SI669 Final Project Proposal

Chongdan Pan (pandapcd)
Yixin Zheng (yixinzh)
Chenyun Tao (cyuntao)

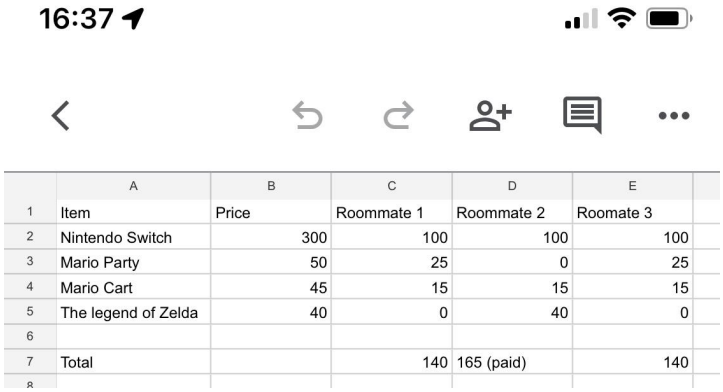
Target audience and value proposition

We know that keeping a common account book among different people is complicated, but it doesn't have to be. Our project makes it simpler than ever for users to split bills as well as control their own account. In our accounting application, users can record shared expenditure, and make payments individually based on the fair value calculated by the application.

Our targeted user can be anyone who will split a bill with others. When roommates are buying different goods from the grocery, it usually takes a long time to figure out what each individual needs to pay for. With our application, they just need to input the buyer of the item with its price, and in the end the price will be calculated automatically. For now, there are many accounting software, but no one supports the function of splitting a bill. Similar to google shared drive, our application is like a shared account.

Inspiration

With the development of cloud technology, much information can be stored in a cloud database, and we're making more sharing economic behaviors. For example, roommates may buy a Nintendo Switch and games cartridges together. However, it's bothersome for them to split the bills because each individual may just want to pay for the game that he or she plays. Usually, we will save the information about price and players of the game in Excel or a google sheet to record how much charge is left.



	A	B	C	D	E
1	Item	Price	Roommate 1	Roommate 2	Roomate 3
2	Nintendo Switch	300	100	100	100
3	Mario Party	50	25	0	25
4	Mario Cart	45	15	15	15
5	The legend of Zelda	40	0	40	0
6					
7	Total		140	165 (paid)	140

Figure 1: Google Sheet

This is a bit inconvenient because usually we don't calculate how much each individual should pay when we're going to buy them excitedly. It's troublesome to calculate the bills afterwards as well. So we'd like to provide a more user-friendly interface and automatically complete the calculations for users.

On the other hand, thanks to the powerful cell phone's camera, we don't even need to input the price and items. By pointing a cell phone to the invoice, it can automatically parse the information about the item and price through scanning. It'll be efficient to corporate this feature in our application.

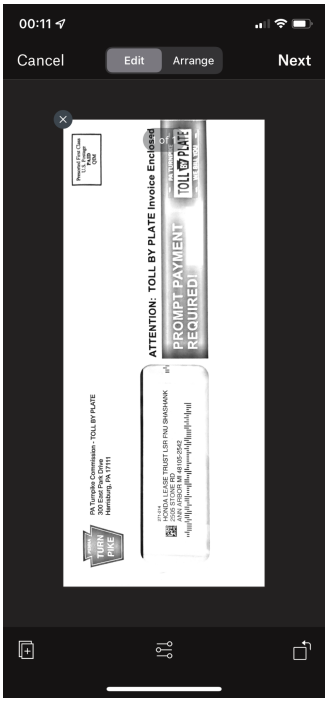


Figure 2: Dropbox Scanner

In addition, since smartphones have already been used for paying like a credit card, why not take the advantages? Then with our application, the users just need to activate Google Pay or Apple Pay instead of opening up paypal or bank software and transferring the correct amount of money to each receiver.

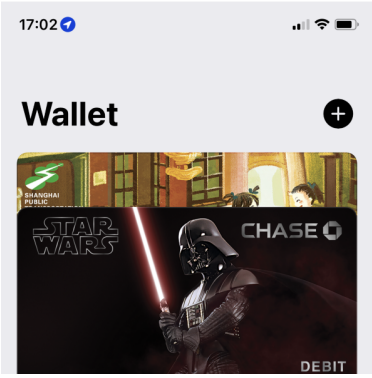


Figure 3: Apple Pay

Key features

- **Bill Splitting**

  Bill splitting is the key feature of the application, and it's what makes it different from our competitors. Users can create a payment by inputting the information about the item and who he or she wants to split the bill with. The user can also input the information for others as well. After everyone has accepted the item and input the total amount or proportion that he or she wants to pay, the payment will be stored and the buyer will get an amount that they need to pay. If there are multiple payments, the user can integrate them together so that he or she just needs to make the payment once.

- **Invoice Scanning**

  Sometimes it's redundant to input the items one by one when everyone has already agreed on what the percentage of the total amount they're going to pay. In this scenario, the creator can create payment for multiple items by scanning an invoice.

- **Payment Integration**

  For now, our application can only calculate the amount that everyone needs to pay based on the input, but it'll be more powerful if they can directly make payments through the application. Since there are already many payment applications supported by smartphones, our application can integrate them well so that it's safer, more reliable and easier to use.

- **Cloud Storage**

  There is no doubt that the data needs to be stored persistently, because the information needs to be shared among multiple users. What's more, cloud storage can be used for more functions such as account analysis.

Sketches

- **Event list Sheet**

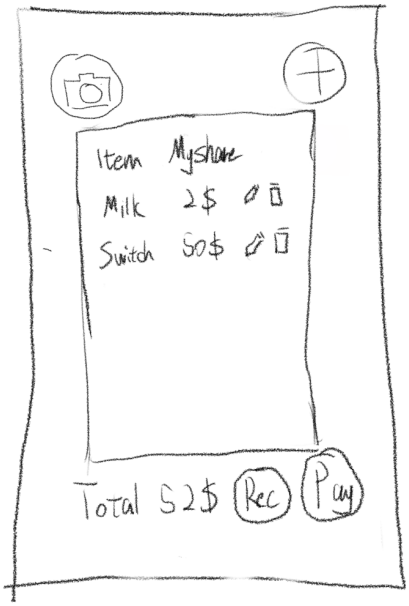


Figure 4: Event List Sheet

To support the key feature bill splitting, our application needs to include an event list sheet screen. Users could see the current bill, and could be navigated to detailed pages like invoice scanning, payment, and add/edit items pages.

- **Edit/Add item, Edit/Add group**

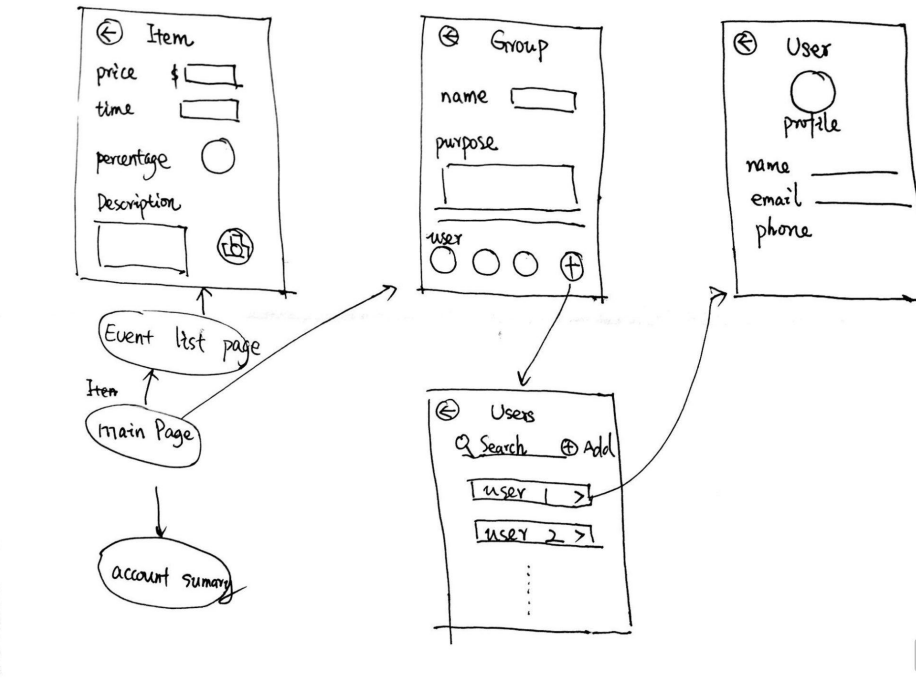


Figure 5: Edit/Add Item/group

As an important detailed page of the previous event list sheet page, edit/add item/group pages are used to collect user inputs. Users could enter or edit the purchased items, and add or edit a group of users that are involved in a specific bill that needs to be split.

- **Account Summary**

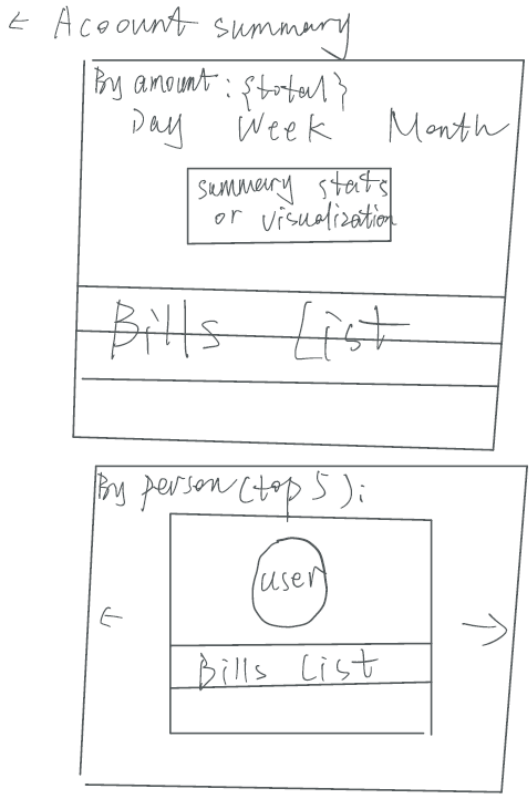


Figure 6: Account Summary

Based on the key feature cloud storage, we would like to also offer an account analysis for the users. The summary page is composed of 2 parts. One is summary by amount, where users could check statistics or visualizations of how much they have spent on a daily/weekly/monthly basis. A list of bills will also be displayed. The other part is an overview by person, where users could check the 5 people that they have split most bills with, along with the exact bills.