

User Experience Design Project #3: Mobile Wallet Platform

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Executive Summary

Our design team's goal was to take the current wallet app of the Royal Bank of Canada (RBC) and to extend it into an app to facilitate many more of the financial related transactions of their clients' lives. We performed user research in order to find out how people currently use wallet apps and how we could adapt the wallet app to meet user needs. Through this research, we determined that users largely want to save money, as well as desire ease and convenience. Based on these needs, we developed the RBC Life App which we believe meets both the needs of the users and of our client. A few of the highlights of this app include the incorporation of banking app functionality, the ability to transfer money between friends, the ability to buy tickets, and the option to use RBC Rewards and coupons when making purchases. This document details the design process followed to come to this final product.

User Research

The team held 2 focus groups to gather user requirements and learn about current mobile wallet usage. One group consisted of 6 novice mobile wallet users, who either have never used a mobile wallet before or have only used one a few times. The participants were Amritesh, Kenya, Courtney, Revathi, Sydney, and Dr. Wilson. The second group consisted of 6 expert mobile wallet users, who use or have used mobile wallets regularly (at least once a month for a few months). The participants were Victor, Yunhao, Qiyao, Prerna, Xinyi, and Xiaohan. The following Discussion Guide contains the questions the design team used to help guide the discussion.

Discussion Guide

Interview Description and Purpose: The purpose of this focus group is to learn about current mobile wallet usage and to determine any additional uses for the RBC mobile wallet app (in addition to store purchases) based on user requirements.

Easy warm up questions:

1. Do you have a smartphone?
2. How many apps do you use on a daily basis?
3. What bank(s) do you use?
2. Without thinking about specific app features, what do you think about the concept of a mobile wallet?
3. Would you be interested in using an app like this? In what ways?
4. Do you have any concerns about using a mobile wallet app?
 - a. If so, what kind of concerns?

Main questions for both groups:

1. Can you think of what financial transactions you do during a typical month?
 - a. Is there anything inconvenient about any of those? What?
 - b. How do you think they could be improved?
2. Are there any financial transactions involving cash that you think could be better if done electronically?

Main questions for experts:

1. Which mobile wallet apps do you use?
 - a. What do you use them for?
 - b. Why do you use them?
2. Are there any transactions that you do not use your mobile wallet for and why?

- a. How would being able to do them electronically improve them?
- 3. Have you ever used any bank apps?
- 3. Do you still feel the need of carrying cash, or credit card? For what transactions? Why?

Main questions for Novices

- 1. Have you ever used any mobile wallet apps?
 - a. If so, which ones?
 - b. If so, what for?

User Needs

These were identified as the main user needs after the design team reviewed the focus group transcript and discussed what the users said, listed in order of most important to least important:

- 1. Manage banking finances without making trips to the bank or a computer.
- 2. Easier way to split restaurant checks and give money to friends.
- 3. Easy and convenient way to do transactions in daily life and save money.
- 4. Clarity of what needs to be done to make a financial transaction.
- 5. Want to be sure that a transaction worked.
- 6. Want to feel secure using the app.

User Personas

After doing the user research, we created two user personas which represent the interviewed users and their needs, which were utilized in the extension of the mobile wallet app.

Tyler White

Tyler is a undergraduate student at the University of Florida majoring in Biology.



Motivations: Tyler does not work, but gets money from loans and scholarships, and is interested in managing his finances on the go. He is concerned about security, but wants to be able to things easily and conveniently. He is a novice mobile wallet user.

A month in the Life of Tyler White:

During the weekdays, Tyler drives his scooter to classes and works on his projects at the library. Every weekend, Tyler goes grocery shopping with his roommates and uses his debit card to pay. Twice a month, he buys gas at a local gas station. Tyler enjoys hiking and bowling, so he tries to go camping or bowling at least once a month with his friends. At the end of the month, Tyler pays the rent for his apartment using a cheque and utilities by an automatic bank withdrawal.

Elizabeth Collins

Liz is a graduate student majoring in Computer Science. She is a research assistant to a professor in the Computer Science department. Liz is an expert mobile wallet user.



Motivations: Liz has a busy life and does not have time to make trips to the bank. She has multiple cards and does not want to worry about how much money is in each one, or having to carry them all around. She is very strict with her budgets and stays within the limits.

A Month in the Life of Elizabeth Collins:

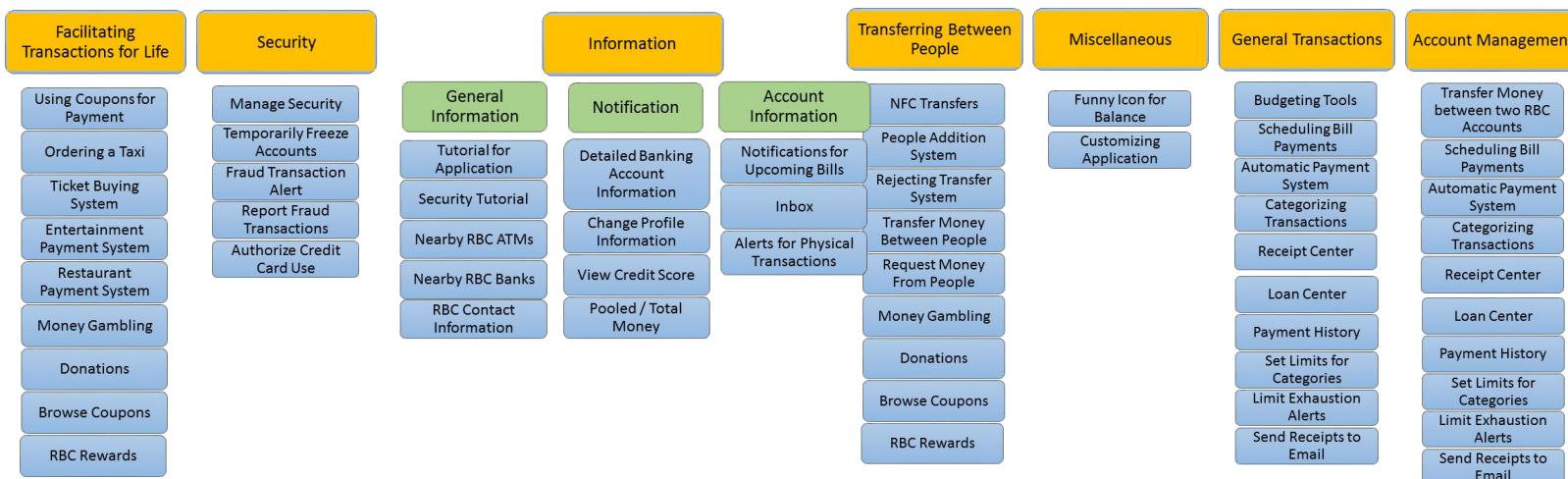
During the week, Liz attends classes, works on class projects, and goes to work in the research lab. She is paid every week, deposits the cheque, and verifies the money has been deposited. When she runs out of supplies, Liz goes shopping at Winn Dixie and pays for groceries using her wallet app. On Sundays, she goes out to lunch with friends and splits the cheque with them. Whenever Liz plans to take a trip out of town, she checks her accounts to make sure she does not overspend

Brainstorming

Brainstorming Process

After developing the user personas and re-reviewing the user responses during the focus groups, the team held a brainstorming session to generate design ideas for the mobile wallet platform extension. The team organized these into an affinity diagram in order to find any relationships between them. Afterwards, the ideas were refined and merged to create the final set of features. The artifacts for each step of the brainstorming process are presented below.

Affinity Diagram



Features After Refinement

The team evaluated the design ideas and removed many ideas that did not meet user needs or were not practical.

Account Management

1. Transfer money between 2 RBC

Account Information

1. Detailed banking account

Security

1. Fraud transaction alert

accounts

2. Add/remove accounts in the application
3. See bank accounts in the app
4. Deposit checks by taking pictures
5. Ordering checks

General Transactions

1. Schedule bill payments
2. Automatic payment system
3. Budgeting tools

information

2. Change profile information
3. Pooled/total money

Notifications

1. Notifications for upcoming bills
2. Notification box

General Information

1. Nearby RBC ATM/Banks
2. RBC contact information
3. Security tutorial

2. Temporarily freeze card

3. Report fraud transactions

Transferring between people

1. Transfer money between people
2. Request money from people
3. Proximity transfers
4. Friends list

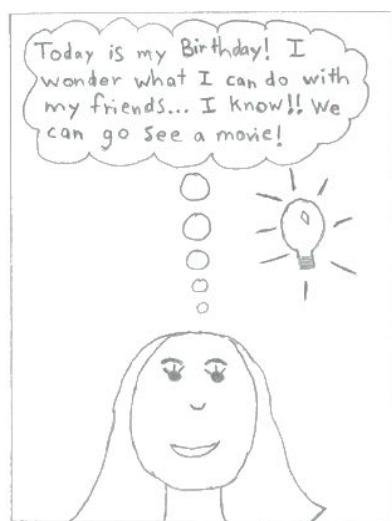
Facilitating transactions for life

1. Ticket buying system.
2. RBC Rewards
3. Coupons

Scenarios and Storyboards

In order to illustrate how the RBC Life App meets the daily financial needs of users, the design team developed 4 scenarios and corresponding storyboards featuring the personas Liz and Tyler.

Scenario 1 (Liz): It's Liz's birthday and she wants to take her friends to see a movie. She opens the app and taps "Life", and then taps "Buy Tickets". She taps "Movie Tickets" and then selects the movie "My Funny Valentine" and selects an 8PM show. She tries booking tickets for 5 people. The app informs that the total that she will have to spend is C\$100. She then quickly goes to the "Budgeting Screen" and calculates that it will damage her budget as it is C\$15 above the budget. She then remembers that she has RBC rewards points and coupons worth C\$20. She uses them and the total becomes C\$80. She then goes back to the buying movie interface, chooses the "Use RBC Reward Points," selects "Use Coupons", and selects the "Fundanpo" coupon. Liz clicks "Book" to book the ticket and pays for it using the app and goes to see movie with her friends.



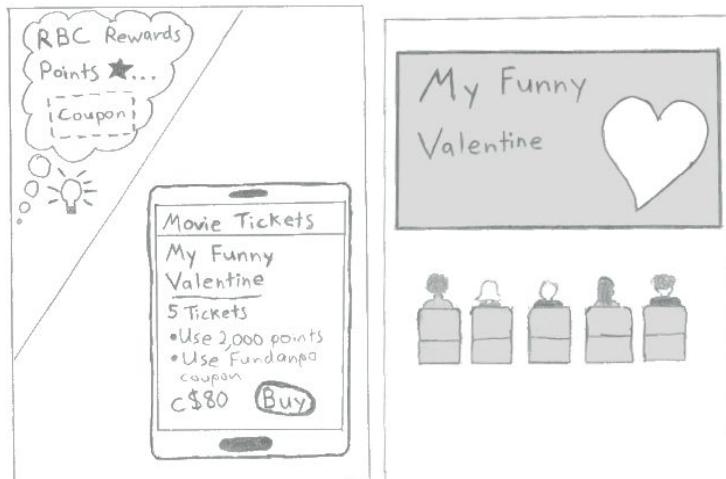
Today is Liz's birthday and she decides to take her friends to see a movie.



Liz opens up the RBC Life App, browses movie tickets, and selects 5 tickets to go see the movie *My Funny Valentine*. The app indicates it will cost C\$100.



Liz quickly goes to the Budget feature of the app and checks how much money she has left. To her dismay, she realizes the tickets are C\$15 above her remaining budget.

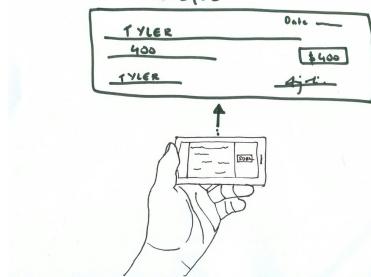


Fortunately, Liz remembers she has some RBC Rewards points and a Fundango coupon totaling C\$20. She applies these and the cost for the tickets becomes C\$80--within her budget.

Liz books the tickets and she has a great time watching the movie with her friends on her birthday.

Scenario 2 (Tyler): Tyler's old phone died a few days ago and he needed a new one. He talked to his parents and got a cheque from them for buying a new phone. He decided to use the app to deposit the cheque. He opens the app and clicks on "Banking" and then clicks on "Deposit Cheque". The app opens his phone camera and instructs him to take its picture. He takes the picture and then clicks "Upload". After the transaction is approved, Tyler goes to Good Buy, looks at several phones, and notices the brand new Nexus 6P. He really wants to buy it, so he checks the application to see if he has enough money. He finds out that he's short on money and decides to buy the phone on installments. He then uses the app to schedule monthly payments for the phone installments under the Banking section of the app.

TYLER DECIDES TO USE THE APP TO DEPOSIT THE CHEQUE. HE TAKES THE PICTURE OF THE CHEQUE AND UPLOADS IT INTO THE APP TO DEPOSIT THE CHEQUE.



TYLER GOES TO THE STORE TO BUY A NEW PHONE. REALLY LIKES NEXUS 6 AND DECIDES TO BUY IT.



TYLER CHECKS THE APP TO SEE IF HE HAS ENOUGH MONEY TO BUY THE PHONE AND FINDS OUT HE DOES NOT. HE THEN DECIDES TO BUY THE PHONE ON INSTALLMENTS.

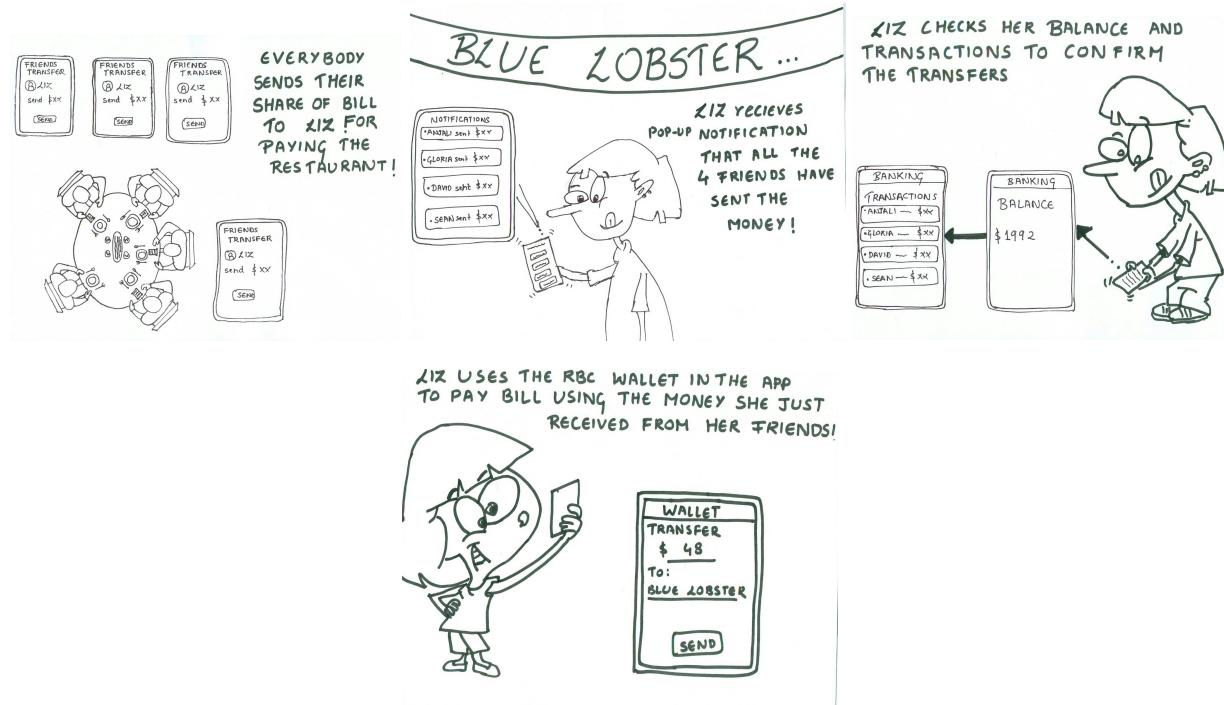


TYLER THEN USES THE RBC APP TO SCHEDULE MONTHLY PAYMENTS TO GOOD BUY.

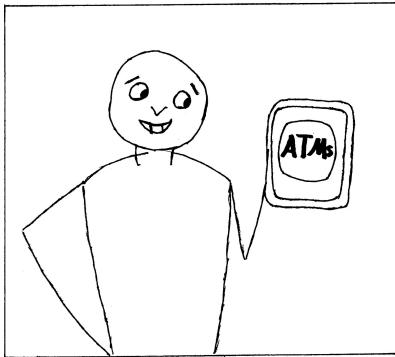


Scenario 3 (Liz): It's a typical Sunday for Liz, and she's out with four of her friends having lunch at Blue Lobster. They've had a lot of fun of eating and talking about the various things normal college students worry themselves with, but it's finally time to pay the bill and leave. They split the check, which is usually a hassle since it requires everyone to bring enough cash to pay for

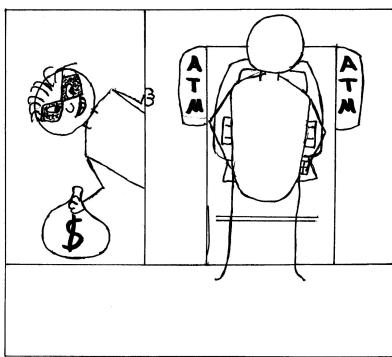
their part. If one person doesn't have enough cash with them, then sometimes it becomes the awkward deal of "I'll pay you back later." Other times if someone does not have enough cash, they have to pay with their debit card and then everyone has to give him or her enough cash to cover for their part of the check. Later, they have to make an unnecessary trip to the bank to deposit the cash. To avoid this situation, Liz normally makes sure to go to the bank before going out to eat to withdraw enough cash to pay for her part of the bill, requiring another unnecessary trip. This time though, in order to avoid the whole mess, Liz and her friends decide to use the Friend Transfers feature in their new RBC Life app, which allows them to trade money between themselves easily and quickly. Liz's friends go to the Friend Transfers section of the app which contains a list of all their friends, tap on her picture and send their corresponding amount of money to her account. Liz receives pop-up notifications on her phone informing her of the transactions from her friends to her. After a quick check of her balance and transaction history in the Banking section of the app, she confirms that the money is there. Finally, she uses the RBC Wallet included in the app to pay the bill using the money she just received from her friends.



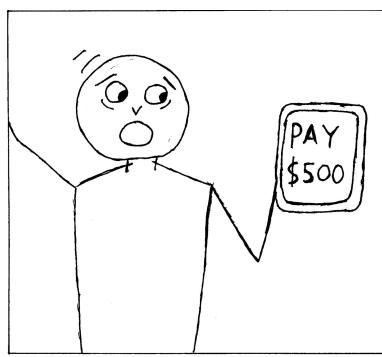
Scenario 4 (Tyler): It is Thursday morning and Tyler wants to go camping this weekend but needs to get some cash to pay for the campsite first. He remembers that the RBC Life App has a feature for finding nearby ATMs, so he pulls out his phone. Tyler goes to the Info section and selects the option to find nearby RBC ATMs. The app detects his location via GPS and indicates there is an ATM a few blocks away. He drives on his scooter to the ATM and uses his debit card to withdraw \$75. Unknown to him, the ATM he used actually had a card skimmer on it. Later that day, Tyler happens to check his bank transactions and notices a charge of \$500 at a car rental place that he did not make. Tyler quickly takes out his phone, opens up the RBC Life App, goes to the wallet, selects his debit card, and clicks "Freeze Card." Then he goes to the Banking section of the app and beside the transaction selects "Report Fraudulent Transaction." The app indicates the transaction was successfully reported and Tyler feels assured that the issue will be resolved.



Tyler wants to go camping this weekend, but needs cash. He uses the app to find a nearby ATM.



Tyler goes to the ATM and withdraws \$75. However, unknown to him, the ATM he used had a card skimmer on it.



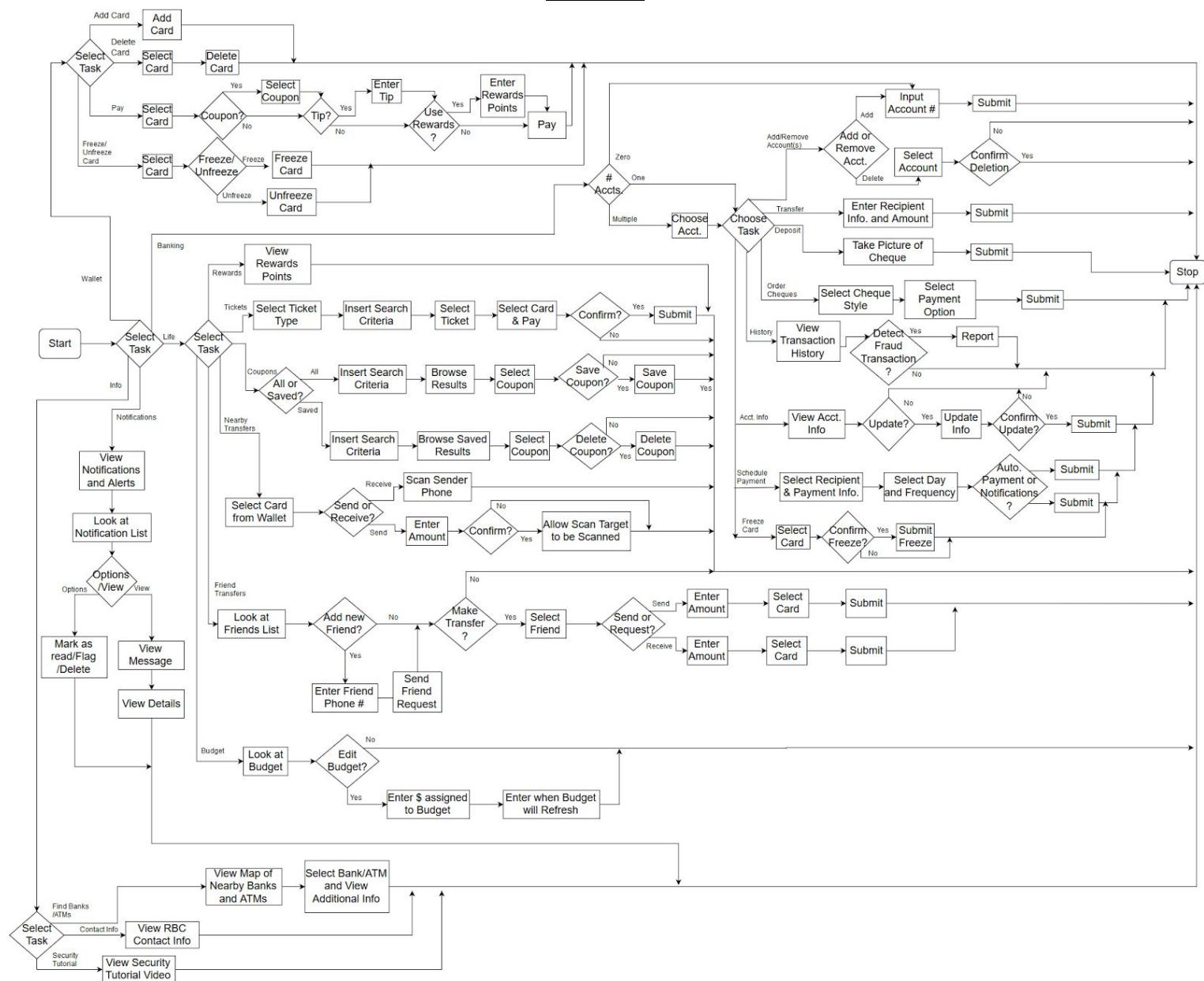
Later that day, Tyler happens to check out his bank transactions on the app notices a charge of \$500 at a rental place he did not make.



Tyler quickly goes to the wallet and freezes his debit card. Then, he reports the \$500 charge as a fraudulent transaction. The app informs Tyler it was successfully reported and he feels assured the issue will be resolved.

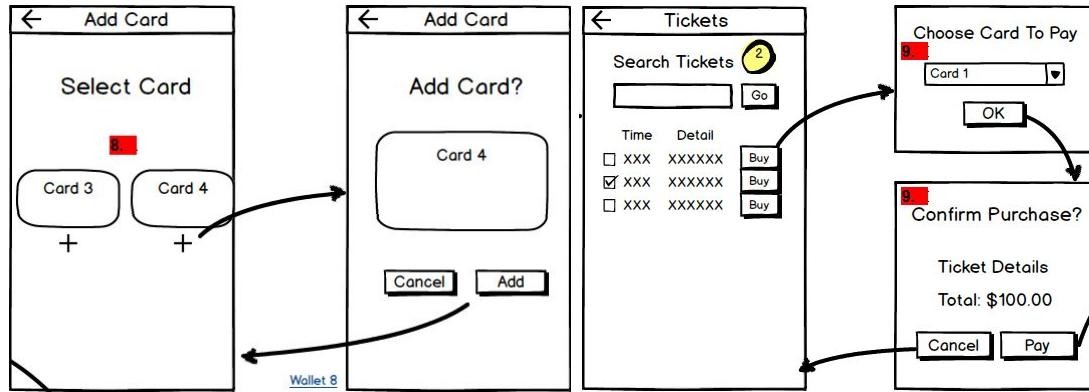
Task Flow and Wireframes

Task Flow



Old Wireframes That Were Changed

<p>1.</p> <p>Banking</p> <p>Choose Account:</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Account 1 ... <input type="radio"/> Account 2 ... <input type="radio"/> Account 3 ... <input type="radio"/> Account 4 ... 	<p>2.</p> <p>Banking</p> <ul style="list-style-type: none"> Account Information Transaction History Transfer Money Schedule Payment Deposit Cheque Order Cheque Freeze Card Remove Account 	<p>3.</p> <p>Schedule Payment</p> <p>Recipient 4.</p> <ul style="list-style-type: none"> Payment Card 1 Amount Day Frequency Each Month <input type="checkbox"/> Auto payment <input checked="" type="checkbox"/> Receive Notifications 	<p>5.</p> <p>Pay</p> <p>Ready To Pay</p> <ul style="list-style-type: none"> Coupon Rewards Enter Tip 	<p>6.</p> <p>Card</p> <p>Card 1</p> <ul style="list-style-type: none"> Remove Freeze 	<p>7.</p> <p>Transfer Money</p> <p>Recipient 4.</p> <ul style="list-style-type: none"> Amount \$ Message (optional)
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Wireframe Design Changes

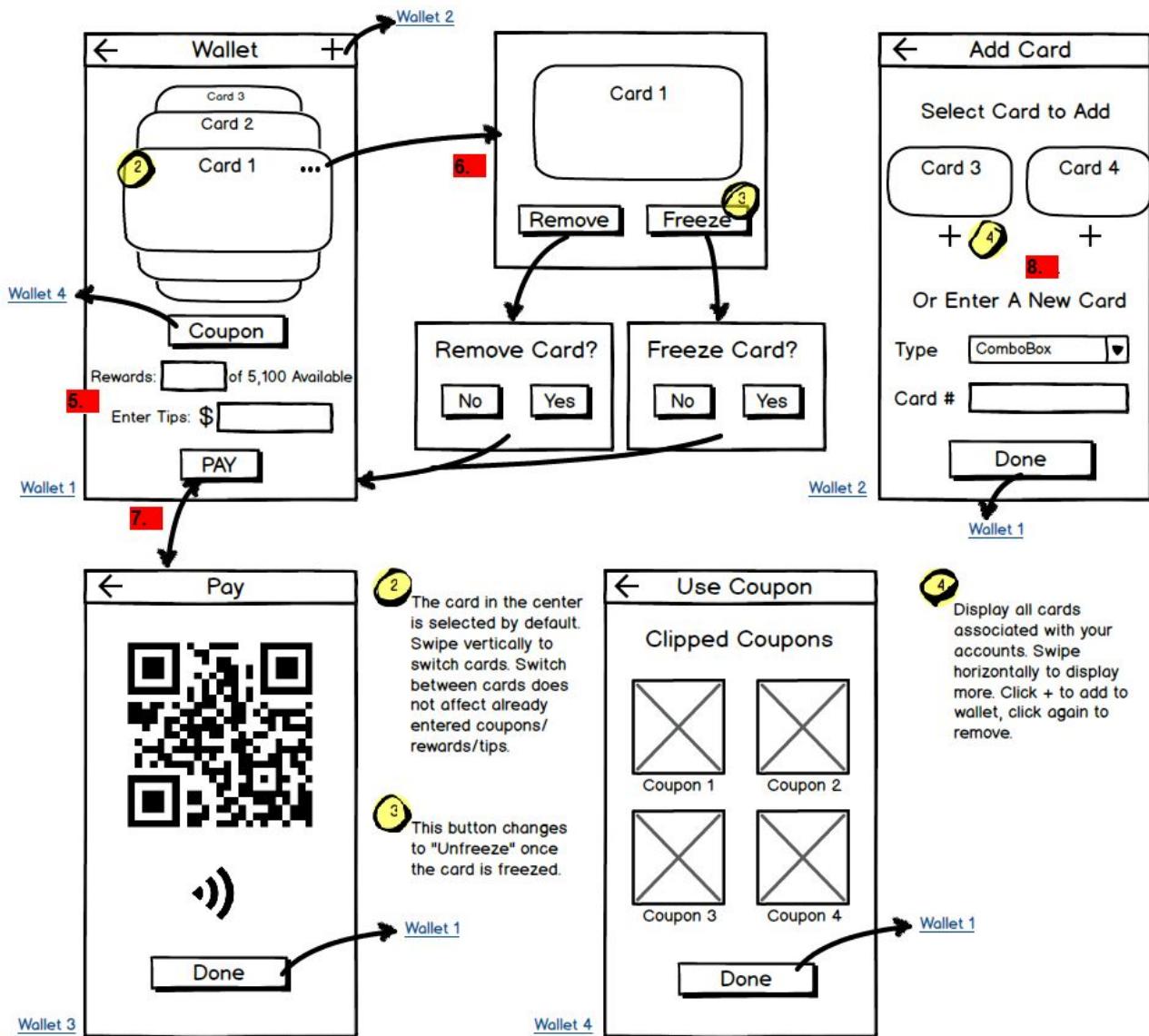
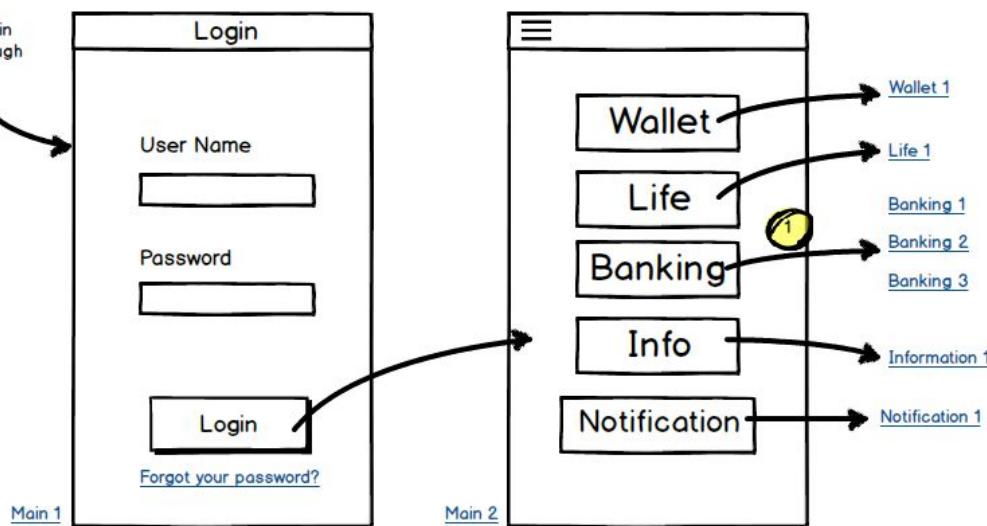
1. Added current balances and pooled balance to select account screen.
2. Added current balance to main banking screen.
3. Added choose card screen to handle all drop down choose card menu options.
4. Changed “Enter recipient” to “Select recipient” in money transfer and schedule payment screens.
5. Changed Select rewards and enter tip buttons into textboxes so that you don’t have to go to another screen.
6. In wallet, hid remove card and freeze card buttons.
7. Removed look-at-single-card-screen and prepare-ready-to-pay-screen so that there are less clicks necessary to pay.
8. Added option to add card from scratch instead of just having to select from the automatically recognized ones..
9. Removed choose card popup in ticket purchase to reduce number of clicks, added option to use coupons and rewards..

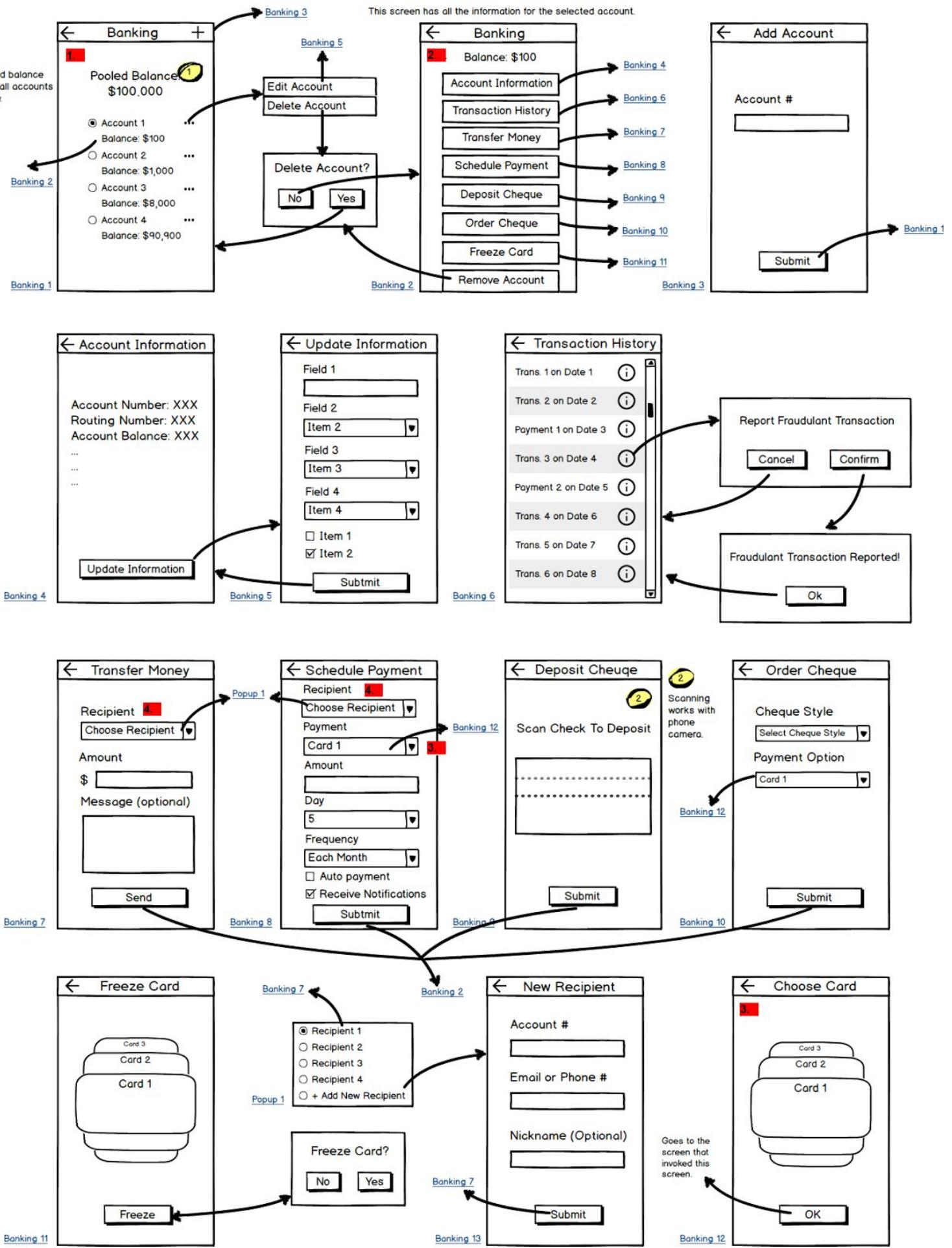
Note: The changes made to the design largely didn't affect the task flow of the app, so the changes are noted in the changed wireframes, but not the taskflow.

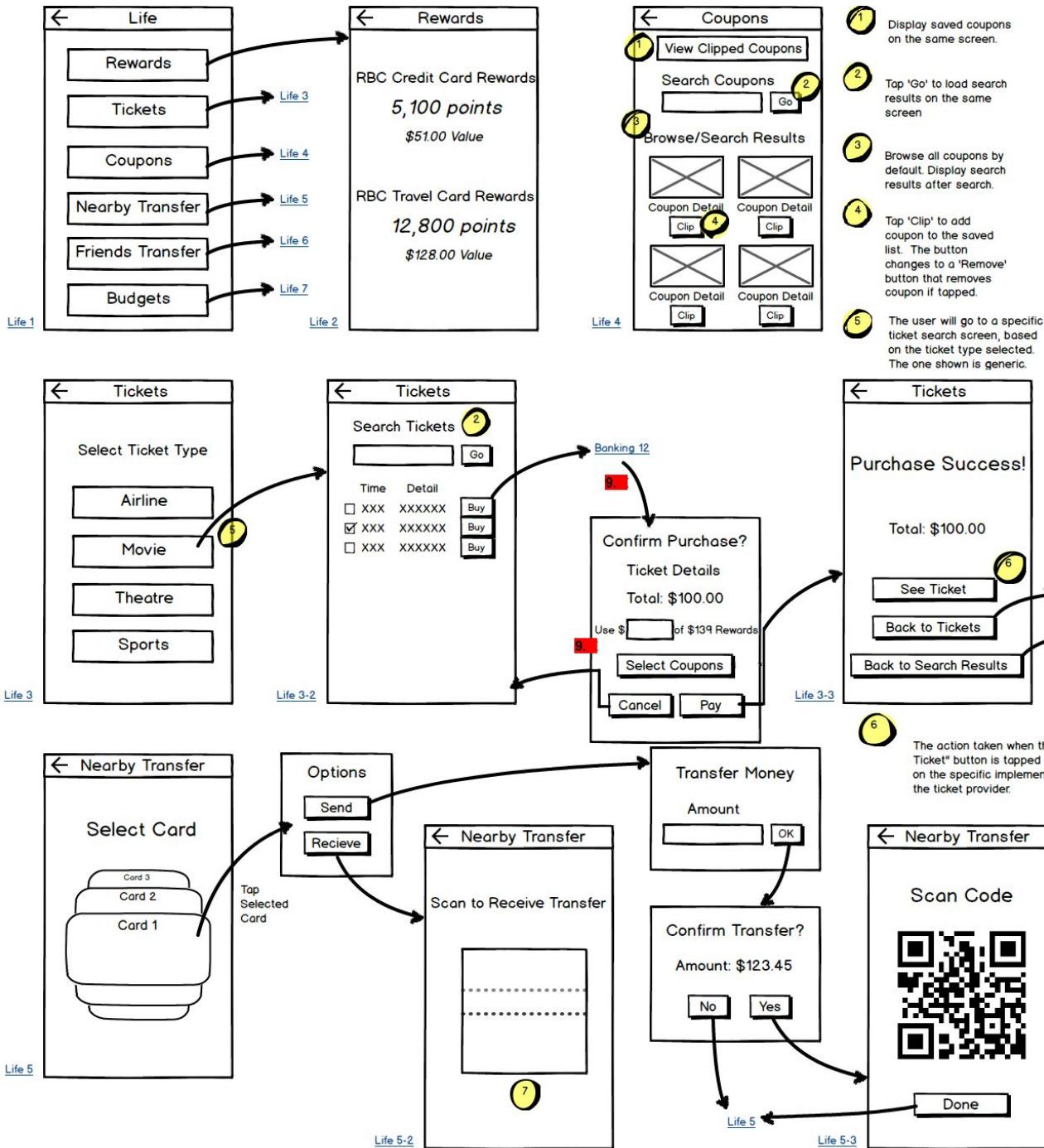
New Wireframes

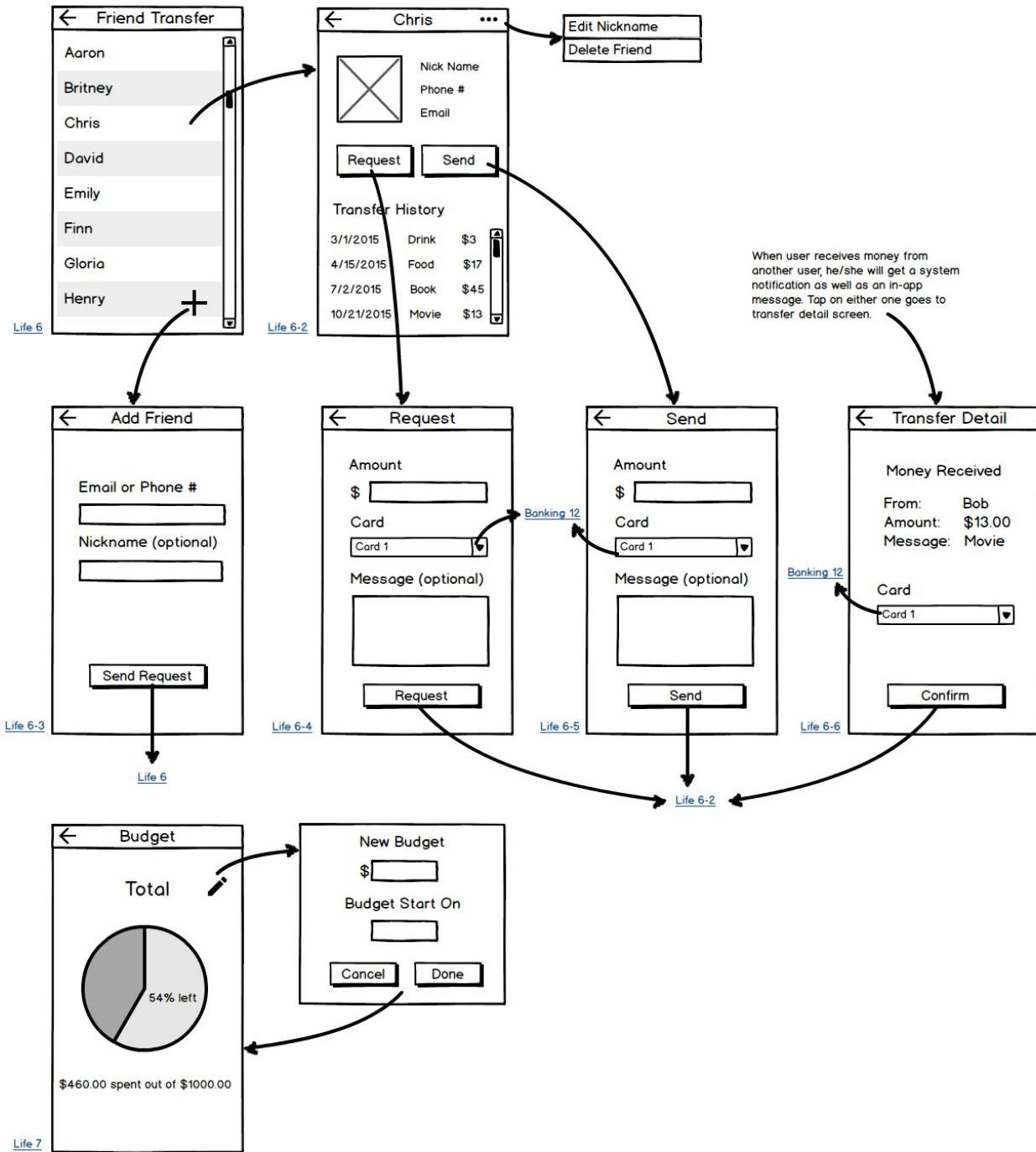
For visual purposes, the wireframes start on next page.

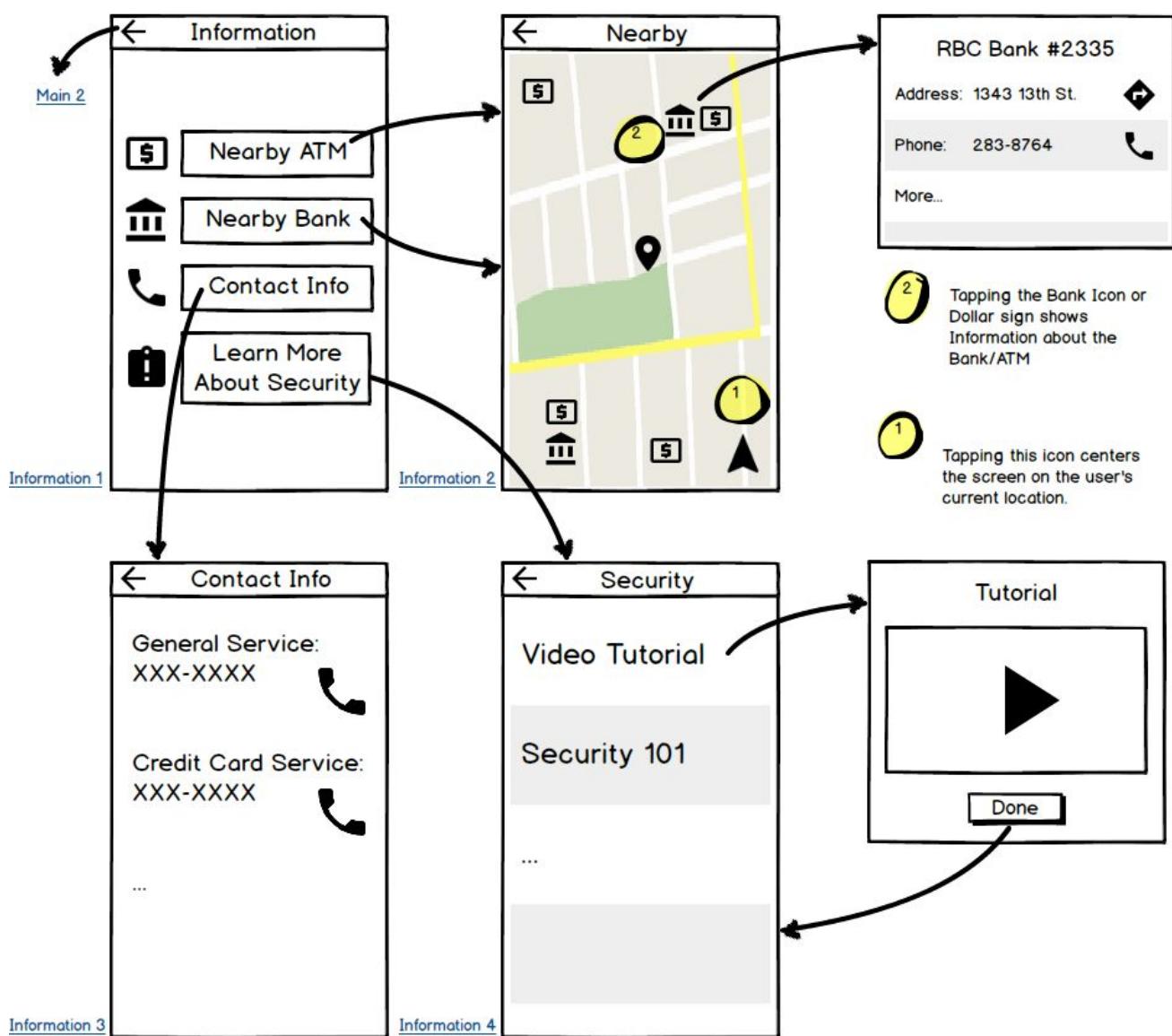
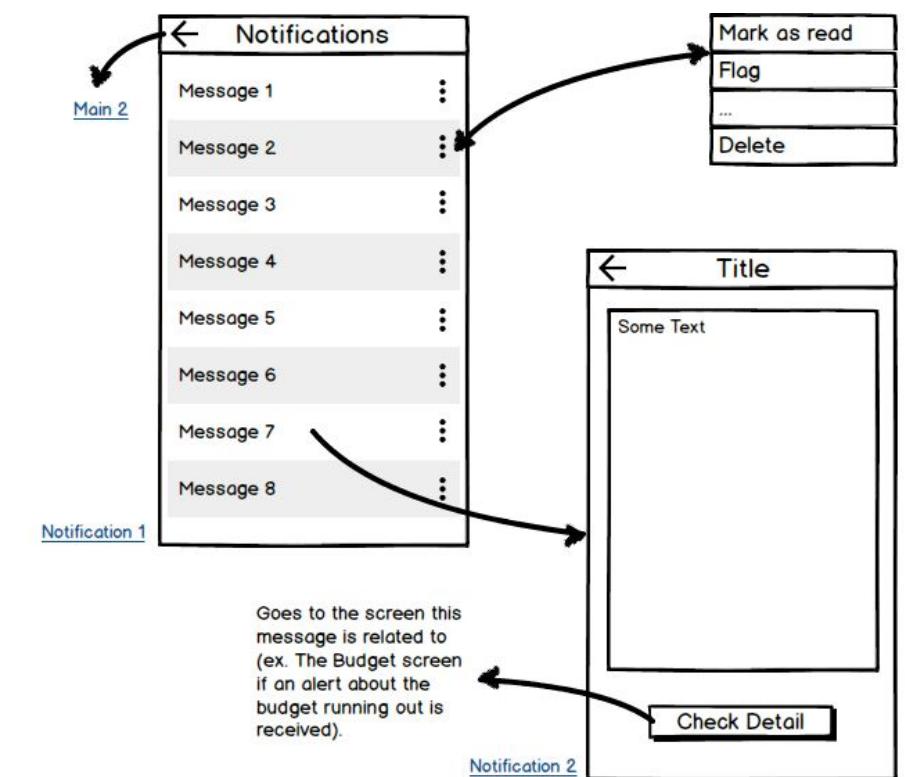
Start screen.
Automatic login
possible through
phone OS..



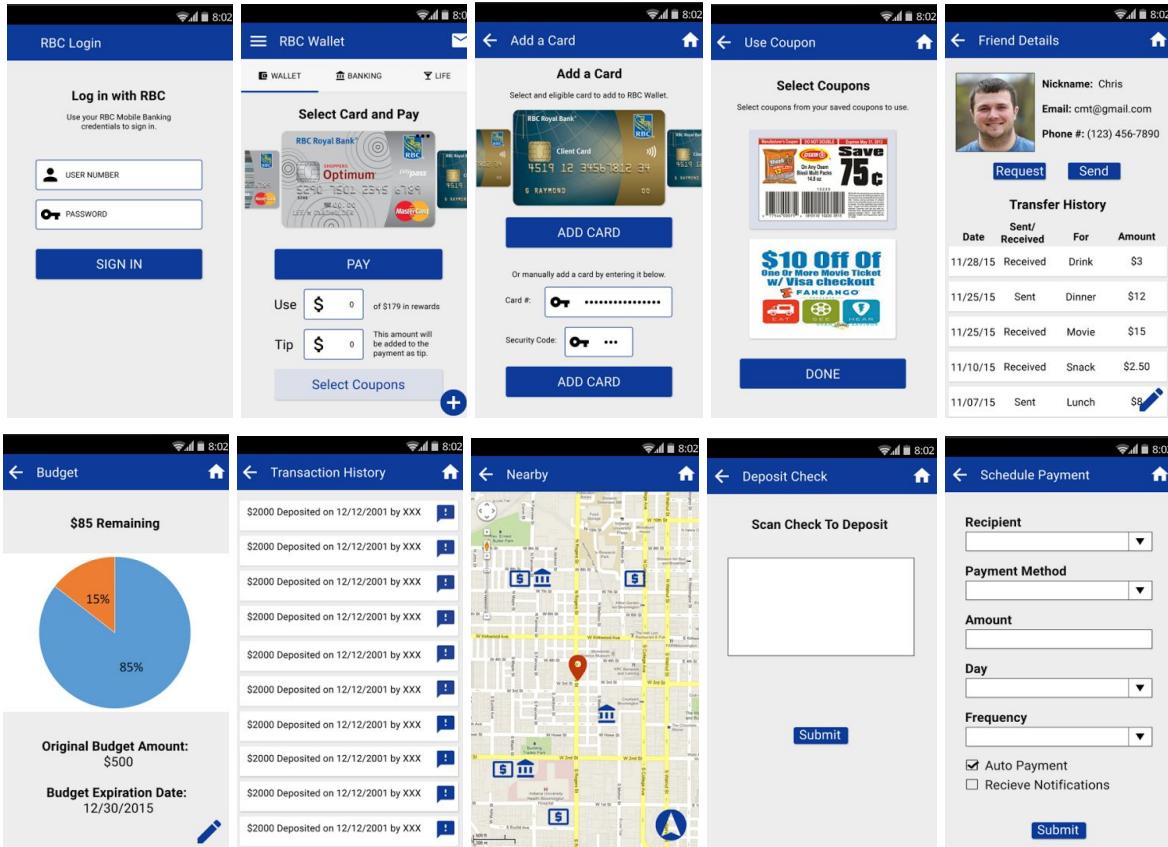








High Fidelity Screens



Think Aloud User Test

The think aloud user test was conducted with Sydney Newsom, an Undergraduate student at the University of Florida. She was provided the interactive prototype and asked to do the following tasks: Deposit Cheque, Make a Payment, Transfer Money to a friend, Report Fraud Transactions, See Notifications, Book a Movie Ticket, Clip Coupons and use them, Find an ATM, Schedule a payment and, Add or Remove Cards. A few bugs with the prototype surfaced. She had some difficulties locating where some of the features are located because it was difficult to realize the difference between Banking and Wallet. Felt that the "Find ATM" option should be under Banking.