Parking Meters?
Let’s make that experience sweeter

UX Design

Katrina Martel

Presentation Outline

Introduction

- Problem Space

User Discovery

- User Interviews
- Personas

Information Architecture

- Information Architecture
- User Flows
- Sketches

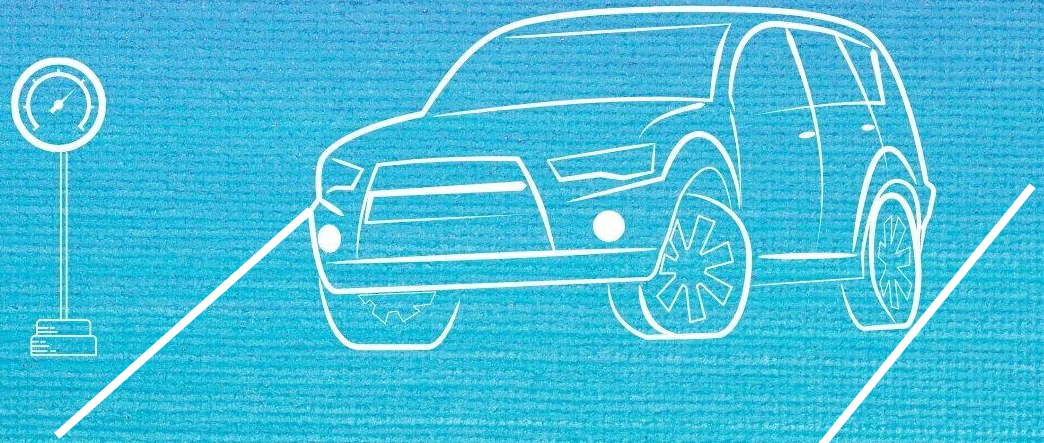
Wireframing & Prototyping

- Wireframes
- Demo

User Interface Design

- Style Guideline

Introduction



Why Parking Meters Could Use a Makeover

In many cities within British Columbia, parking meters are technologically limited.

- The goal of this project is to modernize how users interact with parking meters.

The ultimate aim is to offer a mobile experience to pay-for-parking users to counteract limitations that stand-alone, non-touch interface meters incur.

Project Description

Unlike traditional parking meters, the heart of this project's design is to offer a digitized experience by offering the following features:

- ➔ A web-interface accessible through user's personal devices to pay for parking.
- ➔ The ability to receive SMS notifications related to ticket expiration.
- ➔ The opportunity to pay through supported digital means (excluding the need for coinage) if preferred.

The culmination of these three overarching features will ideally provide a more positive experience.

Aside: This project will focus solely on the mobile experience within the user's personal device. As such, the following assumptions have been made:

1. Stand-alone meters will be updated to contain their own touch-screen interface to support mobile interaction.
2. For accessibility, stand-alone meters will offer users the ability to use the meter traditionally, or to use the mobile interface on the user's phone.

🚙 What happened to the frog who didn't pay the parking meter?

🐸 They were toad.

Credit

User Interviews

User Interviews

Research Question: How do experiences differ when it comes to parking meters, and what are the barriers associated with using parking meters?

Demographic of individuals interviewed:
Friends & Family

Number of interviews conducted:
5

Script

Introductory Questions

- What is your name?
- What is your age?
- What is your gender?
- List three characteristics that motivate you when presented with a task.
- Do you have a mobile device?
- Describe your comfort level when it comes to touch screen interfaces.

Research-Centric Questions

- How often do you use parking meters in a year?
- When do you typically have to use parking meters?
- Tell me about the last time you used a parking meter.
- What was your first impression of the parking meter's design when you walked up to it?

Script

Deeper Thinking Questions

- Can you describe to me how the parking meter operated?
- What was something that stood out with your experience?
- Have any past experiences with parking meters made you want to avoid using them?
- Is there anything in your experience with parking meters that you would change?
- Are there any concerns that would make you hesitant to use a touch-screen parking meter in tandem with a mobile device?
- Would you consider web applications or mobile applications to be more efficient?

Follow Up Questions (throughout the interview)

- Could you tell me a bit more about that?
- Could you expand on that?
- What do you mean by that?
- Why?

Insights

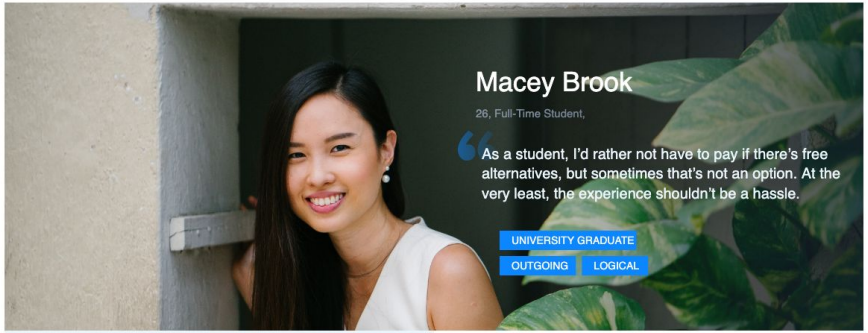
Users want a system that's simple, with clear and concise instructions.

They want options when it comes to payment methods.

Greater feedback from the system to reduce unsureness surrounding whether or not a transaction was successful.

Due to the variance in use of parking meters, a web application is preferred compared to an app to reduce taking up space on the user's device.

User Personas



Bio

Macey is a busy student on a budget. In order to enjoy what downtown offers as well as certain buildings on campus, she's often faced with parking meters, and so she uses them at least once or twice a week.

Although she implores logic to tackle any task and loves to learn, she becomes frustrated when the design of every day things are not intuitive and/or consistent.

If there's a more efficient way to get a task done, she'll opt for that route to save energy.

Goals

- Organization is vital to Macey, so she aims for structure.
- Macey wants to be able to transfer experiences of previously using parking meters to those in different locations in a way that doesn't add overhead.

Frustrations

- Wasted time when it comes to entering the license plate, but then having to return to the vehicle to display the ticket (one or the other should suffice).
- Sometimes it can be difficult to read the instructions due to the placement of where it is and font size. This often varies from machine to machine.

Motivations

Impact	38%
Teamwork	41%
Conscientious	84%
Adapatbility	76%

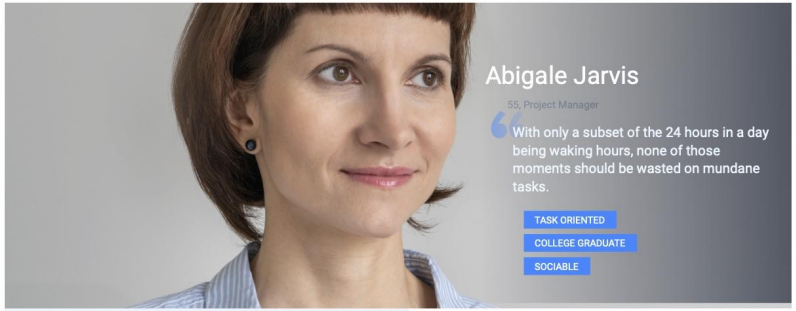
Potential Solutions

> Allow users to either provide their license plate number without a physical ticket, or opt out of providing the license plate number, but be required to have a ticket on the vehicle.

> Include a way to remind users when the ticket is going to expire.

> Ensure consistency in the design across the process.

> Prefers something other than a downloadable mobile application (would rather not have another application that consumes the mobile device's storage).



Abigale Jarvis

55, Project Manager

"With only a subset of the 24 hours in a day being waking hours, none of those moments should be wasted on mundane tasks."

TASK ORIENTED
COLLEGE GRADUATE
SOCIABLE

Bio

Nearing retirement and having verstaile experiences, Abigale no longer wishes to be tasked with sifting through extraneous (and at times, irrelevant) information. Her years of extracting pertinent information from emails has evolved into her recent life's philosophy: to get to the point.

Given this, Abigale wishes to enjoy her sociable neighbourhood by participating in activities downtown, without having to navigate through logistical obstacles.

Goals

- ✓ Parking can often be the worst part about getting to a destination. Abigale wants to be able to take part in her city's events, without the hassle of figuring out how to pay for parking.
- ✓ In her everyday life, Abigale loves being outdoors in warm weather.
- ✓ She likes to plan her days in a calendar to achieve optimal efficiency.

Frustrations

- × The parking meter's lack of modern architecture was a point of frustration.
- × The system offered poor visibility for payment, feeling cumbersome to operate.
- × Based on the meter's location, it wasn't clear which parking spot it aligned with, if any.
- × Having to carry coins for payment can be frustrating, especially when the meter doesn't accept all coins.

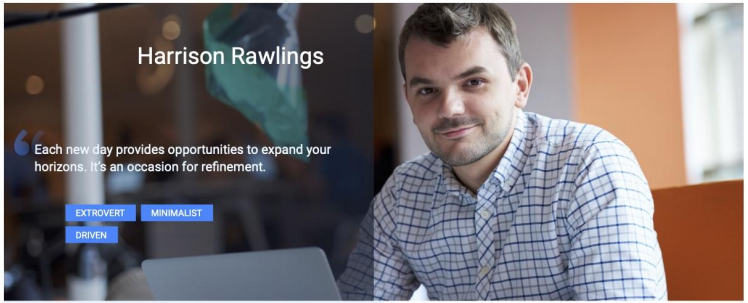
Motivations

Impact	38%
Teamwork	62%
Conscientious	72%
Adaptability	76%

Potential Solutions

> Offer alternative payment methods besides coinage.

> Increase the accessbility of parking meter functionality by means of physical placement, and/or by mobile means.



Harrison Rawlings

"Each new day provides opportunities to expand your horizons. It's an occasion for refinement."

EXTROVERT
MINIMALIST
DRIVEN

Bio

Harrison enjoys working with people and is well-versed with touch-screen interfaces.

His job requires adaptability, and so he's constantly striving for improvement.

Although he doesn't use parking metres frequently, he realizes that there's aspects that can be improved on to offer an enhanced experience.

Goals

- ✓ Harrison tries his best to ensure positive interactions, keeping frustrations at a minimum.
- ✓ When a task is presented, Harrison wants the instructions to be easily understandable so he can focus on how to tackle the task, rather than figuring out the prerequisites.
- ✓ Simplicity and clarity are key.

Frustrations

- × The instructions on the parking meter were in an odd location, which made it difficult to navigate.
- × The wording could have also been more precise.
- × There was a lack of freedom and control (the system's payment incremented by defaults, which introduced constraints).
- × The meter didn't provide confirmation that the transaction was successful. This added some worry, since it was unclear whether there was an error or not.

Motivations

Impact	59%
Teamwork	83%
Conscientious	62%
Adaptability	79%

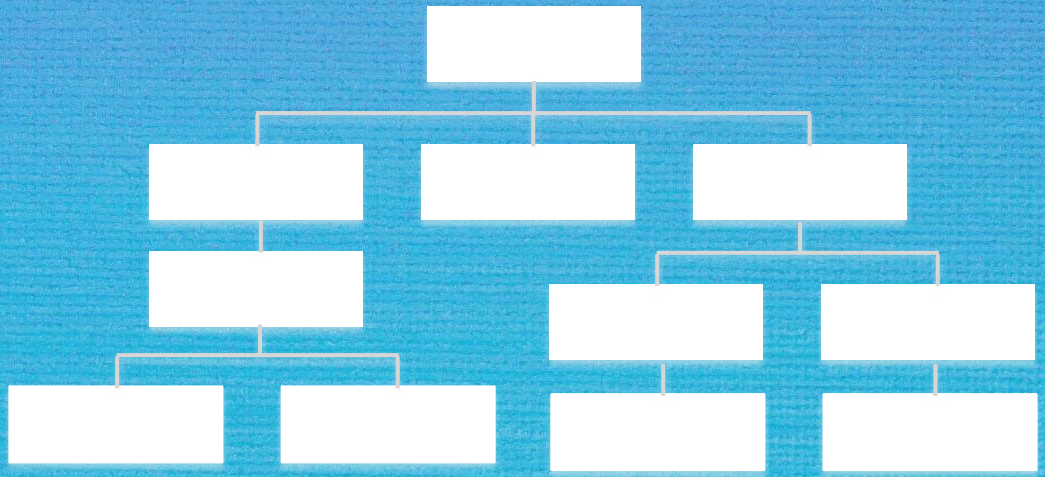
Potential Solutions

> Confirmation of successful transactions would ease unnecessary worry.

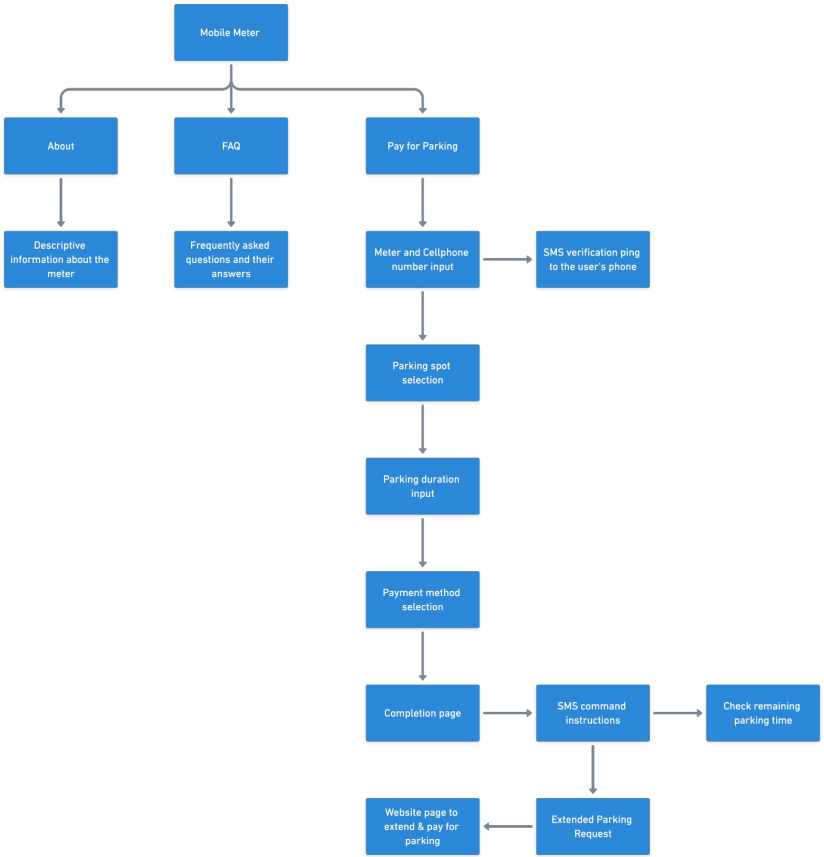
> Having the ability to receive reminders of when tickets are close to expiration would shift the focus away from worrying about needing to halt current activities to increase meter payment.

> More precise and simple instructions could enhance the experience.

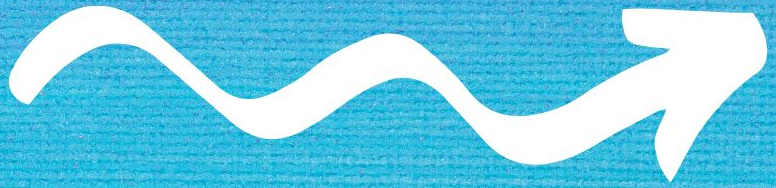
Information Architecture



Information Architecture

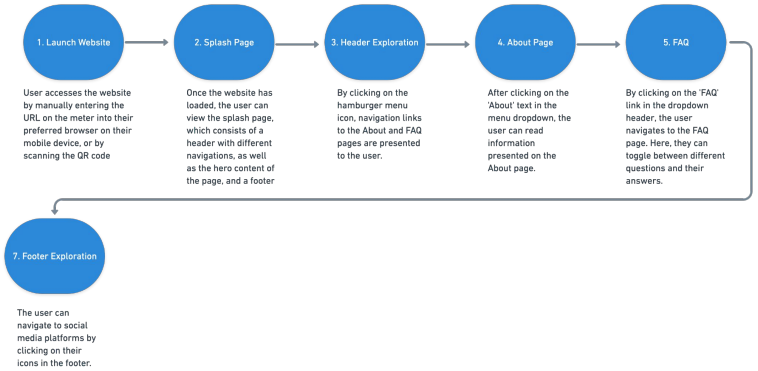


User Flows



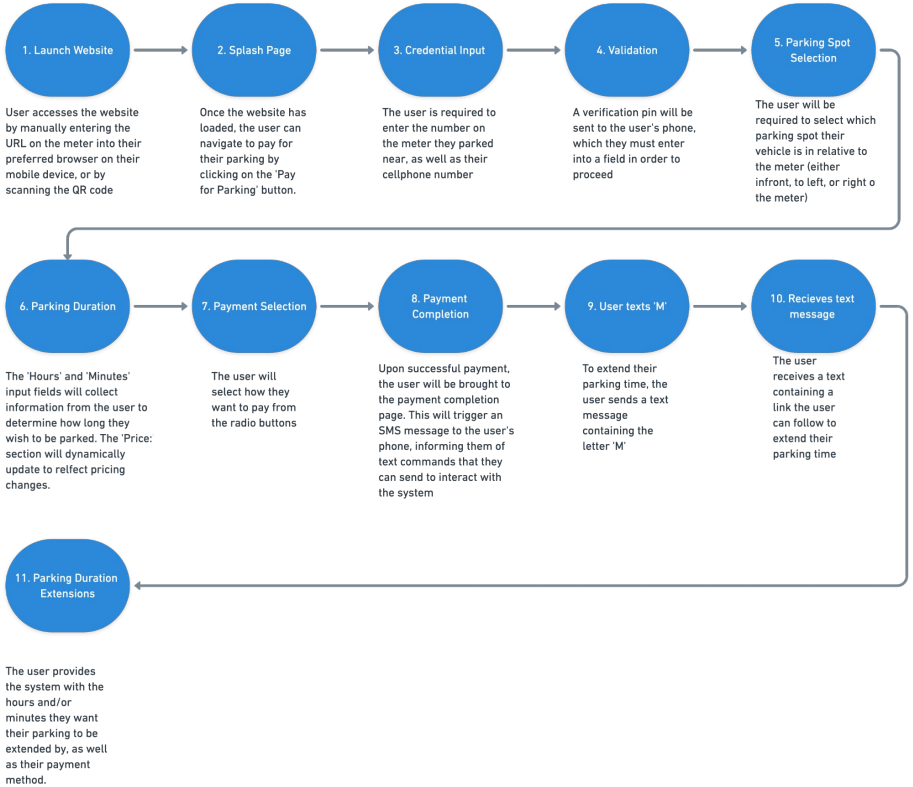
Task One

The first task for a user who opens the application is to explore that navigation links from the splash page. This is represented in the user flow to the right.



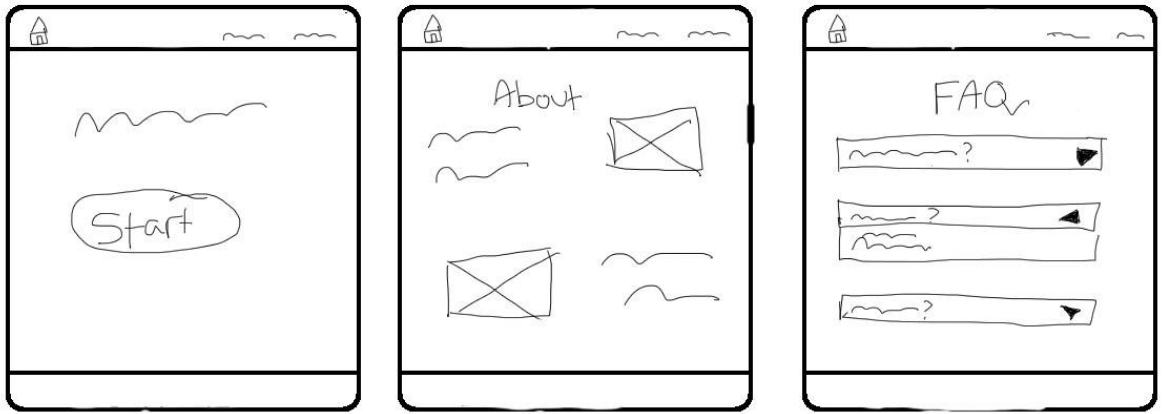
Task Two

The following user flow diagram represents how a user initially pays for their parking then extends the parking duration.

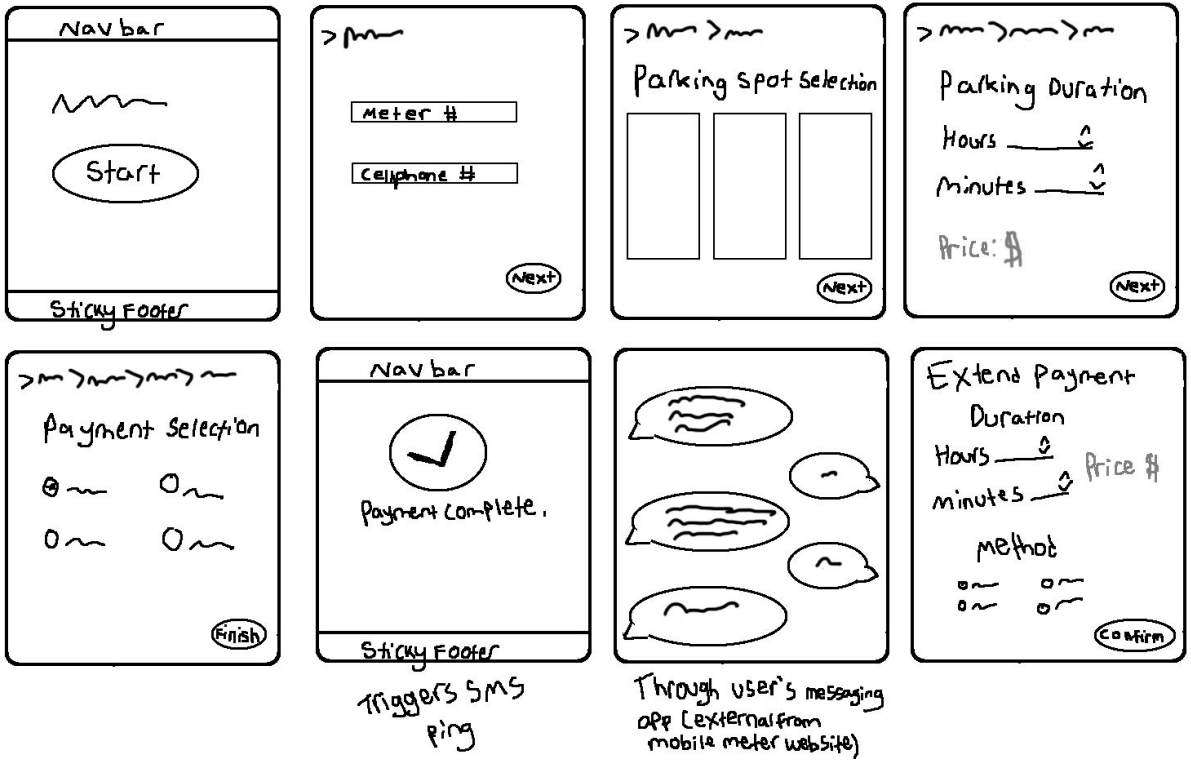


Sketches

Task One: Explore the Navigation Links from the Splash Page

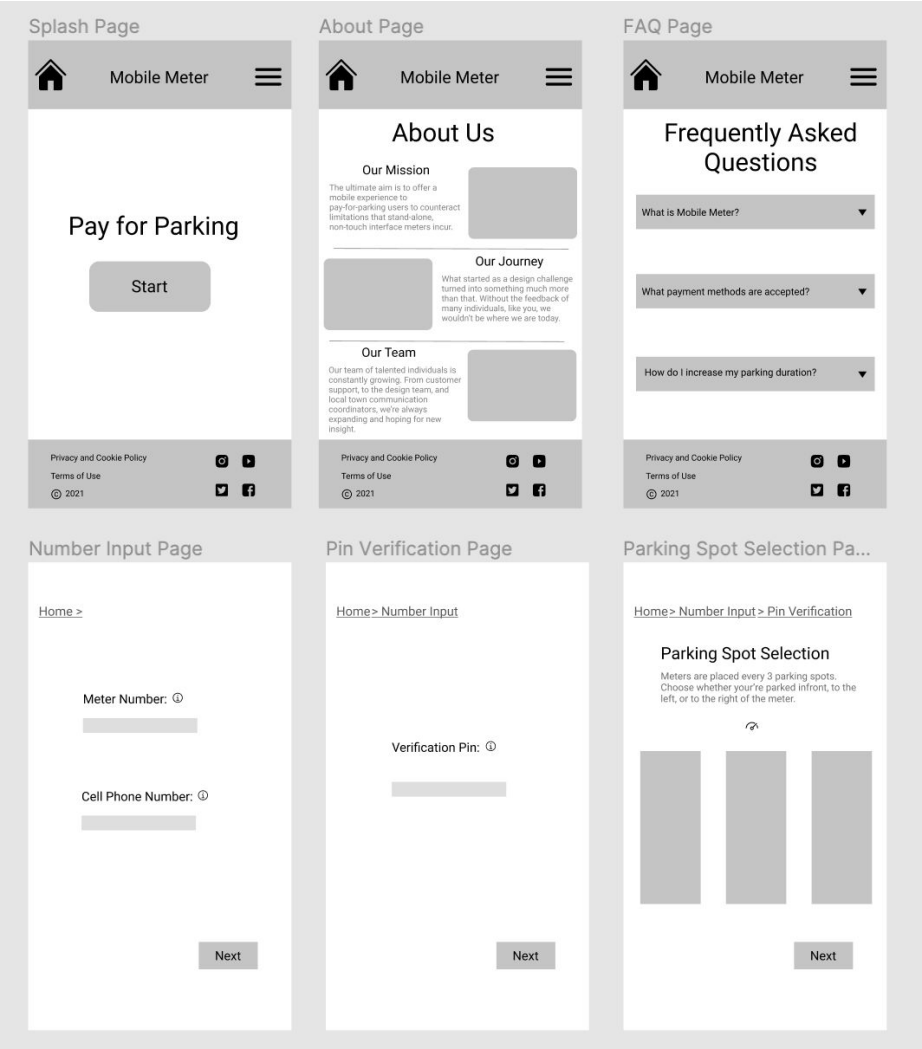


Task Two: Pay for Parking and Extend the Parking Duration

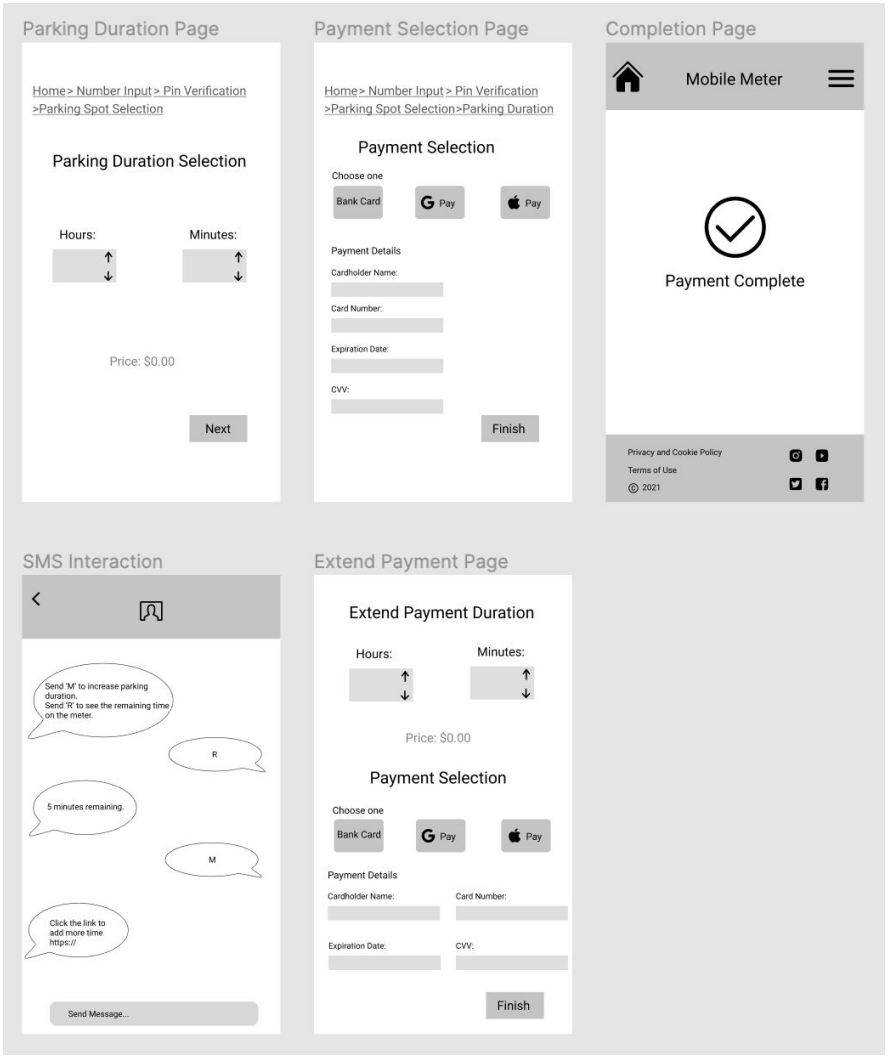


Wireframes

Wireframes


Splash Page
Mobile Meter
Pay for Parking
Start
Privacy and Cookie Policy
Terms of Use
© 2021
About Page
Mobile Meter
About Us
Our Mission
The ultimate aim is to offer a mobile experience to pay-for-parking users to counteract limitations that stand-alone, non-touch interface meters incur.
Our Journey
What started as a design challenge turned into something much more than that. Without the feedback of many individuals, like you, we wouldn't be where we are today.
Our Team
Our team of talented individuals is constantly growing. From customer support, to the design team, and local town communication coordinators, we're always expanding and hoping for new insight.
Privacy and Cookie Policy
Terms of Use
© 2021
FAQ Page
Mobile Meter
Frequently Asked Questions
What is Mobile Meter?
What payment methods are accepted?
How do I increase my parking duration?
Privacy and Cookie Policy
Terms of Use
© 2021
Number Input Page
Home >
Meter Number:
Cell Phone Number:
Next
Pin Verification Page
Home> Number Input
Verification Pin:
Next
Parking Spot Selection Pa...
Home> Number Input > Pin Verification
Parking Spot Selection
Meters are placed every 3 parking spots. Choose whether your're parked infront, to the left, or to the right of the meter.
Next

Wireframes


Parking Duration Page
Home> Number Input > Pin Verification
>Parking Spot Selection
Parking Duration Selection
Hours:
Minutes:
Price: $0.00
Next
Payment Selection Page
Home> Number Input > Pin Verification
>Parking Spot Selection>Parking Duration
Payment Selection
Choose one
Bank Card
Pay
Pay
Payment Details
Cardholder Name:
Card Number:
Expiration Date:
CVV:
Finish
Completion Page
Mobile Meter
Payment Complete
Privacy and Cookie Policy
Terms of Use
© 2021
SMS Interaction
Send 'M' to increase parking duration.
Send 'R' to see the remaining time on the meter.
R
5 minutes remaining.
M
Click the link to add more time https://
Send Message...
Extend Payment Page
Extend Payment Duration
Hours:
Minutes:
Price: $0.00
Payment Selection
Choose one
Bank Card
Pay
Pay
Payment Details
Cardholder Name:
Card Number:
Expiration Date:
CVV:
Finish

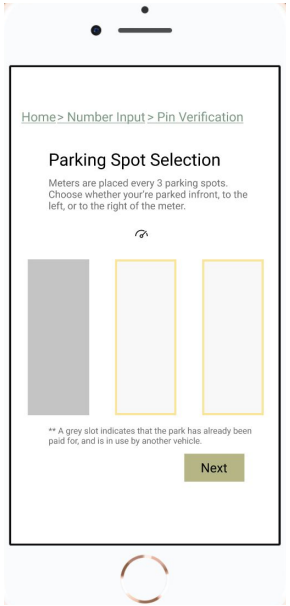
Demo

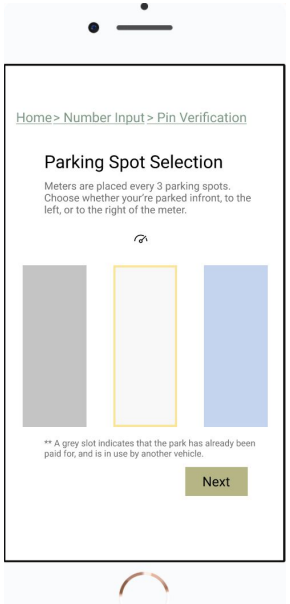
Clickable Prototype

https://www.figma.com/proto/5Sufg6LjThZvvKOURy2TNo/Interactive-Prototype?node-id=4%3A33&scaling=scale-down&page-id=0%3A1

Aside: Insights from User Testing

Design Before User Testing:

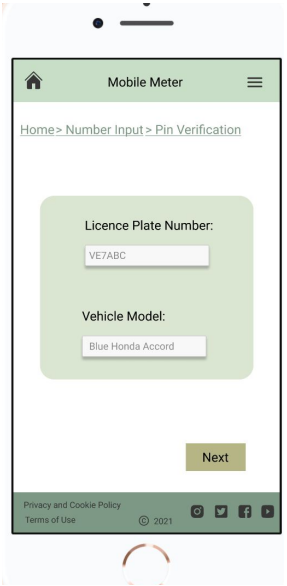




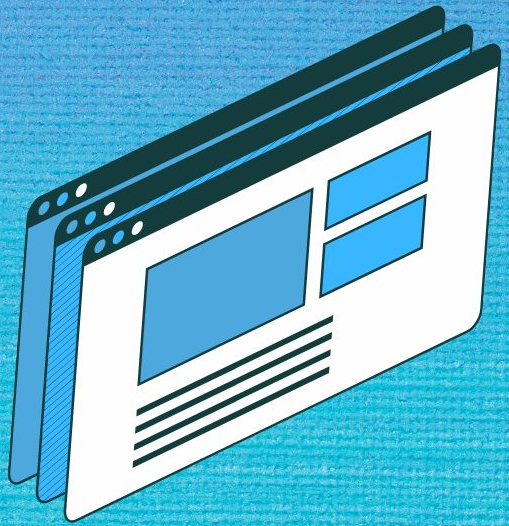
Feedback Given:

- ➔ Parking selection is a little confusing
  - ◆ Users were more familiar with seeing inputs for licence plate # or vehicle model

Design After User Testing:



UI Design



Style Guidelines

Colours

Typography

Title [Roboto, #000000] [36px]

Subheader [Roboto, #000000] [18px]

Body [Roboto, #828080] [12px]

Button [Roboto, #000000] [18px]

Buttons

Learning Outcomes

Learning Outcomes

Key Takeaway

Throughout this process, the need to consult users became evident, as well as the importance of refactoring designs.

- ➔ Nothing matters if users can't achieve their goals. I learnt that as a designer , there might be ideas that seem great, but if it's not intuitive to the user, it's not something that should be brought to fruition.

Future Improvements

If given the resources, I'd expand my user testing pool to gain additional feedback on how I can improve the design of my prototype.

Thank you!