

INFO8980 – Final Exam



1. UX Strategy

Description:

LOOP is an eco-friendly bike-sharing mobile application designed to revolutionize urban transportation by providing a convenient, cost-effective, and environmentally conscious solution. The app aims to make bike rentals user-friendly and accessible while promoting sustainability and reducing carbon footprints.

UX Objectives:

User-Centric Design:

Craft an intuitive and seamless experience that simplifies bike-sharing, catering to diverse user needs and preferences.

Inclusive Accessibility:

Ensure the app adheres to accessibility guidelines, providing equal usability for individuals with disabilities through high contrast, scalable text, and assistive technologies.

Optimized Efficiency:

Enable users to perform essential actions, such as bike reservations, route planning, and payments, quickly and effortlessly.

Engaging Experience:

Deliver visually appealing and interactive designs, leveraging dynamic maps, real-time updates, and engaging animations to maintain user retention and satisfaction.

Sustainability Focus:

Promote eco-friendly transportation by highlighting sustainable routes, carbon savings, and the environmental benefits of choosing LOOP over other modes of travel.

2. Prototyping

Interactive Prototype Overview:

The **LOOP** prototype is developed in Adobe XD, showcasing all key functionalities and interactions to simulate a realistic user experience. Advanced interactions and accessibility features were integrated to ensure inclusivity and usability.

Key Screens:

1. Onboarding and Registration:

- Intuitive onboarding process.
- Secure login and account creation with email verification.

2. Home Screen:

- Displays nearby bikes with real-time availability and pricing.
- Search functionality with filters for stations, bike features, and locations.

3. Trip Management:

- Interactive map with start and end location inputs.
- Real-time trip tracking and estimated arrival times.

4. Route Planning:

- Provides eco-friendly, scenic, and fastest route options.
- Displays estimated travel times and distances for each route.

5. Station Information:

- Real-time data on bike and dock availability.
- Integration with public transport stations for seamless transfers.

6. Payment and Cost Management:

- Subscription plans and top-up options.
- Secure payment methods with detailed transaction summaries.

Advanced Interactions:

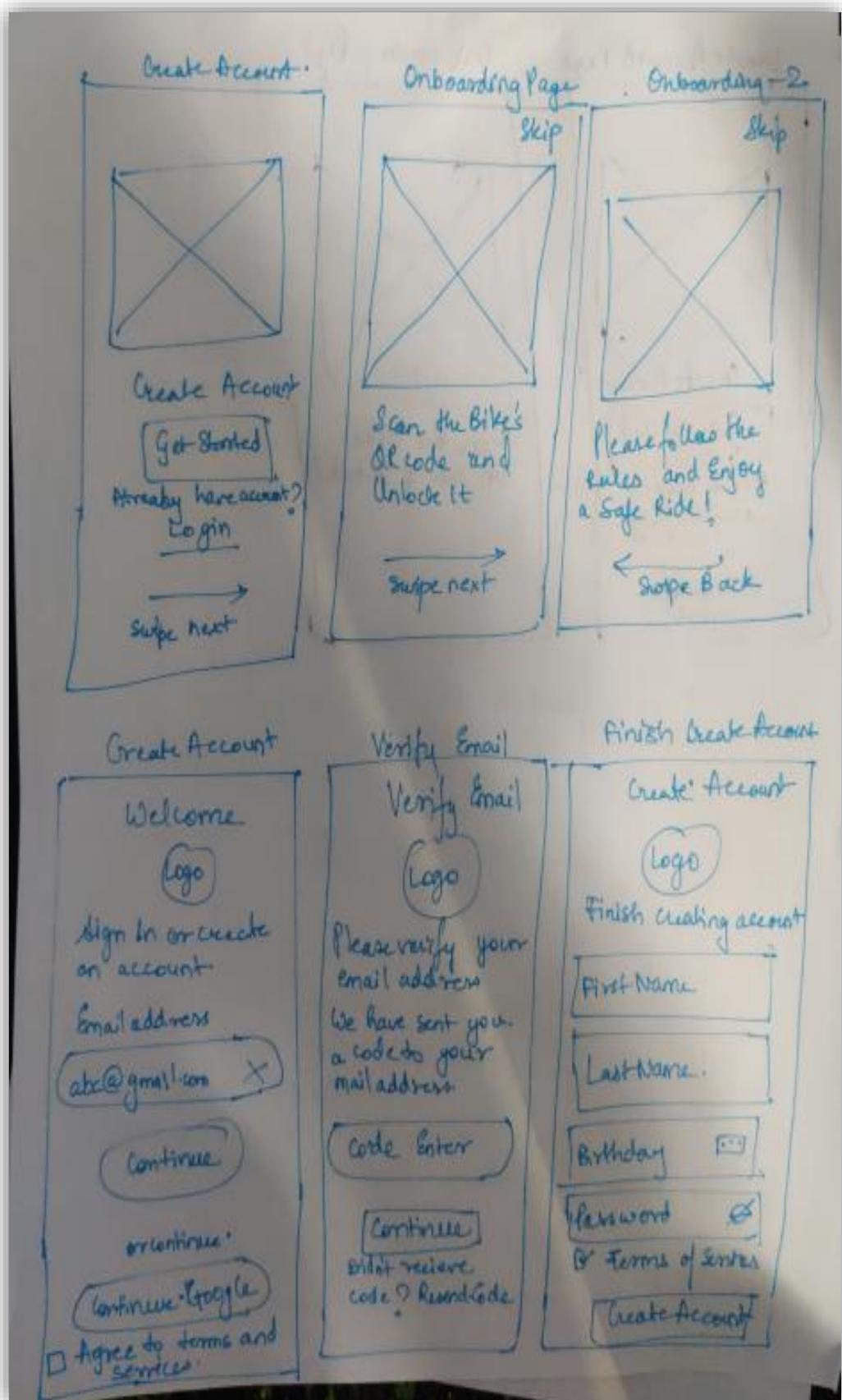
- QR code scanning for bike unlocking.
- Real-time updates for bike and dock availability.
- Animated transitions between screens for smooth navigation.

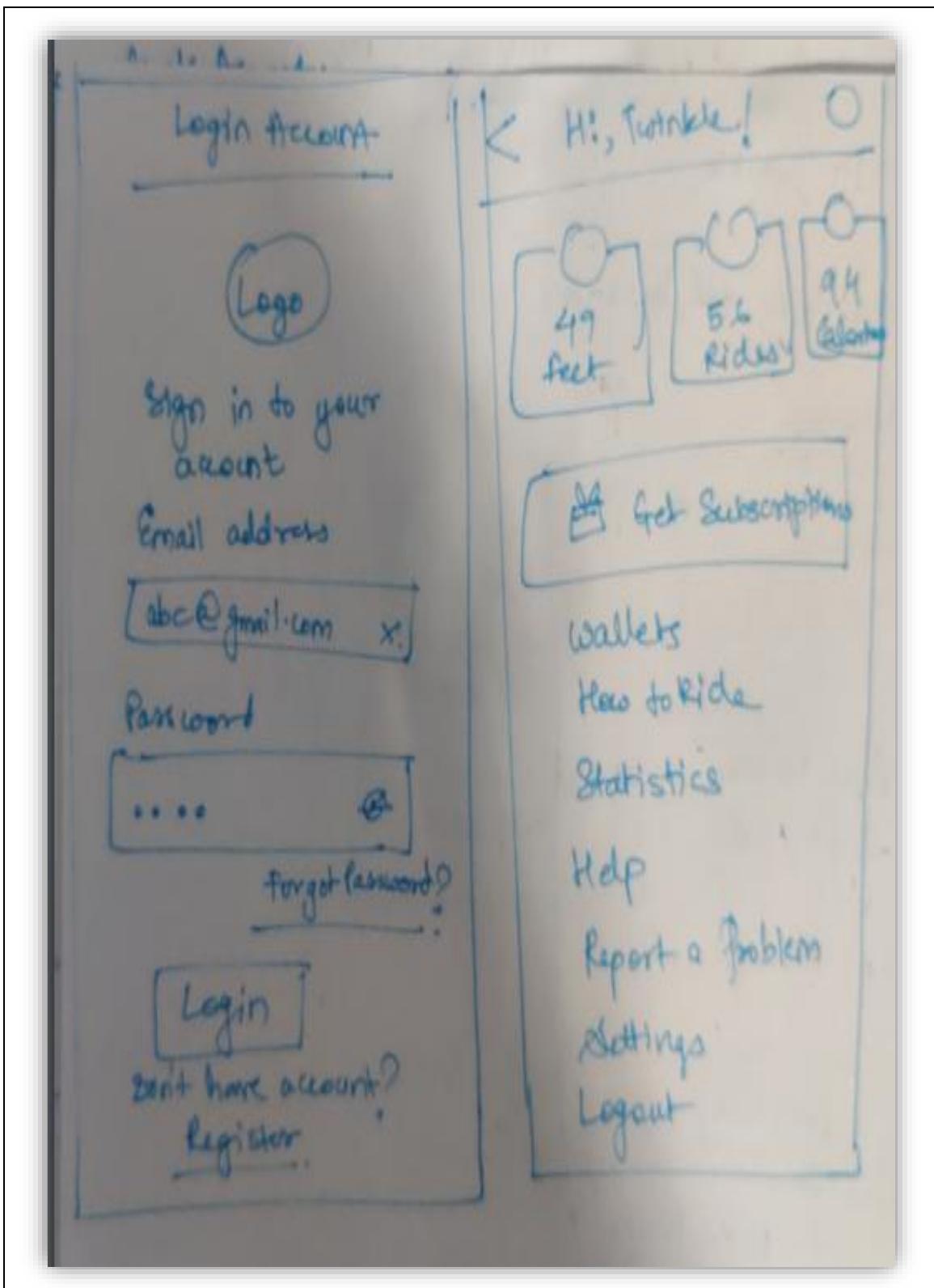
3. Sketches

Sketching Process:

Sketches served as the foundation for visualizing the app's design and functionality. Each sketch was annotated to provide clarity on:

- Key features like buttons and interactive elements.
- Accessibility considerations, including high contrast and large text sizes.
- Navigation flows between screens.
- Home Screen: Includes filters, bike availability, and booking options.
- Trip Management: Highlights route selection and trip tracking features.





My Wallet

My Wallet
Logo

Weekly Pass
£27.55

Purchase

Total Balance \$270.85

Payment >

Top up

Hi Twinkle!



Search By add, bus stops

Bike Nearby.



Bike Name

₹ 4.7

\$ 30 / Day

250 mtr

Lorem ipsum

Book Ride

Bike Name

\$ 100 / Day

600mtr

₹ 4.9

Book Ride

Bike Name

\$ 20 / Day

800 mtr

₹ 4-

Book Ride

Scan To Ride

≡

From Address

TO Address

Map
Image



Bike Name

Estimated
Time
30 min.

Estimated fee
\$25/day

Speed
25 km/hr

Scan To Ride

Trip Ended



Destination
Address

Map Image

Arrived In 0:18:36

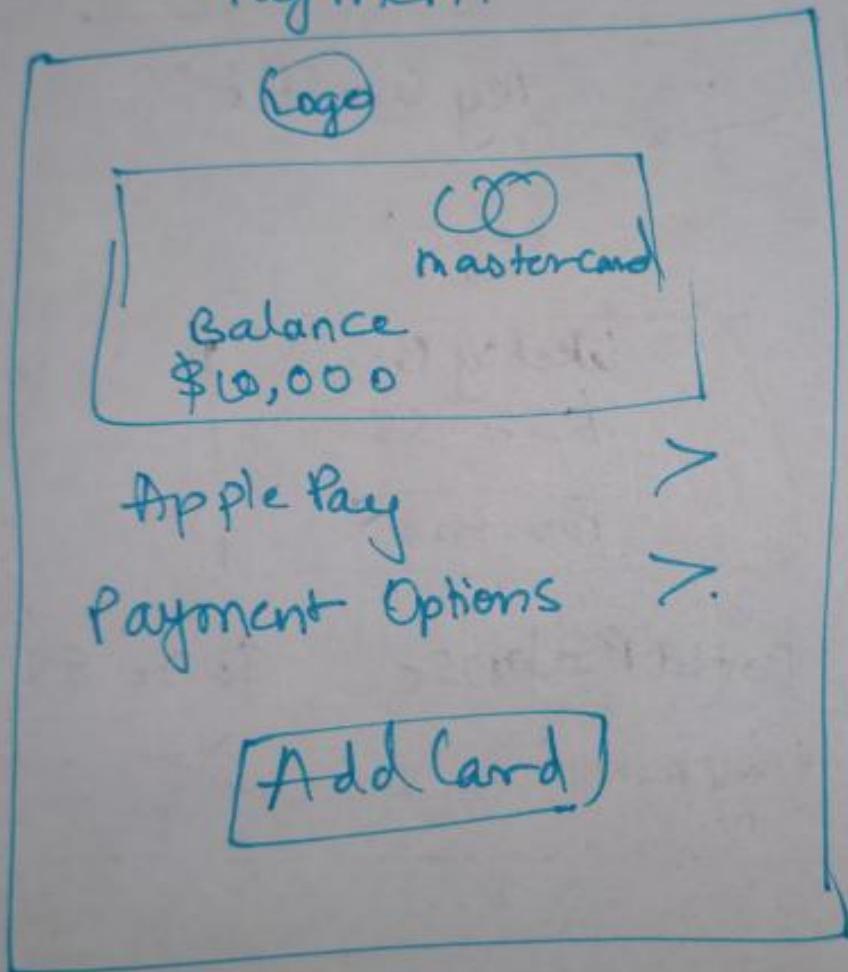
Trip Ended

From : Address

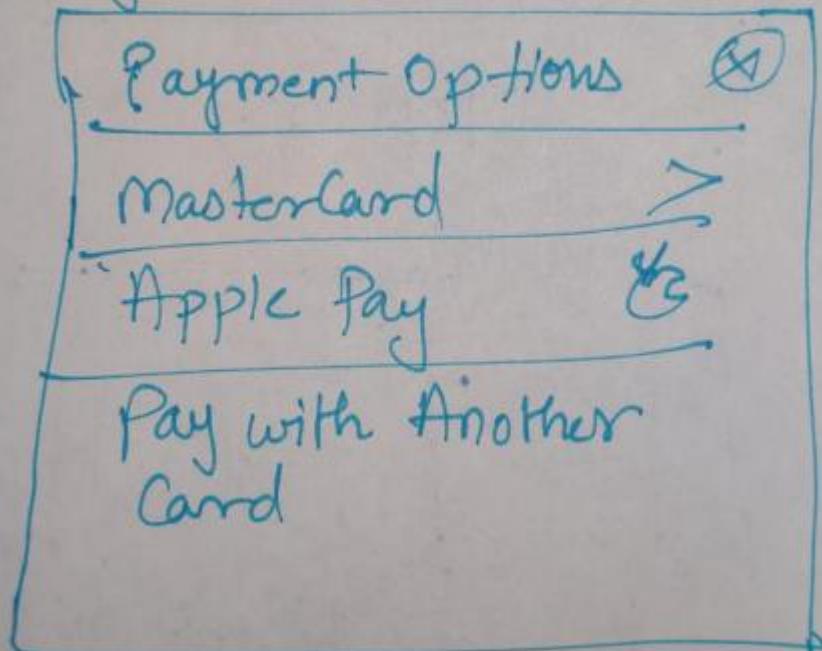
To : Destination

Receipt

Payment



Payment Options



<

Top up

(Logo)

\$5

\$10

\$25

\$50

Top up

Trip Started - I

<
Pickup address
Address name

Map
Image

Arriving In

0:30,35

Trip started.

- (o) From : Address
- (o) To : Address.

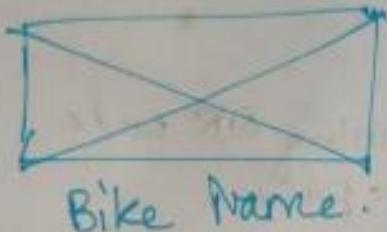
Change Destination

End Trip

payments

Your wallet

\$ 3000.86



Bike Name.

Bike Id

Pt Id Number

Location

Address ...

Price

\$ 28.00

Additional Fee

\$ 10.76

Total

\$ 36.00

Payment Method

Loop Wallet

..... 9786

Change Payment Method

Pay Now

< Choose A Plan.



We are flexible
Just the right plan
to plan your ride.

Monthly
\$ 25

for frequent users

Yearly
\$ 125

for Local Users

24-Hour Pass
\$ 10

For day trips under 30 mins

Pay

< My statistics

Logo

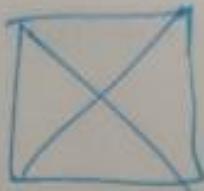
Duration
49 mins

Calories
452 cal

Distance
485 m

Carbon
6002

share



Payment successful
successfully paid
\$ Amt.

Payment methods

Transaction Id

Id Number
Date MM

Date

Type of Transaction CC

Charge \$ 25

Additional Fee \$ 0.25

Member Discount -\$ 5

Status Success

Total

\$ 22.75

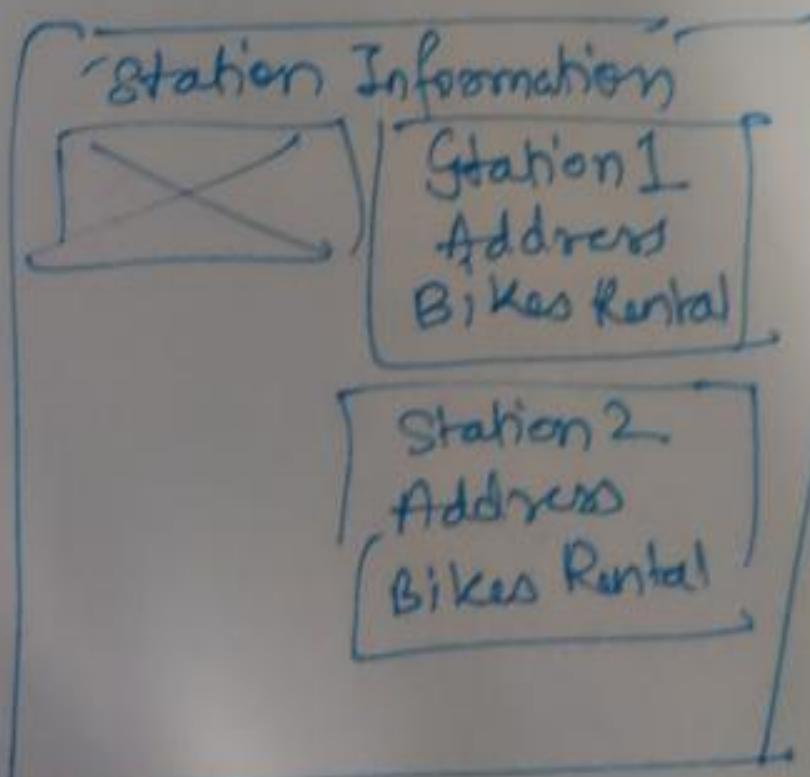
Trip Management

Search by Add, ...

Start Location

End Location

Map Images



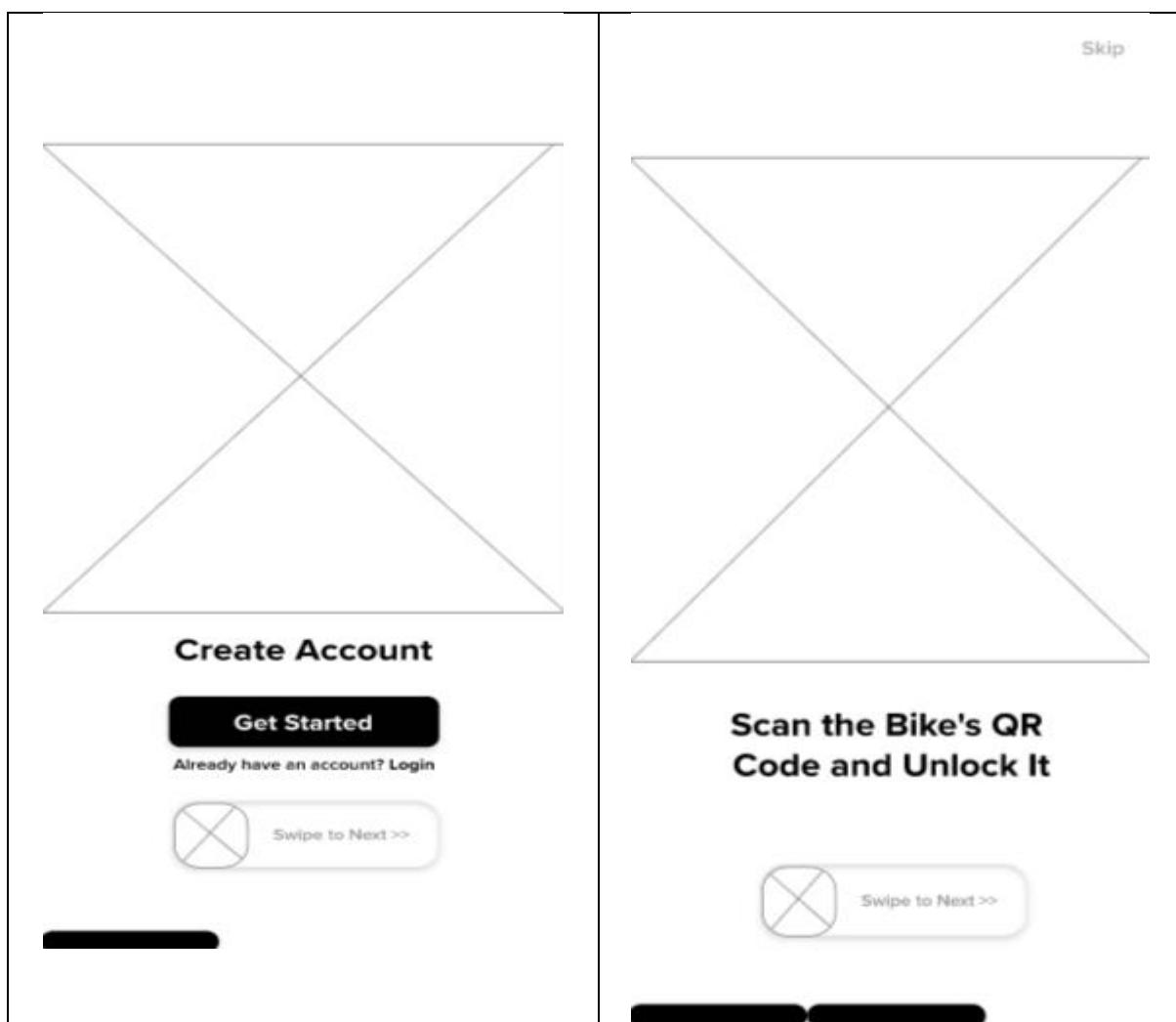
4. Wireframes

Wireframe Details:

Low-fidelity wireframes were created to outline the core layout and functionality of the app. These wireframes helped refine the design before moving to high-fidelity prototypes.

Key Wireframe Features:

- **Home Screen:** Displays bike availability and filters.
- **Payment Screen:** Includes top-up and payment method options.
- **Route Map:** Shows detailed paths with time and distance estimations.



Skip



**Please follow the Rules
and Enjoy a Safe Ride!**

<< Swipe Back 

Welcome



Sign in or create an account

Email address

my account@gmail.com 

Continue

or continue with

Continue with Google

By continuing you agree to Terms of Service and Privacy Policy

Verify Email



Please verify your
email address

We have sent you a code to
myaccount@gmail.com. Enter your code
below

Enter Code

Continue

[Didn't receive the code? Resend Code](#)

Verify Email



Please verify your
email address

We have sent you a code to
myaccount@gmail.com. Enter your code
below

AU7E5X



Continue

[Didn't receive the code? Resend Code](#)

Create Account



Finish creating account

First name

Last name

Birthday mm/dd/yyyy



Password



By continuing you agree to [Terms of Service](#) and [Privacy Policy](#)

Create account

Login Account



Sign in to your account

Email address

my account@gmail.com



Password



[Forgot Password?](#)

Login

[Don't have an account ? Register](#)

< Hi , Twinkle!

39 Feet

56 Rides

94 Carbon

 Get Subscriptions

 Wallets

 How to ride

 Statistics

 Help

 Report a problem

 Settings

 Logout

☰ Hi , Twinkle!

Search by Address, Stations, Bus stops

Bike Nearby 





Gazzelle MT 
\$ 25/Day
 250 mtr

Gazelle Mountain Bike (MT) is a high-performance bicycle designed for rugged terrains and off-road adventures

Book Ride




Ultra Rover Bike 
\$ 50/Day
 500 mtr 
Book Ride



Mills Pond Street, Waterloo , IN, Canada



High Court Lexington, Waterloo, ON, Canada

Map
Image



Gazzelle MT

445577448

Estimated Time
 30.00

Estimated fee
\$ 25/Day

Speed
25km/hr

Scan To Ride

Your Wallet

\$ 2,435.56



Gazzelle MT Bike

Bike ID 445577448

Location High Court

Price \$ 25.00

Additional Fee \$ 1.76

Total \$26.76

Payment Method



Loop Wallet

..... 9876

Change Payment Method

Pay Now

<

 Destination
High Court Lexington, Waterloo, ON, Canada

Map Image

Arrived in 00:15:35

Trip Ended, you'll arrived at your destination

 Mills Pond Street, Waterloo , ON, Canada
Pickup point

 High Court Lexington, Waterloo, Canada
Destination

Receipt

< SCAN QR CODE



Enter Bike ID

Unlock



Mills Pond Street, Waterloo , IN, Canada



High Court Lexington, Waterloo, ON, Canada

**Map
Image**



Gazzelle MT

445577448

Estimated Time

30.00

Estimated fee
\$ 25/Day

Speed
25km/hr

Start Trip



Pick up point

Mills Pond Street, Waterloo , IN, Canada

**Map
Image**

Arriving in

00:15:35

Trip Started , you will reach in approx 15 mins



Mills Pond Street, Waterloo, Canada

Pickup point



High Court Lexington, Waterloo, Canada

Destination

Change Destination

End Trip

< My Wallet

Logo

Weekly Pass
\$ 27.98

Purchase

Total Balance \$220.76

Payment >

Top Up

Payment

Logo


mastercard

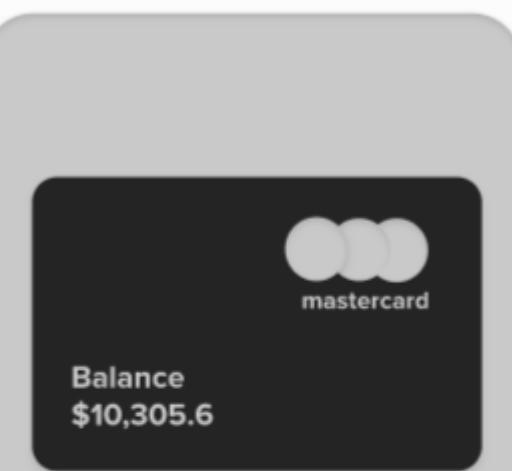
Balance
\$10,305.6

Apple Pay Apple Pay >

Payment Options >

Add Card

< Payment Options



Payment Options ×

MasterCard

Apple Pay 

Pay with Another Card

< Top Up

Logo



Top Up

Logo

Duration
49 mins

Calories
452 cal

Distance
7644 m

Carbon
60 oz

Share

<

Payment Successful

Successfully paid \$21.76

Payment methods

Transaction ID	4938 4537 2747
Date	1 Sep 2024
Type of Transaction	Credit Card
Charge	\$25
Additional Fee	\$1.76
Member Discount	-\$5.00
Status	Success
Total	\$21.76

Trip management

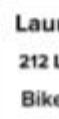


Search by Address, Stations, Bus stops

Start Location End Location

Map Image

Station Information

	Conestoga Station 212 Conestoga mall, WL Bike Rentals
	Laurier Station 212 Laurier College,WL Bike Rentals

Choose A Plan



We're Flexible!

Just the right plan to fit your style of riding.

Monthly \$ 25 For Frequent Users	Annual \$ 125 For Local Users
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24-Hour Pass

\$ 10

For day trips under 30 mins

Pay

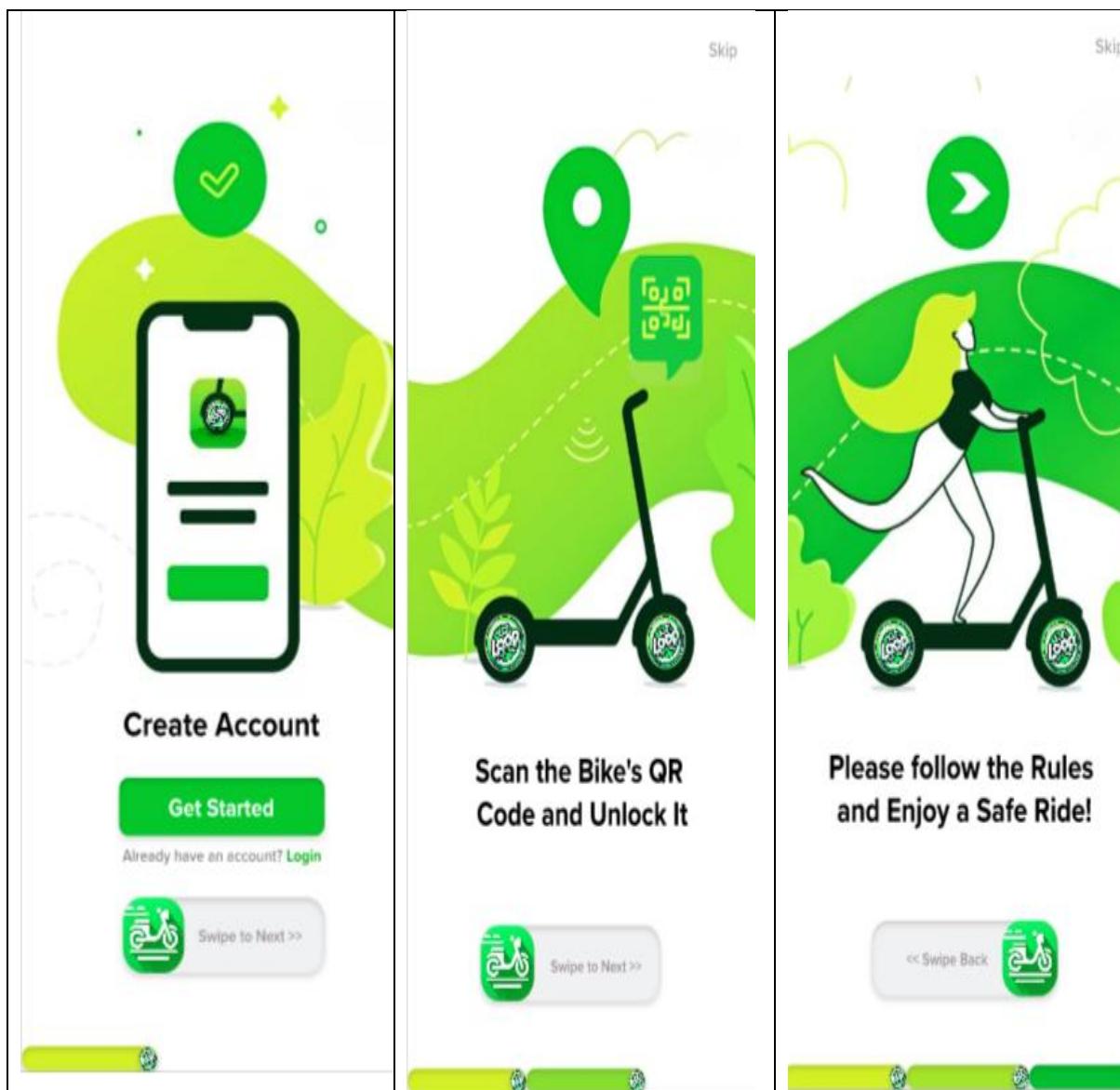
5. Interactive Prototypes

Features Demonstrated:

1. Smooth navigation between app screens.
2. Real-time updates for bike and dock availability.
3. Advanced functionalities like QR code scanning and dynamic trip tracking.
4. Accessibility features, including keyboard navigation and screen reader compatibility.

Prototype Highlights:

- Fully functional navigation.
- Dynamic updates on trip progress and station availability.
- Engaging animations for transitions between screens.



Welcome



Sign in or create an account

Email address

 X

Continue

or continue with

 Continue with Google

By continuing you agree to Terms of Service and Privacy Policy

Verify Email



Please verify your email address

We have sent you a code to myaccount@gmail.com. Enter your code below

 X

Continue

Didn't receive the code? [Resend Code](#)

Verify Email



Please verify your email address

We have sent you a code to myaccount@gmail.com. Enter your code below

 X

Continue

Didn't receive the code? [Resend Code](#)



Create Account



Finish creating account

First name

Last name

Birthday mm/dd/yyyy



Password



By continuing you agree to [Terms of Service](#) and [Privacy Policy](#)

Create account

Login Account



Sign in to your account

Email address

my account@gmail.com



Password



[Forgot Password?](#)

Login

Don't have an account ? [Register](#)

< Hi , Twinkle!



39

Feet



56

Rides



94

Carbon



Get Subscriptions



Wallets



How to ride



Statistics



Help



Report a problem



Settings



Logout



Hi , Twinkle!



Search by Address, Stations, Bus stops

Bike Nearby



Gazzelle MT

4.7

250 mtr

Gazelle Mountain Bike (MT) is a high-performance bicycle designed for rugged terrains and off-road adventures

Book Ride

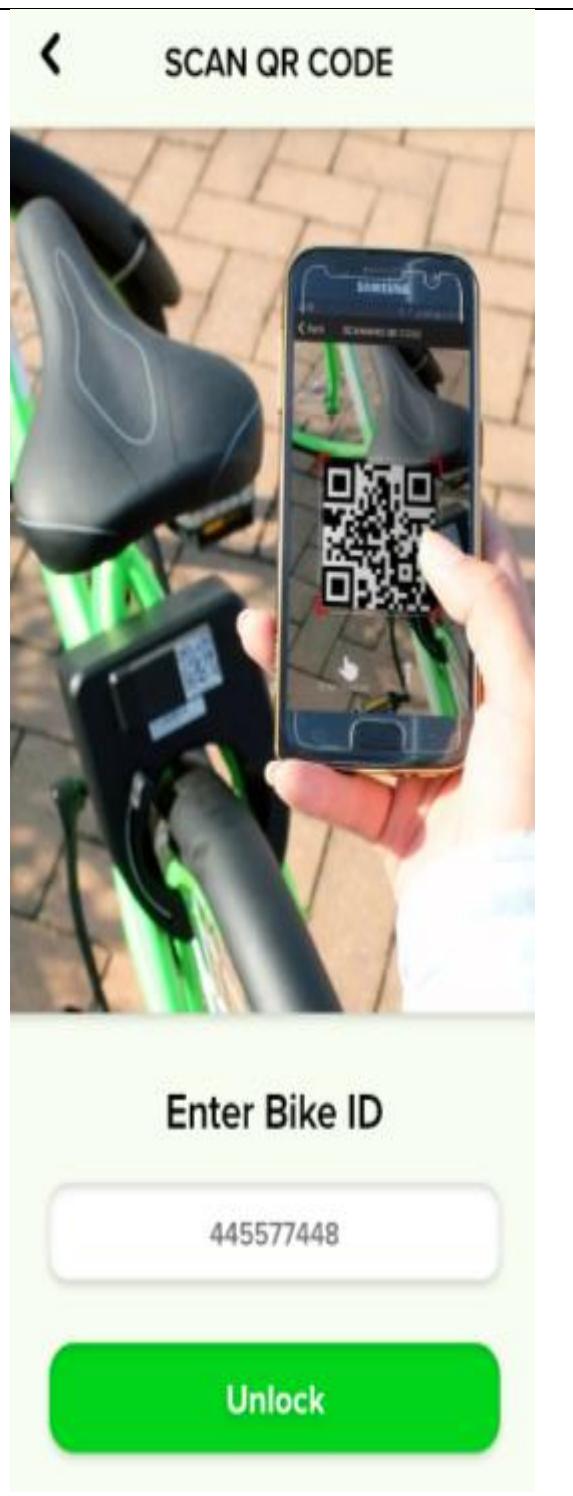
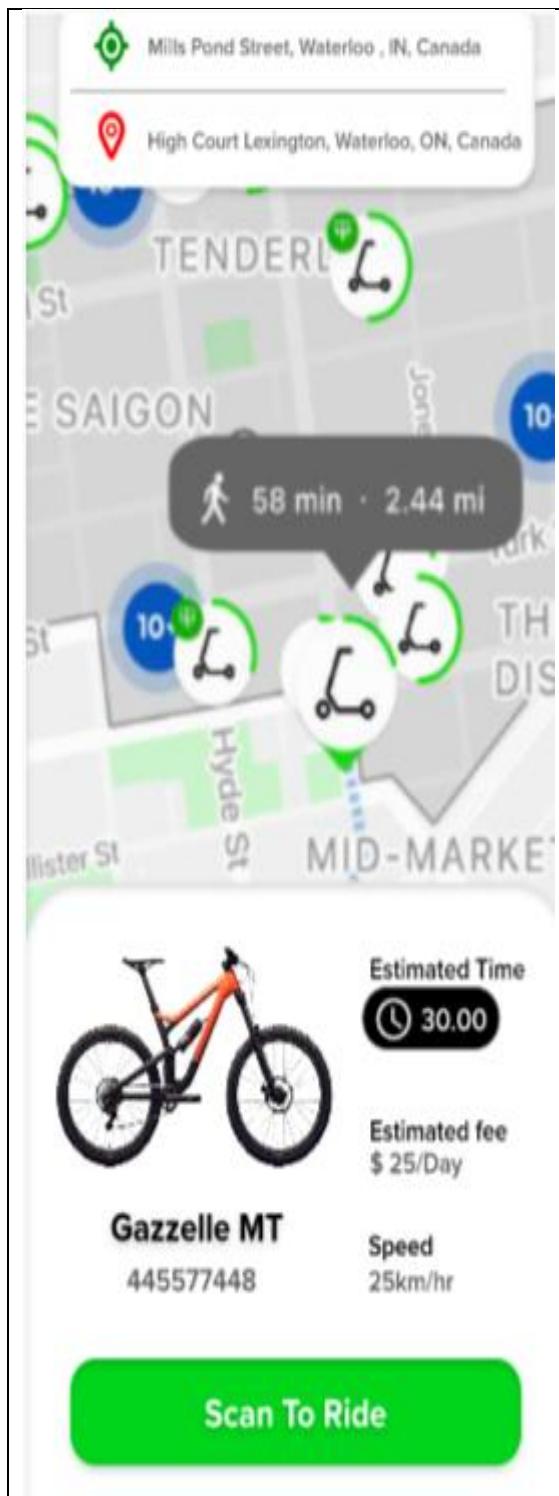


Ultra Rover Bike

\$ 50/Day

500 mtr 4.9

Book Ride



The image displays two side-by-side screenshots of a mobile application interface, likely for bike rentals.

Screenshot 1 (Left):

- Top Bar:** Shows the pickup point as "Mills Pond Street, Waterloo, ON, Canada" (green location icon) and the destination as "High Court Lexington, Waterloo, ON, Canada" (red location icon).
- Map:** A street map showing the route from the pickup point to the destination. The route is highlighted in blue. A callout box indicates a walking distance of "58 min · 2.44 mi".
- Bike Details:**
 - Bike Model:** Gazzelle MT
 - Phone Number:** 445577448
 - Estimated Time:** 30.00 (with a clock icon)
 - Estimated fee:** \$ 25/Day
 - Speed:** 25km/hr
- Buttons:** A large green "Start Trip" button at the bottom.

Screenshot 2 (Right):

- Top Bar:** Shows the pickup point as "Mills Pond Street, Waterloo, ON, Canada" (green location icon) and the destination as "High Court Lexington, Waterloo, ON, Canada" (red location icon).
- Map:** A street map showing the current location (green circle with a lock icon) and the destination (red pin). The route is highlighted in blue. A callout box indicates a time of "15 min".
- Text:** "Arriving in 00:15:35".
- Status:** "Trip Started, you will reach in approx 15 mins".
- Pickup Point:** Mills Pond Street, Waterloo, Canada (green location icon). Subtext: "Pickup point".
- Destination:** High Court Lexington, Waterloo, Canada (red location icon). Subtext: "Destination".
- Buttons:** Two large green buttons: "Change Destination" and "End Trip".

Destination
High Court Lexington, Waterloo, ON, Canada

18th St
POTRERO HILL
irberg Stan General...
15 min

Arrived in 00:15:35

Trip Ended, you'll arrived at your destination

Mills Pond Street, Waterloo , ON, Canada
Pickup point

High Court Lexington, Waterloo, Canada
Destination

Receipt

Your Wallet
\$ 2,435.56

Gazzelle MT Bike

Bike ID	445577448
Location	High Court
Price	\$ 25.00
Additional Fee	\$ 1.76
Total	\$26.76

Payment Method

Loop Wallet
..... 9876

[Change Payment Method](#)

Pay Now

Choose A Plan



We're Flexible!

Just the right plan to fit your style of riding.

Monthly \$ 25 For Frequent Users	Annual \$ 125 For Local Users
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24-Hour Pass
\$ 10
For day trips under 30 mins

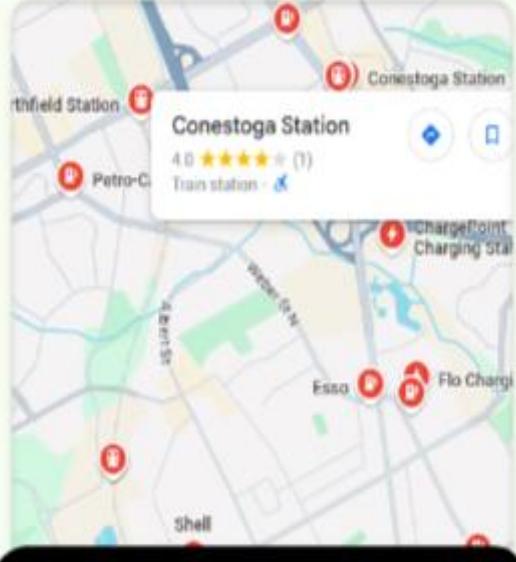
Pay

Trip management



Search by Address, Stations, Bus stops

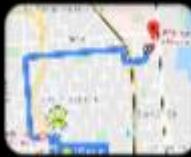
Start Location End Location

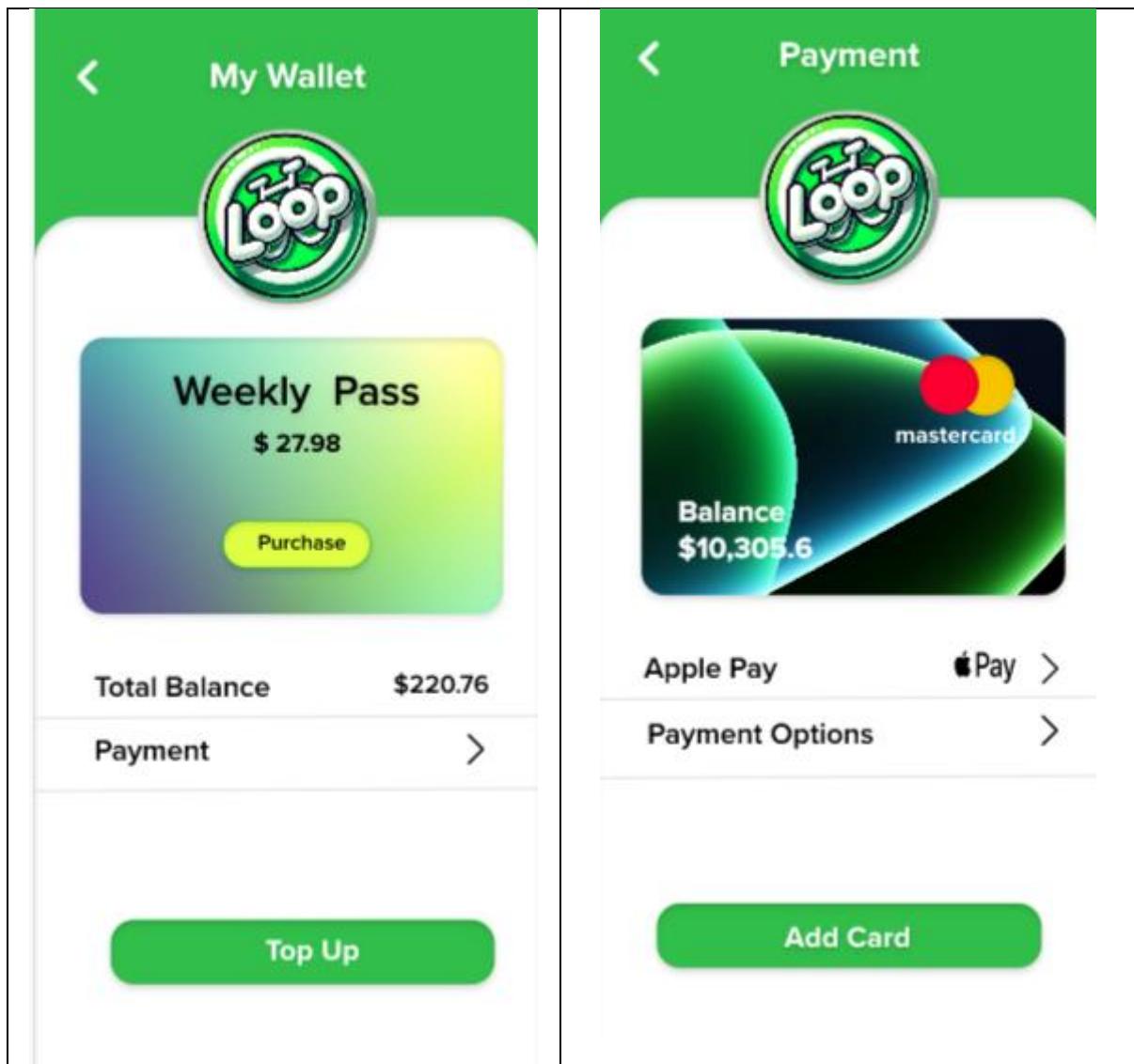


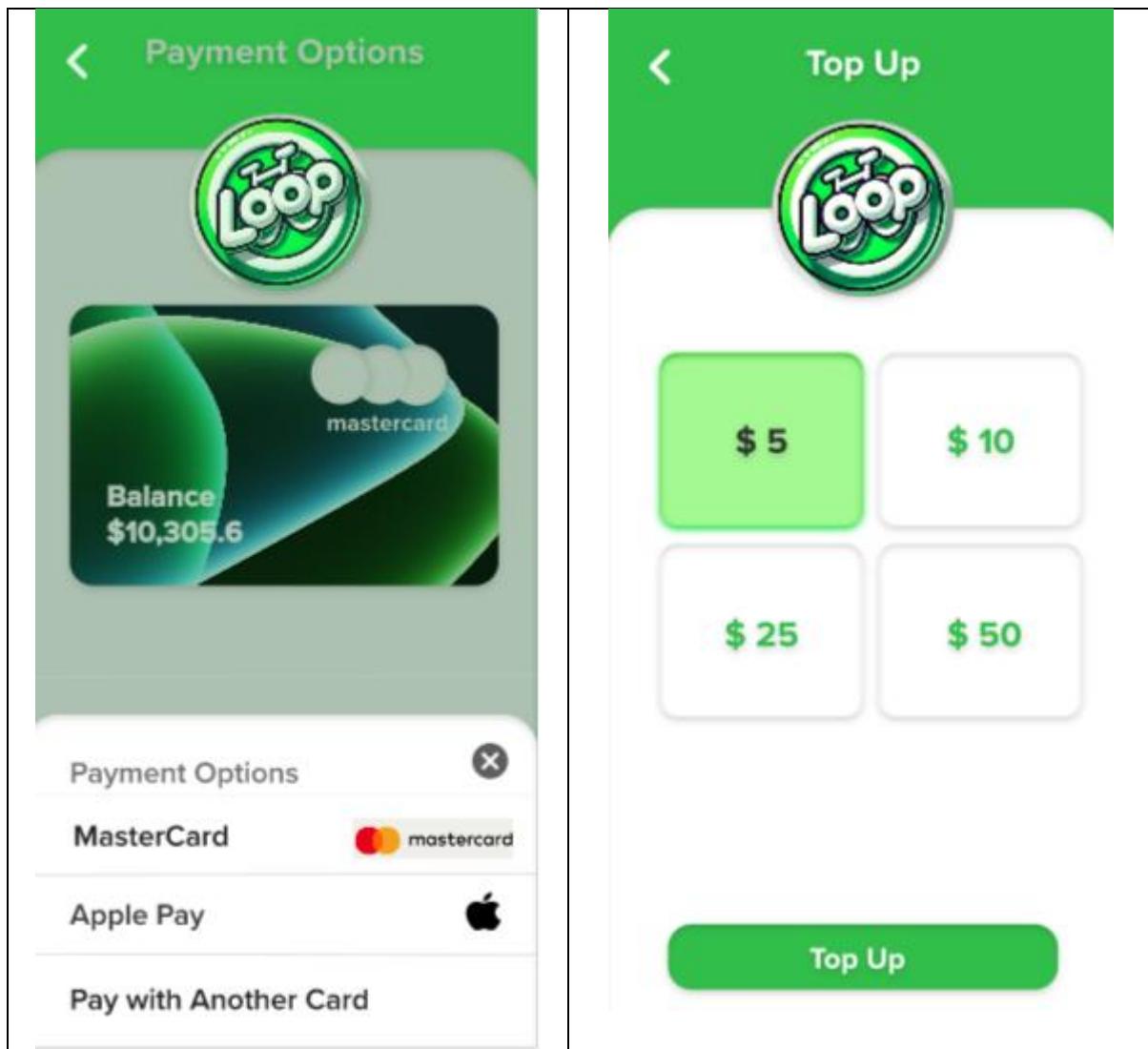
Map showing locations such as Conestoga Station, Petro-C, ChargePoint Charging Sta, Esso, Flo Charg, Shell, and Laurier Station.

Conestoga Station
4.0 ★★★★ (1)
Train station ·

Station Information

	Conestoga Station 212 Conestoga mall, WL Bike Rentals
	Laurier Station 212 Laurier College,WL Bike Rentals







Payment Successful
Successfully paid \$21.76

Payment methods

Transaction ID	4938 4537 2747
Date	1 Sep 2024
Type of Transaction	Credit Card
Charge	\$25
Additional Fee	\$1.76
Member Discount	-\$5.00
Status	Success
Total	\$21.76

Share



Duration
49 mins

Calories
452 cal

Distance
7644 m

Carbon
60 oz

Share

6. Addressed Design Challenges

1. Trip Management

Challenges:

- Enable users to start and end trips seamlessly.
- Provide real-time tracking and notifications for trip events, such as start, end, and overage fees.

Solutions:

- **QR Code Scanning:** Implemented a **QR Code Scanner** for unlocking bikes. Users can also manually enter a **Bike ID** as a fallback option, ensuring flexibility and accessibility.
- **Real-Time Notifications:** Users receive visual updates on the trip status, such as:
 - **Trip Started:** Displayed as soon as the QR code is scanned, showing the route and estimated time to destination.
 - **Overage Fees and Costs:** Transparent cost breakdown displayed in the **Trip Summary** and **Receipt Page** to notify users of extra charges incurred during the trip.
- **Trip Progress:** Real-time tracking on a dynamic map, showing time, distance, and route navigation, with updates throughout the journey.

2. Route Planning

Challenges:

- Provide diverse route options, such as eco-friendly and scenic paths, alongside the fastest route.
- Deliver real-time updates on traffic conditions and travel times.

Solutions:

- **Route Options:** Users can select from multiple route types (eco-friendly, scenic, or fastest), displayed on an interactive map.
- **Real-Time Updates:** Routes update dynamically based on real-time traffic data, ensuring accurate **Estimated Arrival Times** (ETA).
- **Distance and Duration:** The route map provides clear visual indicators of travel distance and time, helping users plan effectively.
- **Tourist-Friendly:** Scenic routes are highlighted to promote local sightseeing and encourage eco-tourism.

3. Station Information

Challenges:

- Provide users with real-time data on bike and dock availability.
- Integrate with public transportation to enhance accessibility.

Solutions:

- **Station Availability:** Each station's card displays:
 - The number of available bikes and free docks.
 - Visual indicators (e.g. icons or color-coded markers) to show station status briefly.
- **Integration with Public Transport:** Stations near subway or bus stops are highlighted with transport icons, ensuring seamless multimodal connectivity.
- **Station Details:** Users can view station-specific information, including addresses and nearby landmarks, on the **Station Information Screen**.

4. Payment and Cost Management

Challenges:

- Offer flexible payment options and transparent cost breakdowns.
- Introduce subscription plans and discounts for frequent users.

Solutions:

- **Subscription Plans:** Users can purchase weekly or monthly passes (e.g., **Weekly Pass for \$27.98**) directly from the **Wallet Screen**.
- **Transparent Costs:** The **Payment Summary Page** clearly displays:
 - Base cost, additional fees, discounts, and total payment.
- **Multiple Payment Options:** The **Payment Screen** supports various methods, including:
 - Credit/Debit Cards (e.g., MasterCard).
 - Digital Wallets (e.g., Apple Pay, Loop Wallet).
 - Flexible Top-Up Options: Users can add funds in preset amounts (\$5, \$10, etc.).
- **Transaction History:** Users can access receipts with complete transaction details, ensuring transparency and trust.

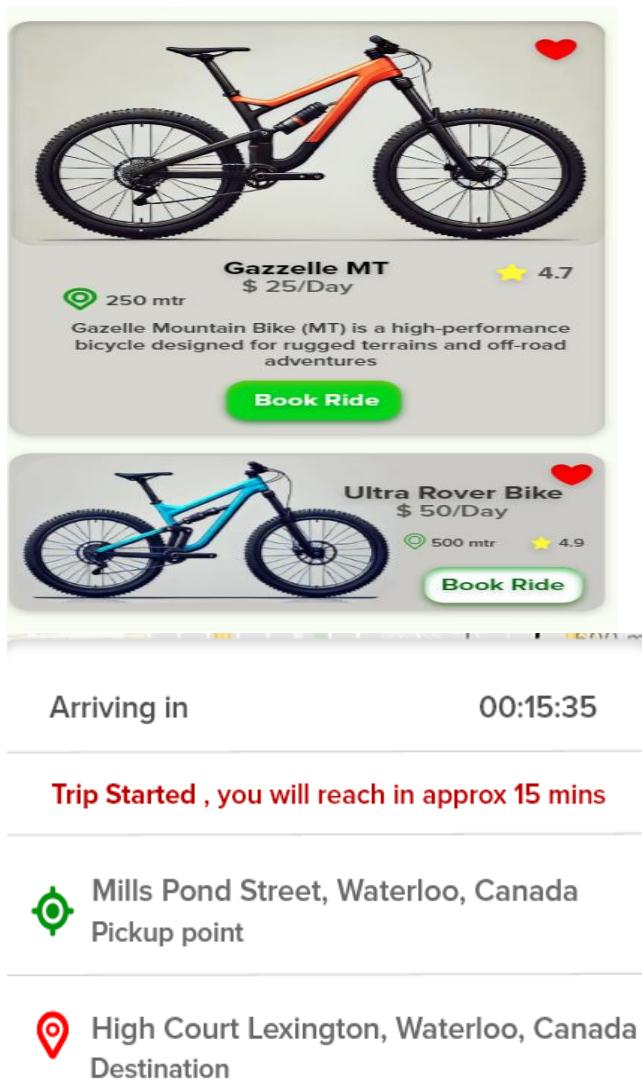
7. Design Analysis

Usability Heuristics Applied:

- **Visibility of System Status:**
 - Real-time updates on trip progress and notifications.
- **Consistency and Standards:**
 - Uniform design elements such as buttons and icons across screens.
- **Error Prevention:**
 - Confirmation dialogs before critical actions, such as payments.

UI Patterns Incorporated:

- Card-based layouts for bike and station details.
- Floating action buttons for quick actions like booking.
- Sticky headers for consistent navigation.



Payment Method

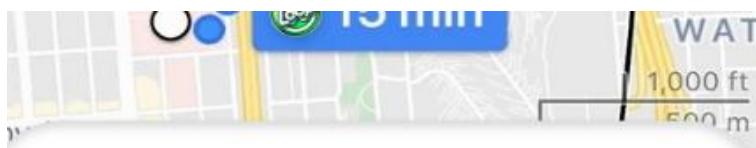


Loop Wallet

..... 9876

Change Payment Method

Pay Now



Arrived in

00:15:35

Trip Ended, you'll arrived at your destination



Mills Pond Street, Waterloo , ON, Canada

Pickup point



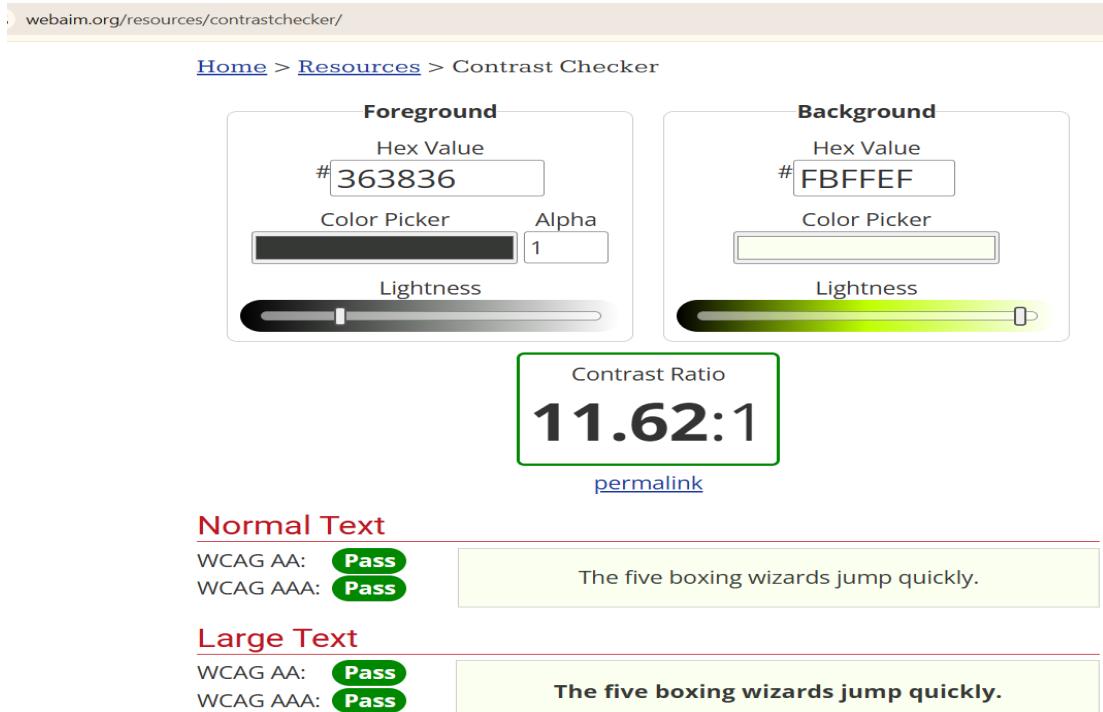
High Court Lexington, Waterloo, Canada

Destination

8. Accessibility

Accessibility Features:

1. **High Contrast:** Ensures readability for users with visual impairments.



2. **Adjustable Text Size:** Allows users to customize text size for better visibility.

Bike ID 445577448

Location High Court

Price \$ 25.00

Additional Fee \$ 1.76

Total \$26.76

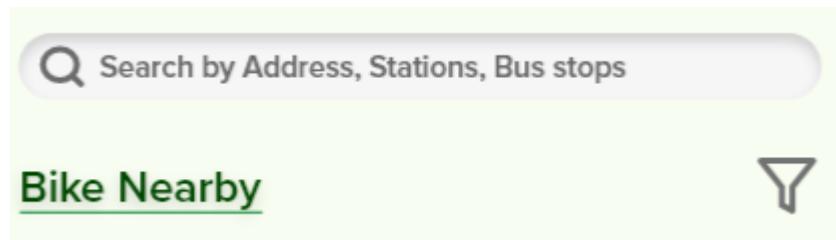
3. **Keyboard Navigation:** Ensures compatibility with keyboard-only interactions.

4. **Alt Text:** Provides descriptive text for all icons and images.

Home Screen (Bike Nearby Section)

- **Icons:** Alt text for filter and search icons, e.g.:

- Search Icon: "Search for bikes, addresses, or stations"
- Filter Icon: "Filter available bikes by features"

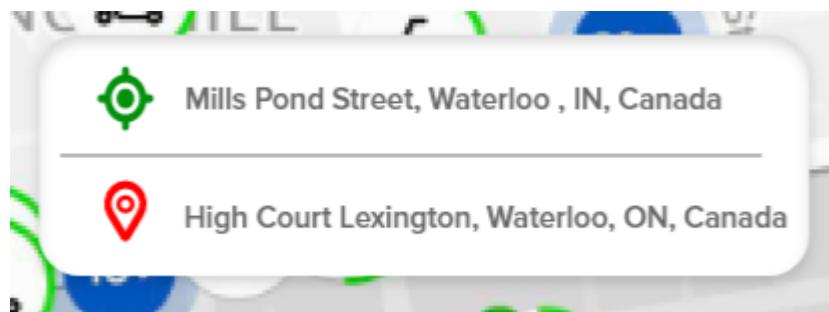


- **Images:** Descriptions for bike images:
 - "Gazzelle MT Bike, 250 meters away, \$25/day, rated 4.7 stars"



Trip Management (Map Screen)

- **Map Elements:** Alt text for interactive map points:
 - Start Location Pin: "Your starting location - Mills Pond Street"
 - End Location Pin: "Your destination - High Court Lexington"



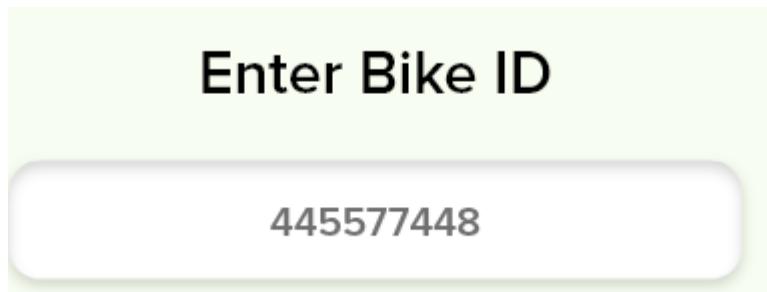
QR Code Screen

- **QR Scanner Image:** Provide a description for the camera interface:
 - "Camera view with QR code scanner frame"



- **Input Field:** Label for the manual ID entry field:

- "Enter Bike ID manually"



Payment and Wallet Pages

- **Icons and Buttons:** Alt text for payment options and wallet features:

- "Payment method: Loop Wallet ending in 9876"
 - "Top-Up button to add funds to your wallet"



- **Subscription Images:** Provide descriptions for subscription plans:

- "Weekly Pass for \$27.98"



Summary and Receipt Pages

- **Icons:** Alt text for status badges:
 - "Payment successful icon, green checkmark badge"

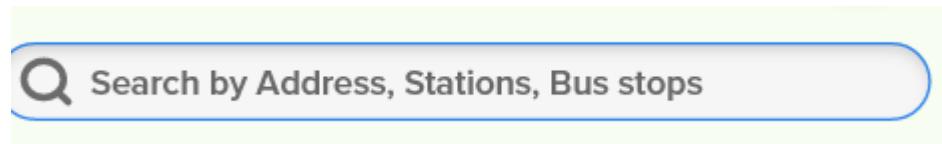


- **Text Elements:** Alt text for transaction summaries:
 - "Transaction ID 4938 4537 2747, paid via credit card on 1 Sep 2024"

5. Screen Reader Support: Fully compatible with voiceover and screen reader tools.

Example: Buttons: "Start Trip" instead of "Click Here."

Input fields: Label like "Enter Bike ID" or "Search Address."

An input field with a light green background and a white rounded rectangle inside. The text "Enter Bike ID" is at the top, and the value "445577448" is entered into the field.

Examples:

- Payment screen with bold, legible text.
- Navigation buttons with clear and descriptive labels.