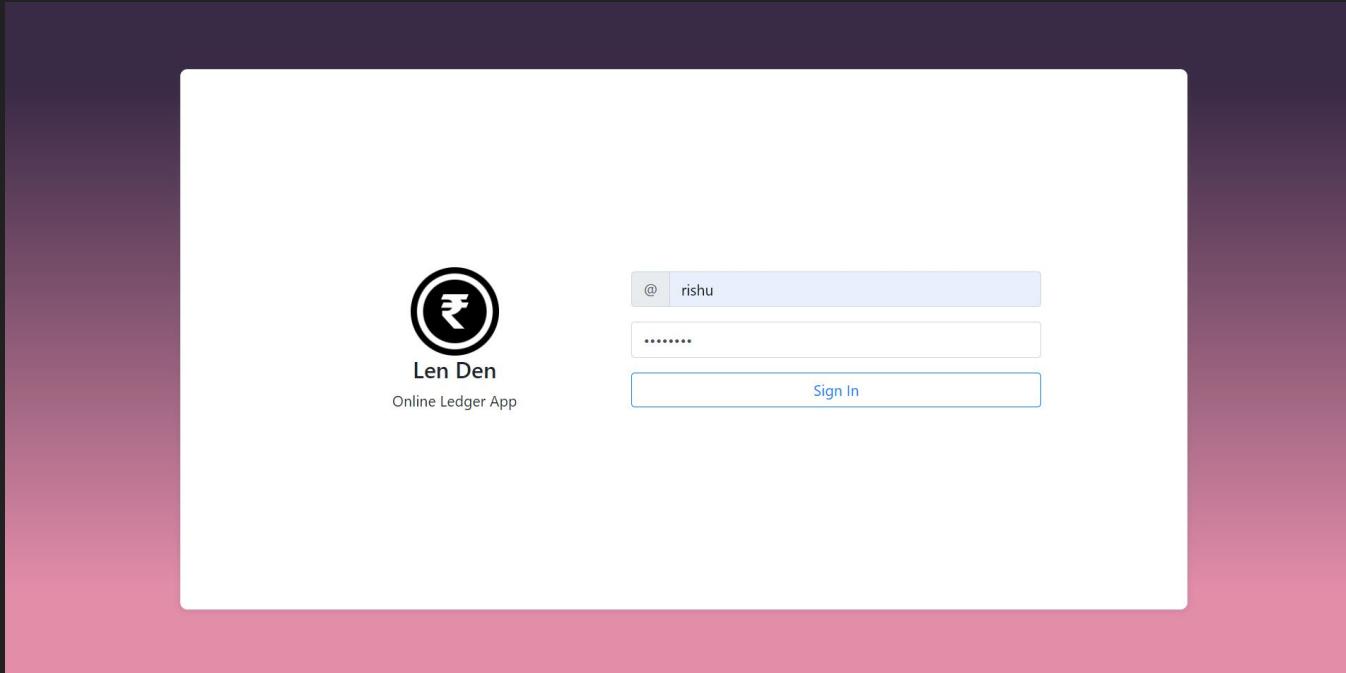


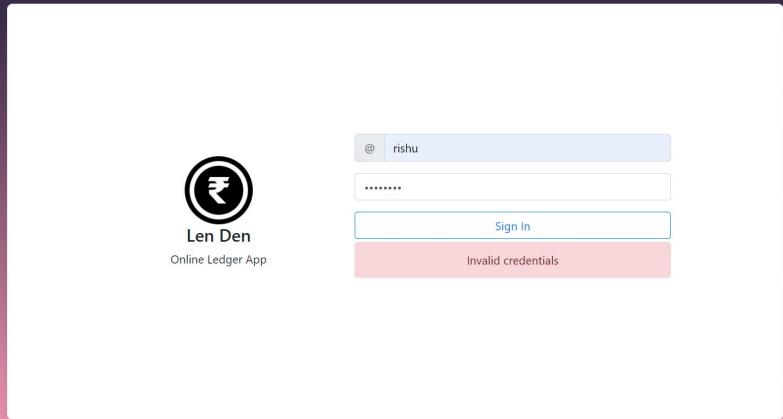






Appendix: Web Client Screenshots





The home screen of the Len Den app. It shows a list of recent conversations:

- Pd++ rishu FDB Len: ₹ 750.00 ~rishu
- KI3s rishu GHY Len: ₹ 349.00 ~rishu
- Cake bill (trio) ~praddy No Dues

In the center is a graphic of a calculator and a notepad with the text "Select a conversation".

The profile screen for Rishabh Niranjan. It shows the same list of conversations as the home screen. On the right side, there is a "Sign Out" button.



Rishabh Nirjanan



Pd++ rishu FDB
Len: ₹ 750.00

~rishu

KI3s rishu GHY
Len: ₹ 349.00

~rishu

Cake bill (trio)
No Dues

~praddy

₹ 1000

~ praddy

04/14/2021, 10:02:25 PM

Pd++ rishu FDB



When will you return this ?

~ rishu

04/14/2021, 10:02:34 PM

In college. 😊

~ praddy

04/14/2021, 10:03:55 PM

₹ 250

~ rishu

04/15/2021, 12:57:05 PM

Recharge amount

~ rishu

04/15/2021, 12:57:21 PM

Type a message

Send

⬇️

⬆️



Pradyumna



Pd++ rishu FDB
Den: ₹ 750.00

~rishu

Cake bill (trio)
No Dues

~praddy

Yado Lucknow shopping
Len: ₹ 320.00

~kles

Pd++ rishu FDB



₹ 1000

~ praddy

04/14/2021, 10:02:25 PM

When will you return this ?

~ rishu

04/14/2021, 10:02:34 PM

In college. 😊

~ praddy

04/14/2021, 10:03:55 PM

₹ 250

~ rishu

04/15/2021, 12:57:05 PM

Recharge amount

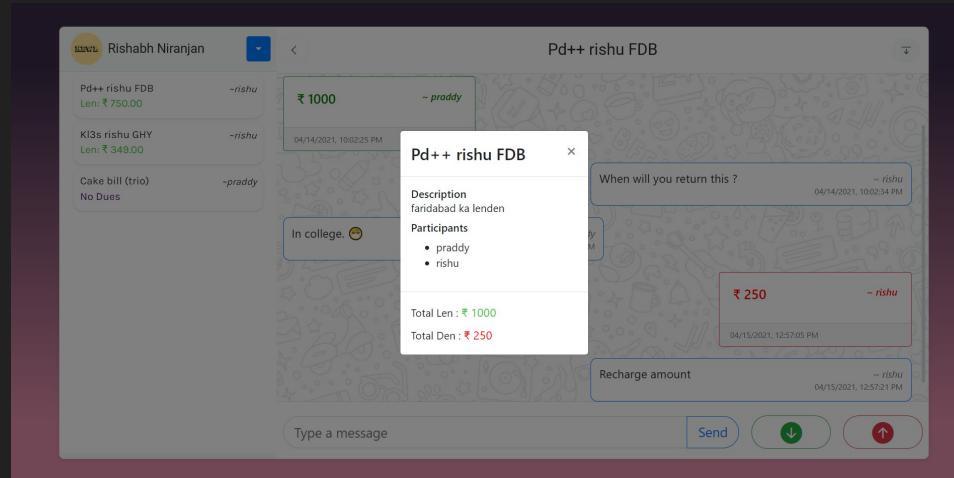
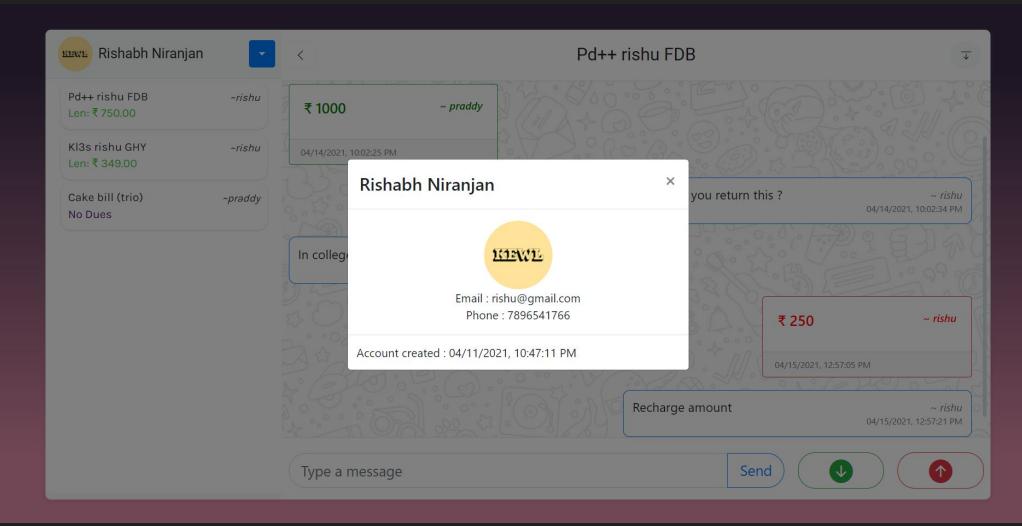
~ rishu

04/15/2021, 12:57:21 PM

Type a message

Send







Rishabh Nirajan



Pd++ rishu FDB
Len: ₹ 750.00

~rishu

KI3s rishu GHY
Len: ₹ 349.00

~rishu

Cake bill (trio)
No Dues

~praddy

Cake bill (trio)



You both have to return 500 for the cake
contri.

~praddy

04/14/2021, 10:12:51 PM

₹ 500

~praddy

04/14/2021, 10:12:57 PM

₹ 250

~rishu

04/14/2021, 10:13:08 PM

₹ 250

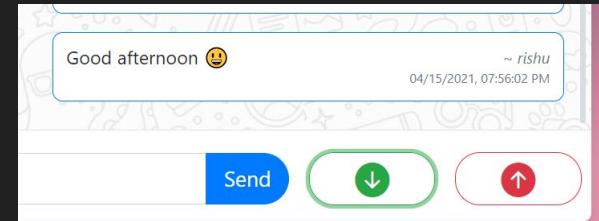
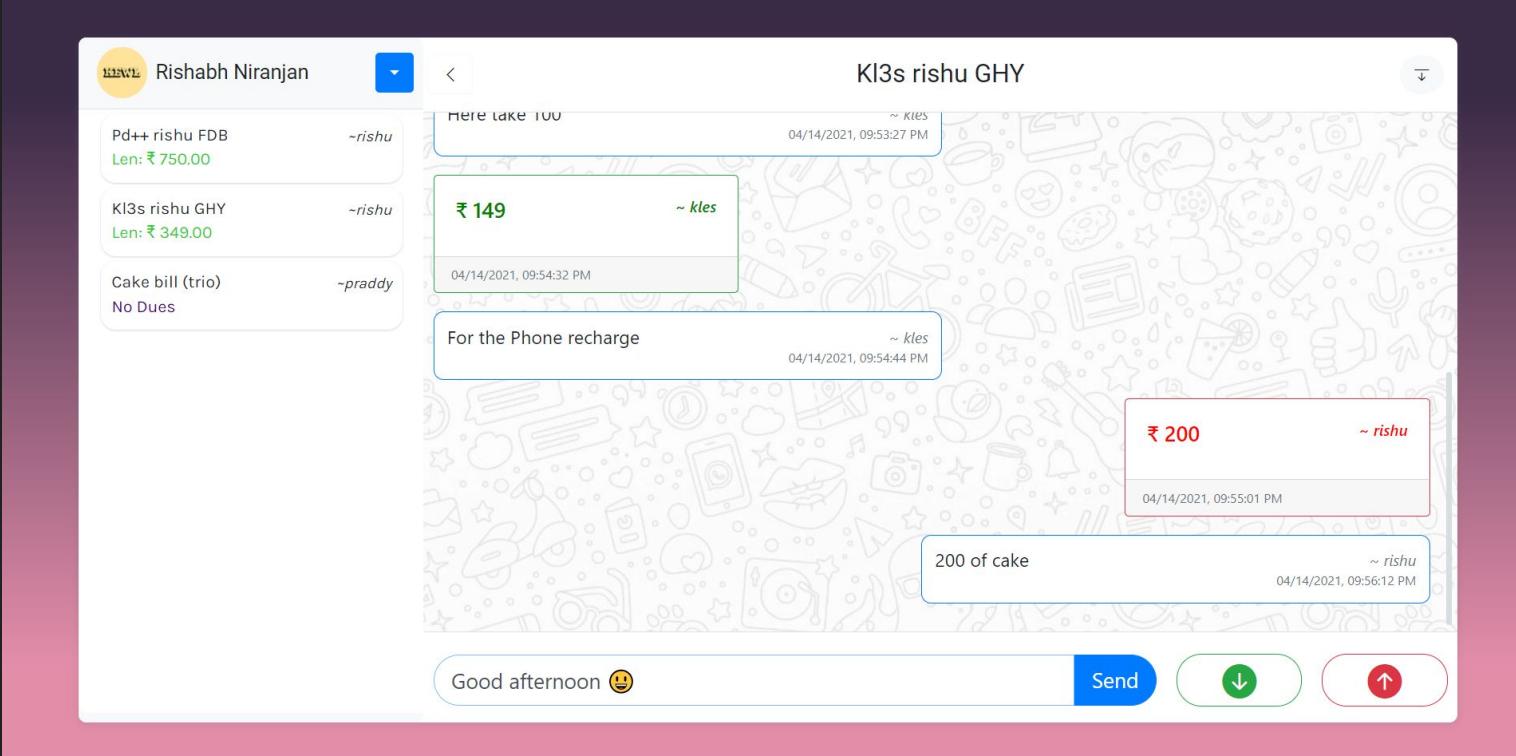
~kles

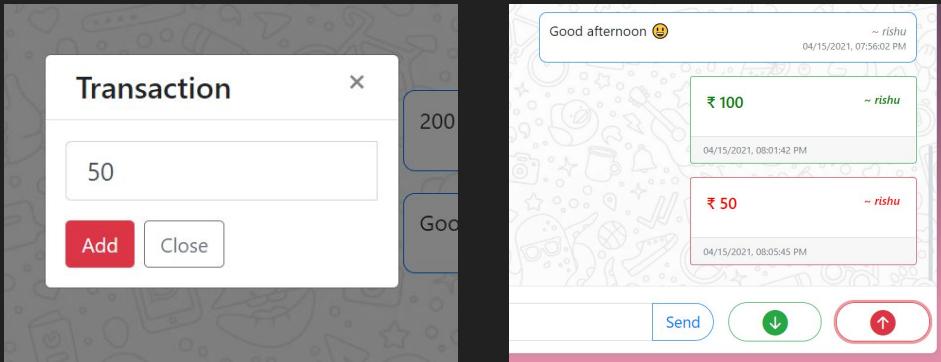
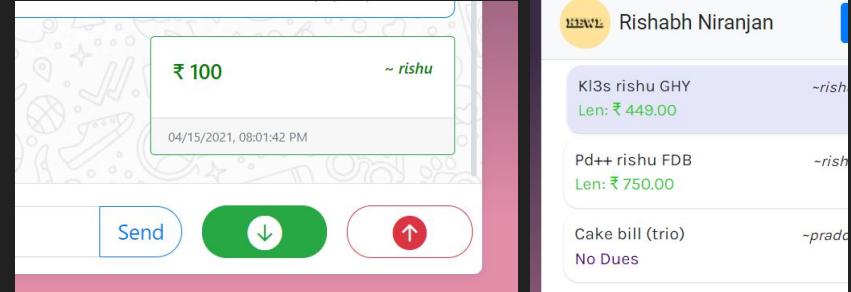
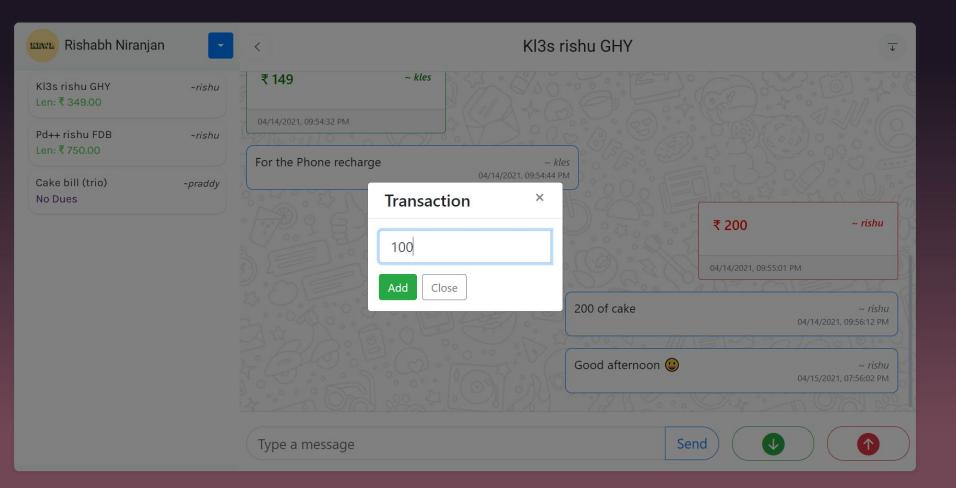
04/14/2021, 10:13:20 PM

Type a message

Send







Thank
You

