



DECEMBER 3, 2015

RBC LIFE

CIS 6930 - USER EXPERIENCE DESIGN

PROJECT #3

CLIENT 3B: GROUP 3

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EXECUTIVE SUMMARY

RBC Mobile Wallet is an innovative mobile payment service that offers flexibility to pay how you want - using your RBC debit card, credit card or various gift cards - all on your smartphone. To improve the existing user experience and finding extended use cases, we conducted two separate focus groups involving novice and expert users. We uncovered the following user needs: securely store user's personal financial information, cards (credit, debit, gift, loyalty), vouchers and more in an organized form on their smartphone; easy in-store payment, ability to send money to friends through the wallet, auto-redeeming loyalty card points, ability to set up repeating money transfers, managing expenses and automatic filling of credit card details while shopping online. With an emphasis on security and ease of use, we redesigned the existing app incorporating our findings and addressing current user pain points. Our redesigned solution enables one tap payment and easy peer-to-peer money transfer capabilities. Further our mobile wallet allows auto-redeeming loyalty card points and money management features through our built-in expense manager. Ultimately, users find that the true value of a mobile wallet lies in the time saved which we enable through our recurring payment functionality and through secure and automatic filling of credit card details while shopping online.

INTRODUCTION

Mobile wallets are witnessing increased adoption across the world. Today, the value perception of the mobile wallet has significantly changed - from being an alternative tool of payments to that of a robust user engagement tool. This is not surprising considering the widespread smartphone revolution and developments around NFC technology. Taking advantage of this, RBC has begun to think of creating a "RBC Life" and their existing mobile wallet becomes the starting place for numerous use cases that incorporate a payment transaction. In this paper, we present a new, secure and simple mobile wallet design that will allow users to shop and transact in the most efficient manner ultimately providing a superior user experience.

USER RESEARCH

Our research focus was to understand the payment journey for a normal user as well as users accustomed to using a mobile wallet. We also tried to identify current hurdles and successes of existing mobile wallet implementations. We conducted two focus groups and started an online discussion in the Apple as well as Android subreddits to gauge what the user expected from a mobile wallet. This user research helped us generalize and find our target users.

FOCUS GROUPS AND INTERVIEWS:

Our first focus group consisted of **7 graduates** pursuing either Master's or PHDs in various disciplines who have never to rarely used mobile wallet whereas our second focus group comprised of **5 expert users**. They all possessed a vehicle and primarily used their vehicle for going to class and coming back. We also supplemented the focus group finding with one-on-one interviews with undergraduates on the campus. The questions asked during personal interviews were derived from the focus group questionnaire:

Questions for Novice Users	Questions for Expert Users
Do you own a smartphone? About how many different apps do you use daily on your phone?	Which mobile wallet do you use? Any specific reason for preferring a particular mobile wallet?
Do you prefer carrying cash or credit/debit cards? How many credit cards/debit cards/loyalty cards you normally carry?	How often do you use your mobile wallet? What do you use it for?
Have you used any type of mobile wallet? If Yes, 1. Which mobile wallet application do you normally use? 2. How many transactions on a daily/monthly basis do you perform? 3. What do you use your mobile wallet for? 4. How is your experience using your mobile wallet to pay for things? 5. How long have you been using the mobile wallet? If No, 1. Please describe your experience using credit cards/debit cards and is there anything that can be done to improve your experience	Can you give us a walkthrough of a typical payment experience using your mobile wallet? In your opinion, what are the best things about using a mobile wallet and what are the things that can be improved upon? What capabilities would you build into the mobile wallet? Where would like to use it?

Potential user needs that we uncovered are as follows:

1. More efficient tracking of rewards and loyalty cards;
2. Information about expenses or a way to track spending
3. Use the mobile wallet to pay bus fare, at gas pumps, restaurants (with tips), barber and in the university food court
4. Automatically redeem loyalty cards points while checking out
5. Pay friends/family members easily with one tap
6. Filling credit cards details while shopping online automatically
7. Set up recurring transfers easily

BRAINSTORMING

To sort and prioritize our brainstorming results, analyze findings from the user research, and identify and group user functions as part of the design we developed affinity diagrams. Affinity diagramming helped us to find themes and structures in the data. After creating the affinity diagram, we walked the data reading through the data thread to find loopholes and design ideas. We grouped our ideas into four main categories which are as follows:

1. Payment use cases
2. Credit/debit/loyalty card management,
3. Expense tracking,
4. Banking related information
5. Peer to peer payment.

ARRIVING ON MIDPOINT DESIGN

- We started off with looking at the current app of the client and found many loopholes and not a very user friendly design.
- We talked to the client about the current app and asked him whether he would like us to redesign it from scratch and he was more than happy to agree with it.
- We took feedback on online portals on the current app and found that users were not very satisfied with the current design
- We therefore decided to design the app from scratch
- Brainstormed through the ideas that were explained above and that's how we arrived at the final design

BEST PRACTICES FOR SIMILAR PRODUCTS INCORPORATED IN OUR DESIGN

We identified Apple Pay and Android Pay as the major products which are similar to our client's requirements:

- Apple Pay and Android Pay both let the user scan the card to add a new card instead of using the manual process by default
- Both the apps follow the respective design guidelines for their apps and we have tried to do the same
- The cards that the user has currently added are the most important screens in both the above mentioned apps and we have the same in our app as well.
- Both systems make use of the phone hardware to the maximum by letting the users pay using Near Field Communication which requires the user to just tap their phones on the payment terminal or on other user's phone for peer to peer payments. This makes the payment just a single tap process.

USER PERSONAS

Based on these user needs, a selection of user personas was formed. The personas intend to reflect the range of target users for the Mobile Wallet app. The following personas (with their respective stories) were created:

1. **Sherry** – (*User Type – An expert user who would not miss a chance to use technology to save her the effort*)



Sherry is a Chemical Engineering sophomore, who has just moved in her new rented flat in Gainesville. She describes herself as lazy and sloth-like. She prefers using technology to simplify her daily life and often uses various apps on her phone to bank, chat, and do other mundane things.

Day in the life - Sherry usually misses her early morning classes and prefers watching the course lectures online. She spends her afternoon tutoring and ends the day with Netflix.

Scenario #1 – (Feature represented: Payment of rent and setting up recurring payments)

Sherry has a class in 30 minutes and today is the last day to pay the rent. She rushes to the leasing office to pay the rent thinking how tedious it is to go every month to the leasing office and pay the rent. In between all her cribbing and complaining she notices that the leasing office has installed new terminals for payment. All she needs to do is open RBC

Wallet app on her phone, tap it on the payment terminal, enter the apartment number and the rent is paid. She discovers that the app has got an exciting new feature and she can easily set up recurring payments. She is extremely delighted and sets up 3rd as the date when the rent will be sent to the leasing office's account every month, automatically.

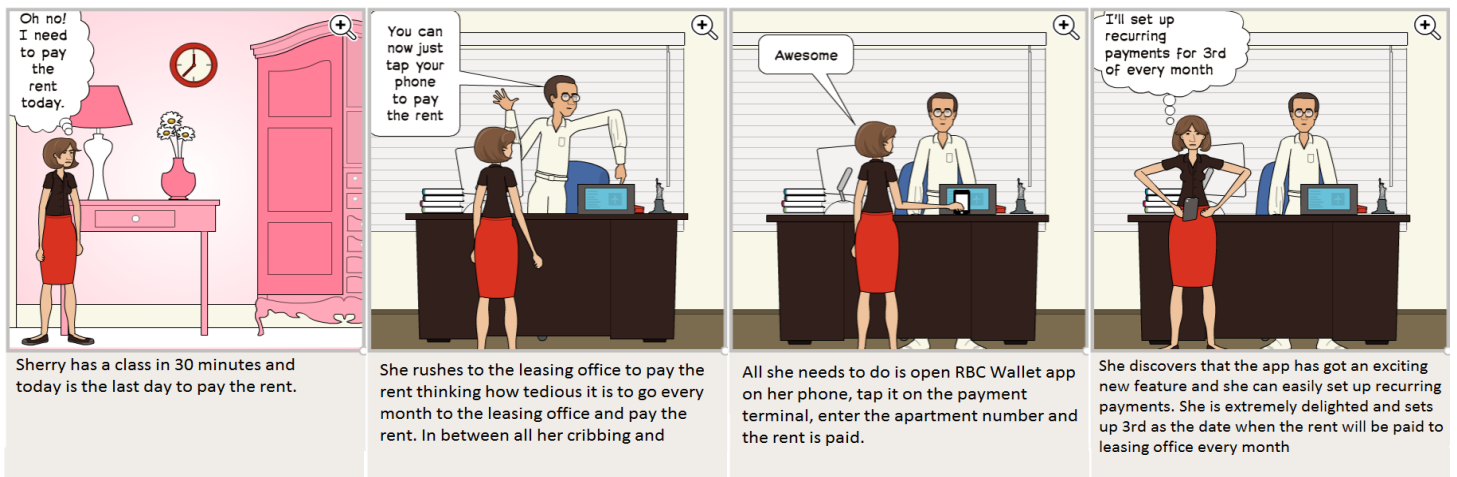


Figure 3: Scenario 1

2. Daniel – (User Type – An novice user who is forgetful and hates typing)



Daniel is an outgoing lumberjack who is really into home improvement. He likes taking up head scratching DIY projects and often reads up on home improvement stuff. He often orders DIY kits from the Home Depot website and finds it a real hassle having to enter his credit card details every time he makes a purchase.

Day in the life - Daniel is a lumberjack by day and a voracious reader by night. He often likes to cook and spends his free time cooking new dishes. His ideal weekend consists of reading up on home improvement and building stuff.

Scenario #2 – (Feature represented: Automatic filling of credit card details while online shopping)

Daniel is planning to build a coffee table and finds all the tools available on the Home Depot website. Daniel finds he has forgotten his wallet in his car and he does not remember his credit card details. He recalls that he has setup his credit card details in the RBC app. He opens the Preferences and gives permission to the RBC app to process payments, goes back to the browser; sees the RBC life popup. He selects his credit card; authenticates and bammmmm.

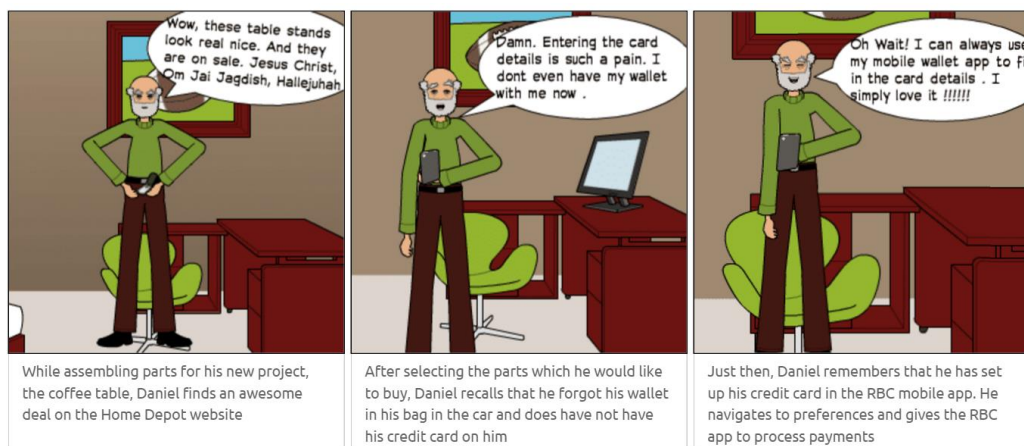


Figure 4: Scenario 2

3. **Katie** – (User Type – A novice user interested in shopping and discounts)



Katie is a bubbly, extrovert California girl who is the Head of Sales at Macys Retail therapy is the answer to all her problems and she often spends her weekends window shopping in malls across the city.

Day in the life - As head of sales, Katie wears many hats each day, from running the operations of her department to sales development. When not working, she likes to follow the latest fashion trends through blogs and social networking websites hunting for discounts and giveaways.

Scenario #3 – (Feature represented – Payment in shopping malls and automatic redemption of loyalty cards)

Katie is driving back home when her friend informs that a 50% off sale is going on in Forever 21 store. She drives to Oaks Mall rushes to the store and picks up everything that she can put her eyes on. She pays off for the items bought by simply using her mobile wallet .She is super happy as she had her Forever21 loyalty card saved in her mobile wallet too due to which she got an additional 5% discount . Yipppeeee!! But Oh No! She comes across a pair of awesome boots but then she needs a quick check on her expenses this month. She checks her expenses on the app and realizes that she can still get the boots and not go broke so here she goes..



Figure 5: Scenario 3

4. **Brad** – (User Type – An expert user who is forgetful and loves new technology)



Brad is an enthusiastic Computer Science student, who besides programming, loves hanging out with his best friend Lee. He is a curious and creative person and passionate about working in the field of Computer? s. He is often forgetful and relies on his mobile to go through his day.

Day in the life - Brad leaves home early morning to attend his classes; has his lunch mostly with his friend Lee. His afternoon mostly goes into group meetings, studying or browsing the internet. His day finishes with working out, checking mail and finishing some tasks of the day.

Scenario #4 – (Feature represented: Payment in buses and peer to peer payment using the mobile wallet)

Brad and Lee are waiting to catch the RTS bus. When the bus arrives Brad realizes that he isn't carrying his wallet so No CASH and No Gator ID. He is worried as he doesn't want to walk back home to get his wallet . Lee offers to pay for him

via his new mobile wallet app. Lee taps his phone on the payment terminal and pays for Brad. Brad promises to pay him back the next day. Lee informs him that the same app can be used to transfer the money back. Brad gets amused and downloads the app instantly .Lee pays back the money to Brad using the pay a friend feature of the app by just tapping phones.



Figure 6: Scenario 4

DESIGN SOLUTION – MIDPOINT

Task Flows

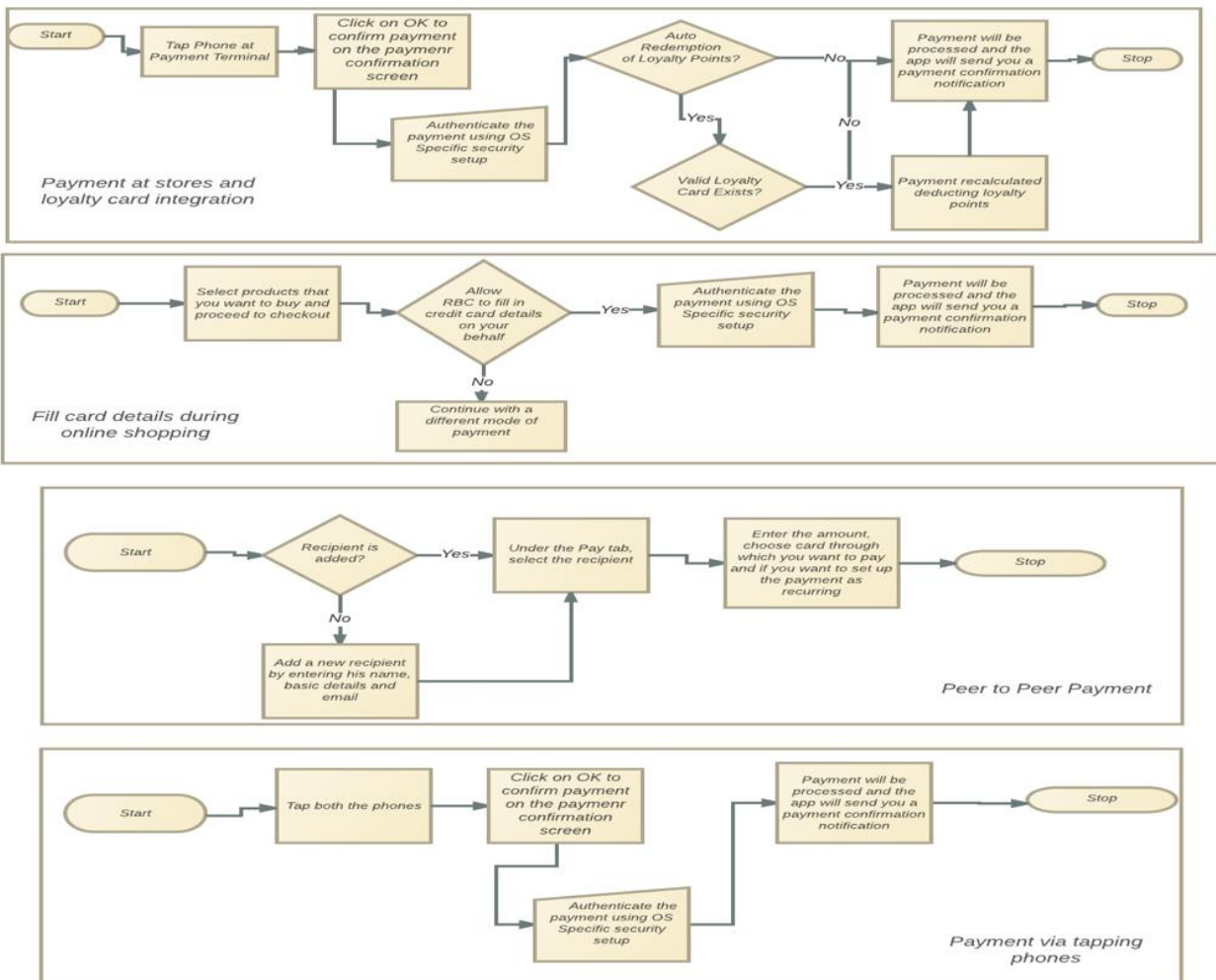
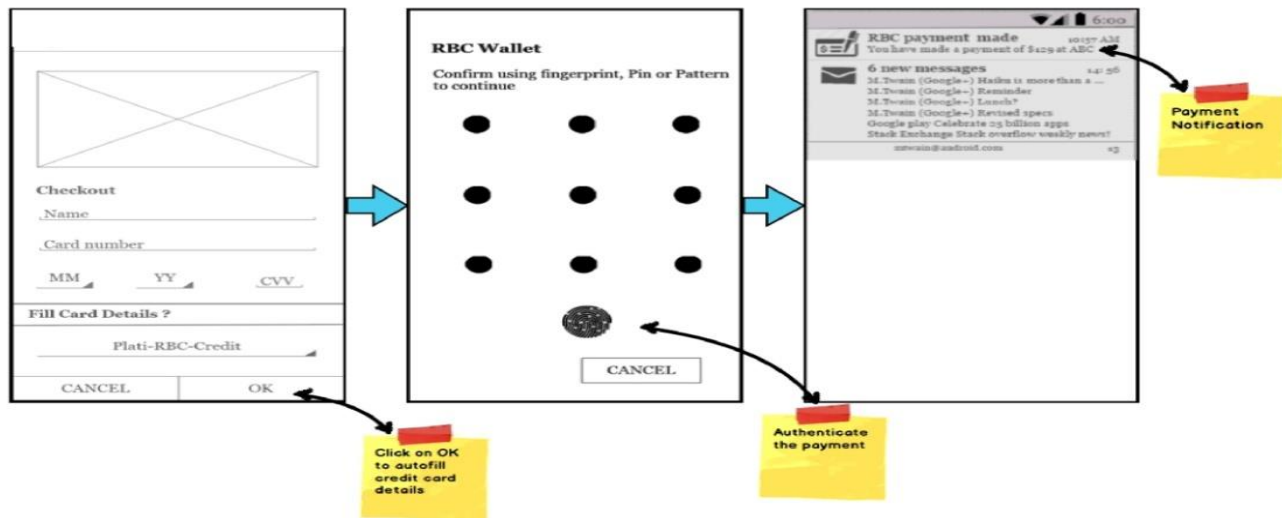


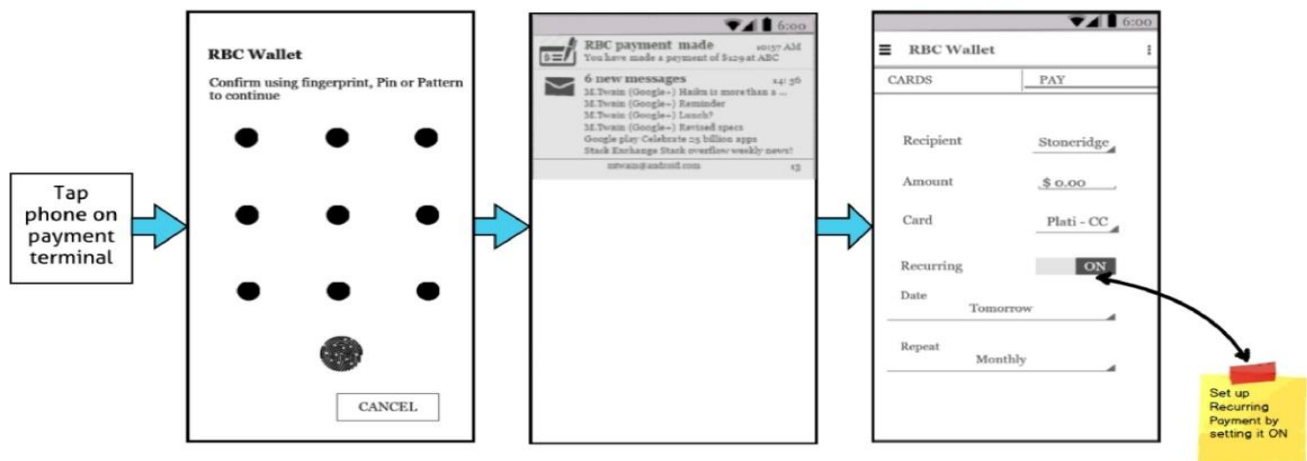
Figure 7: Midpoint Task flows

Wireframes - Midpoint

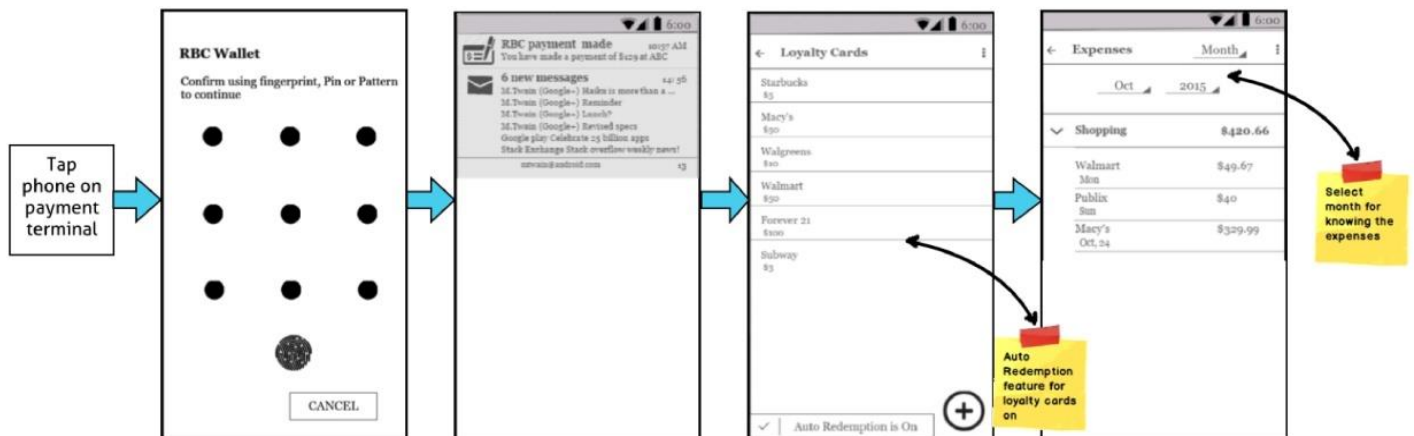
Fill credit card details automatically



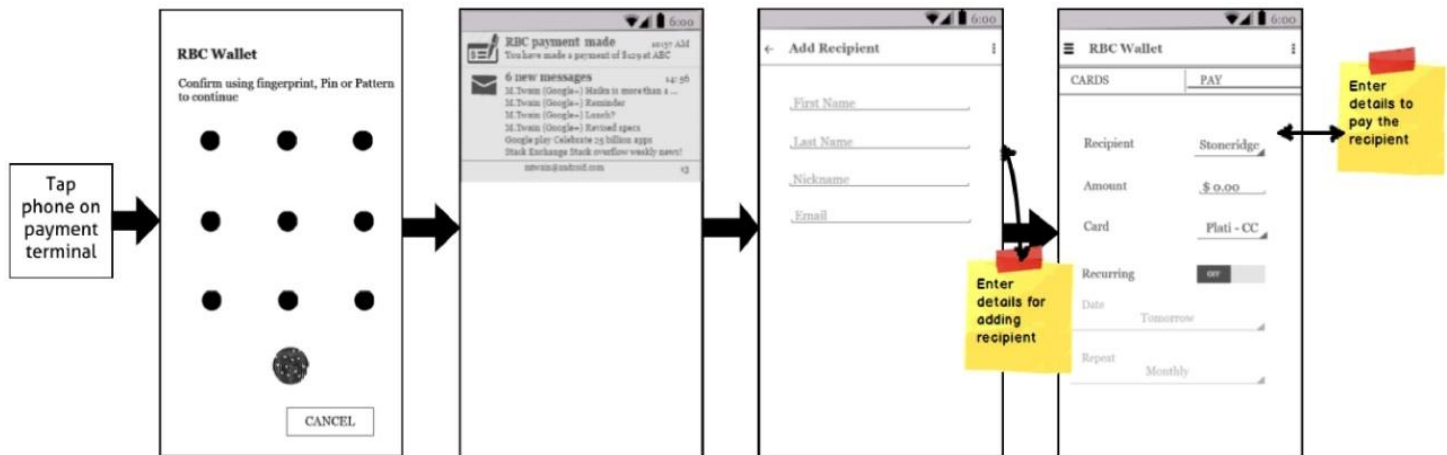
Setting up Recurring Payment



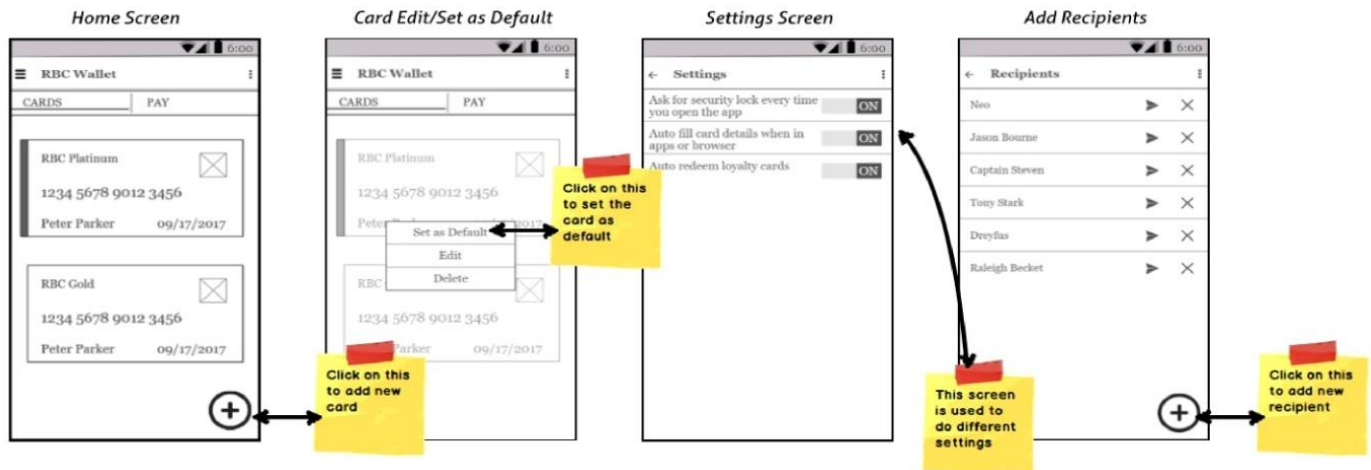
Redemption of loyalty cards and Expense Checker



Peer to Peer Payment



Additional Wireframes



Client feedback

Client was happy with the overall product and really liked a couple of features like auto fill details in the browser and setting up recurring payments that will send the payment to the designated recipient on every occurrence of the set schedule. Along with the client feedback we also took into consideration the comments that were posted on the iOS and Android app stores which pointed fingers at the current design of the app. The app design that we have come up with follows the recommended guidelines for Android app development which looks fresh and in line with the best designed apps on the platform.

Design Solution – Final

Task Flows

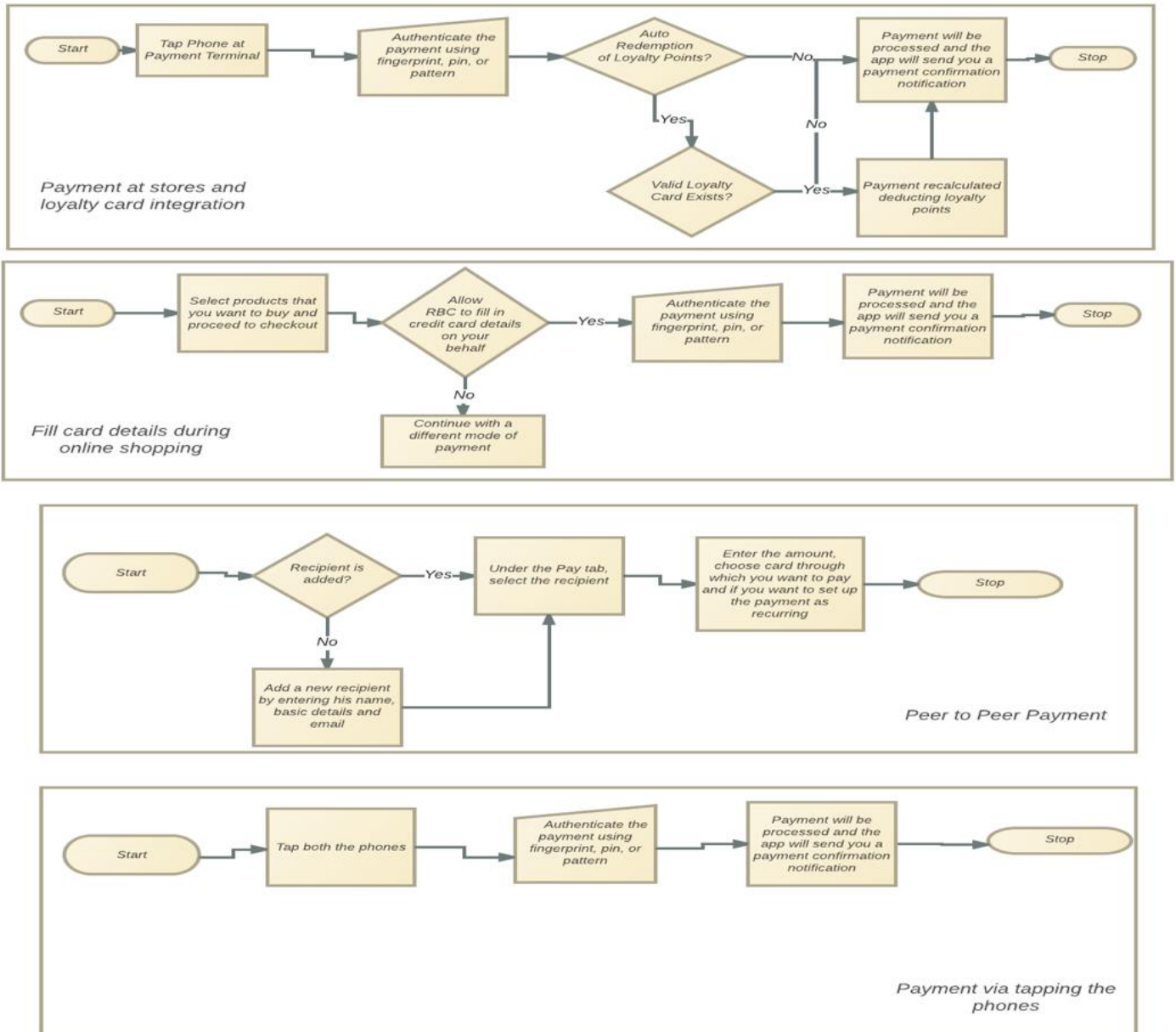


Figure 8: Revised Task Flows

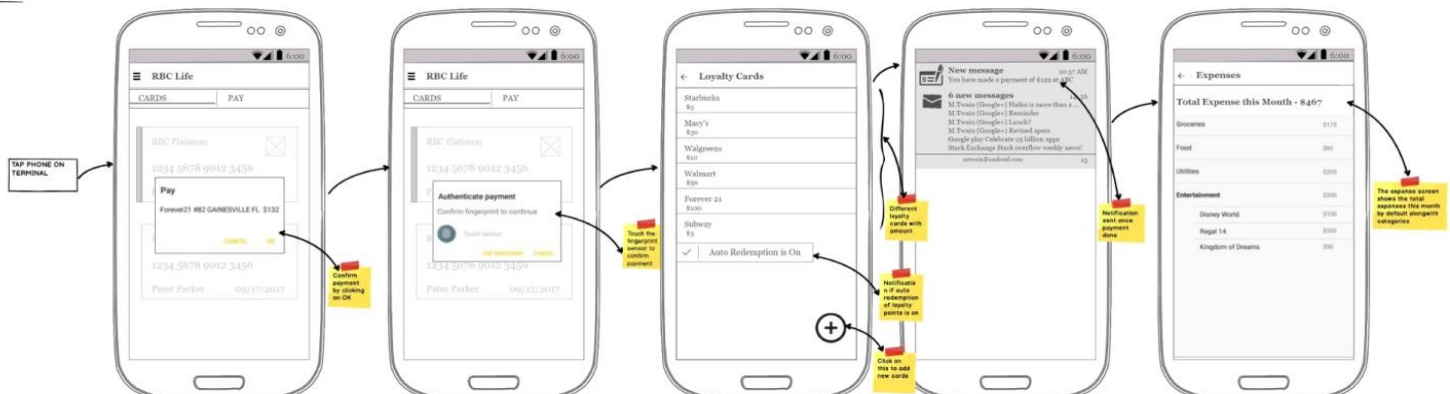
Fill credit card details automatically



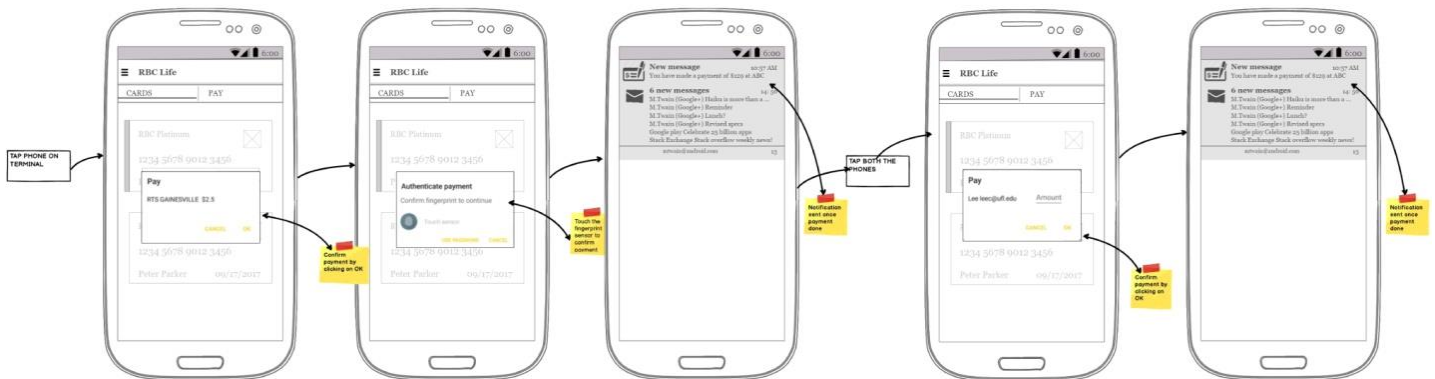
Setting up Recurring Payment



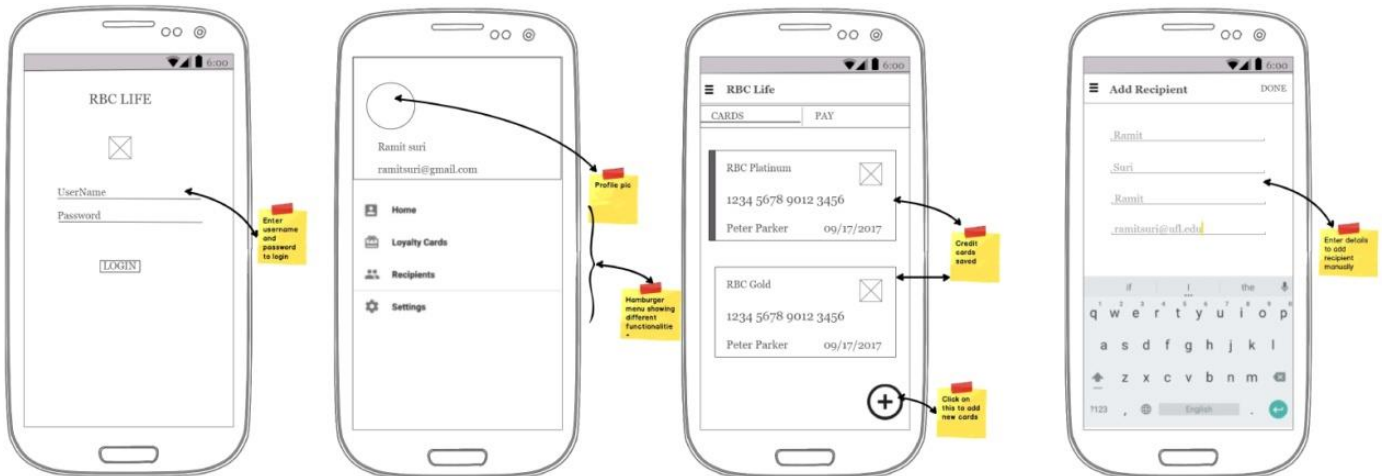
Redemption of loyalty cards and Expense Checker



Peer to Peer Payment



Wireframes for login, hamburger menu, cards home screen and Add Recipient



Wireframes for Settings and Card Setup



Design Iterations

Iteration 1

- **Payment Confirmation Step**
 - On tapping the phone at payment terminal a pattern, pin or fingerprint confirmation screen occurs asking for the user identity verification.
- **Settings**
 - The settings for the app present on the action bar menu.
- **Security Setup**
 - Payment secured by app's own internal implementation of storing and verifying user's identity
- **Expense Management**
 - Requires the user to select the month and year to see the expenses.

Iteration 2 - (Changes made based on midpoint feedback and more brainstorming):

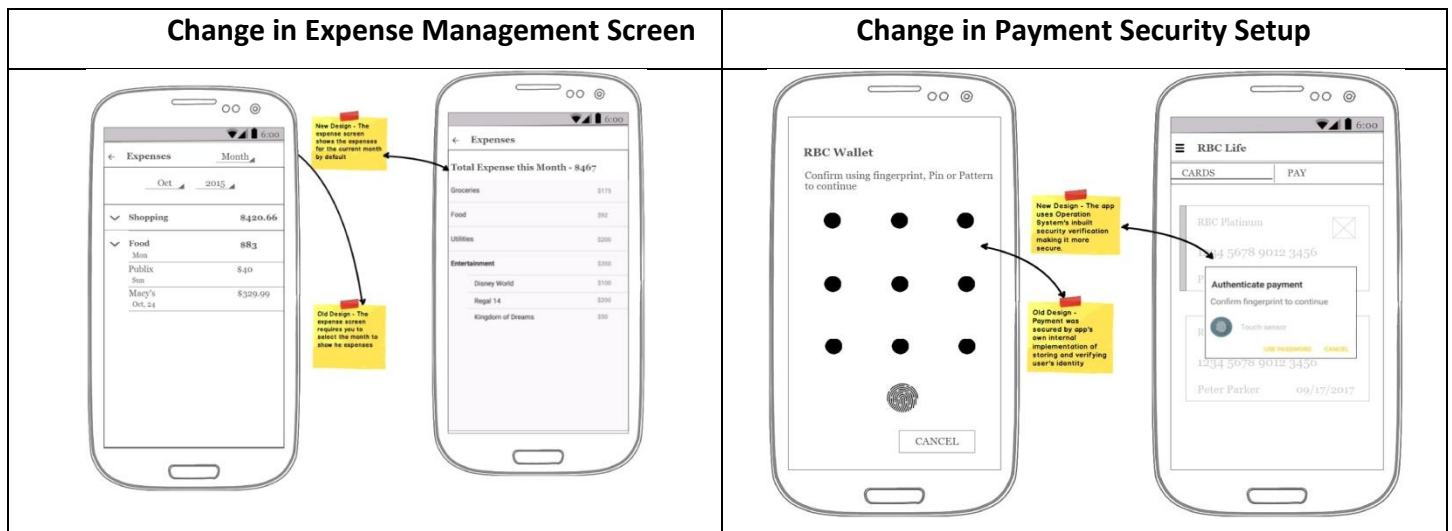
- **Payment Confirmation Step**
 - On tapping the phone additional payment confirmation screen added for more security.
- **Settings**
 - The settings for the app present on the action bar menu.
- **Security Setup**
 - The app uses Operation System's inbuilt security verification making it more secure.
- **Expense Management**
 - The app shows the expenses for the current month by default.

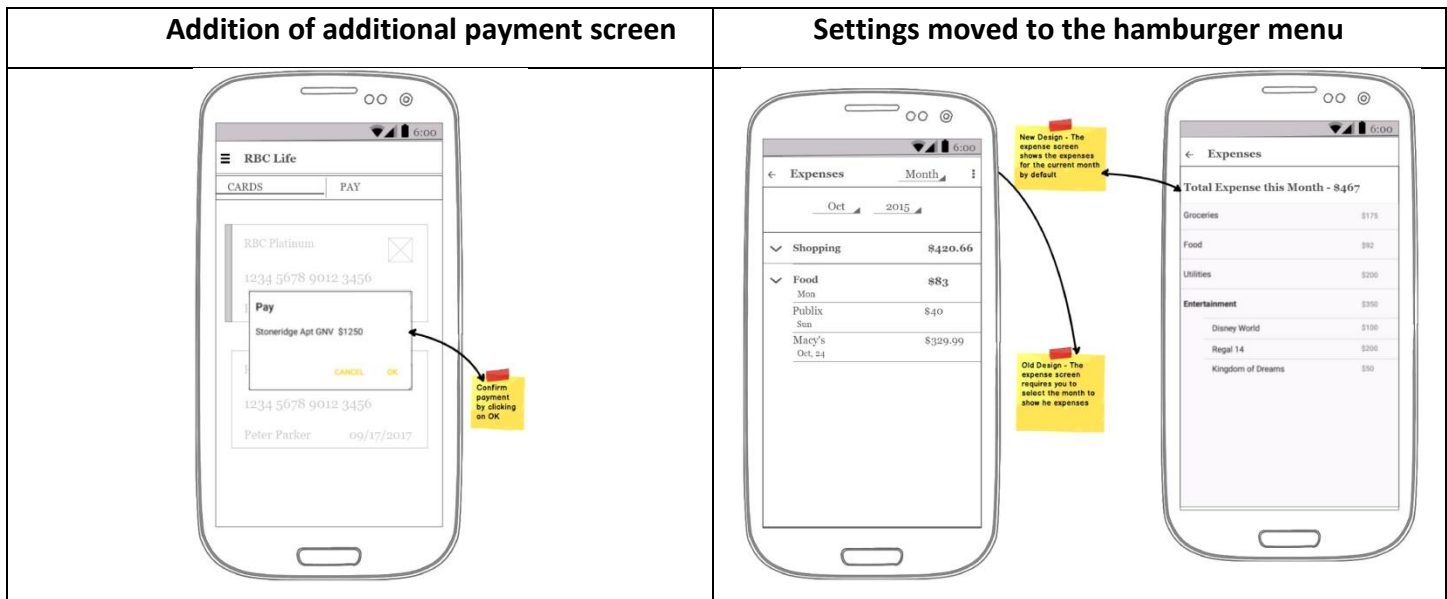
Iteration 3 - (Changes made on based on suggestions of the think aloud user test):

- **Settings**
 - The settings moved to the hamburger menu for better accessibility.

Note – The changes on the screens have been shown below as annotated on the wireframes.

Changes in Wireframes from midpoint to final





INTERACTIVE PROTOTYPE DOCUMENTATION

Through our interactive prototype of the RBC Mobile Wallet app we have showcased the following features based on importance as discovered through our user research.

1. Login to the app
2. Addition of credit cards/ Setting the credit card to be used as default
3. Pay to an already added recipient
4. Addition/ deletion of recipients
5. Addition of loyalty cards
6. Setting up auto redemption feature of loyalty cards
7. Automatic filling of credit card details in browser

Please follow the link for the interactive prototype –

Note – The payment by tapping feature requires additional hardware like payment terminal and phones with NFC and hence is not shown in our interactive prototype.

THINK ALOUD USER TEST

We asked a potential user to perform the following tasks and asked the participant to verbalize her thoughts and keep up a running monologue as they used the app. To help the participant acquaint to this type of testing, we showed her a sample video of somebody else thinking aloud. Tasks we asked the user to perform:

1. Adding a new credit card

User comments excerpts: "The first thing I see are two tabs: Cards and Pay. I also see a small plus icon on the bottom right corner under the Tabs. Aha, I can scan the card or enter the details manually. Voila."

2. Check monthly user spending

User comments excerpts: "I don't see the word expense anywhere under both the tabs. I will next check the three-line

button on the top right of the screen. I see an option called Expenses and yes, there it is."

3. Send money to a friend using the mobile wallet

User comments excerpts: "I see no option to send money. I remember seeing the option "Recipients" under the three-line button; so I will navigate to that part and see what's under there. Okay, I can see user names. I can again see the little plus icon in the bottom right hand corner."

Suggestions:

User suggested moving the hamburger option to the left so that it remains consistent with other mobile applications. She also recommended guidance on the best card for payment for a particular transaction would be a useful feature. Also, she mentioned she would like the capability to share purchases, real time incentive and good management of receipts and documents.

TRADEOFF BETWEEN CLIENT AND USER NEEDS

A couple of users wanted to see the mobile wallet app also managing their bank accounts. After talking to the client we decided to not include the feature as their already exists a banking app from the client and it would not only make the feature redundant but also will be out of scope for a wallet app.

The client brief mentioned about letting users order food from within the app but none of the users we talked to wanted something like this as there already exist mobile apps for all the major food outlets and integrating them with the app would be a very difficult thing to implement. We instead came up with the feature to fill cards details with just one tap in the browser when shopping online and this can be easily extended to be used in mobile apps for the food outlets.

CONCLUSION

We discovered and researched user needs regarding mobile payment solutions and identified the target user population.

After validating internally and frequent brainstorming, we conceptualized design ideas; creating personas and generating possible scenarios describing how the app will be used. Storyboarding helped us sketch the persona's story including details of context of use. Wireframes, along with these tools helped us communicate our ideas to our client effectively.

After receiving valuable feedback from the client, we incorporated his changes and started creating the interactive prototype. Task flows helped us organize and drove our final design. The final prototype was derived from user intent and was created to meet the persona's expectations.