WeBike Product Requirement Document

March 9, 2020

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1. Introduction

Purpose

This document describes the software functional requirements and launching plans for the mobile app WeBike at MVP stage. This document is intended to be used by members of the project team that will implement and verify the correct functioning of the app, as well as measure the success of its implementation.

Product Scope

WeBike is a bike-sharing platform, devoting to provides the most suitable way of travel for medium travel distance (1km ~ 5km). The platform is functioned by both hardware and software. The hardware contains bikes with a smart locking system, and software is the mobile app that controls the smart locking system. With WeBike mobile app, users may find nearby bikes, scan QR code to unlock a bike, make payments and start a ride.
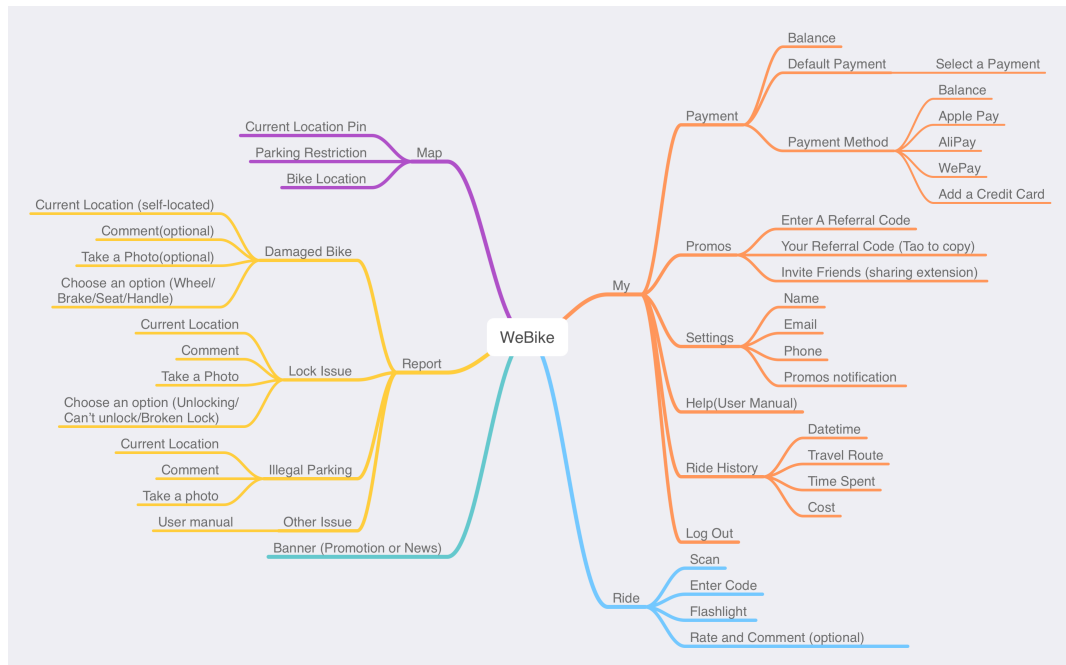
The vision of WeBike is to offer people an affordable, sustainable and convenient means of transportation.

The initial launching market for WeBike MVP is only in Singapore. More markets may be expanded in the future.

Operating Environment

According to Statista, in 2019, Apple takes 40.73% of the mobile vendor market share. WeBike MVP will be developed for iOS platforms and shall be able to operate on mobile devices with iOS 10 and higher. Android and other versions will be developed after the initial launch with early feedbacks.

2. Features

WeBike

Map
- Current Location Pin
- Parking Restriction
- Bike Location

Report
- Damaged Bike
  - Current Location (self-located)
  - Comment(optional)
  - Take a Photo(optional)
  - Choose an option (Wheel/Brake/Seat/Handle)
- Lock Issue
  - Current Location
  - Comment
  - Take a Photo
  - Choose an option (Unlocking/Can't unlock/Broken Lock)
- Illegal Parking
  - Current Location
  - Comment
  - Take a photo
- Other Issue
  - User manual

Banner (Promotion or News)

My
- Payment
  - Balance
  - Default Payment
    - Select a Payment
  - Payment Method
    - Balance
    - Apple Pay
    - AliPay
    - WePay
    - Add a Credit Card
- Promos
  - Enter A Referral Code
  - Your Referral Code (Tao to copy)
  - Invite Friends (sharing extension)
- Settings
  - Name
  - Email
  - Phone
  - Promos notification
- Help(User Manual)
- Ride History
  - Datetime
  - Travel Route
  - Time Spent
  - Cost
- Log Out

Ride
- Scan
- Enter Code
- Flashlight
- Rate and Comment (optional)

Feature	Priority	Description	Purpose
Map.Current Location	High	Access current location	1. Locate nearby bikes 2. Locate Issue reported 3. Track travel route
Map.Parking Restriction	Medium	Display no-bike and illegal parking area with red filled	1. Inform users with right riding and parking areas 2. Give instruction for reporting illegal parking
Map.Bike Location	High	Display bikes' location	1. Help users find a bike 2. Inform users the amount and distribution of bikes
My.Payment	High	Show current balance and payment methods. Enable adding money and new payment methods (4 payment methods)	1. Inform users with current balance 2. For users to add money and continue riding 3. Satisfy users with different paying habits
My.Promos	Medium	Share a referral code to a friend to get $5 in balance for both	Help increase users and expand the market
My.Ride History	Medium	Show date/time, total cost, time spent and travel route for previous rides	1. Provide users with previous travel information 2. Help track records if users report an issue
My.Setting	Low	Show and enable editing user information	1. Keep users' record 2. Let user edit information 3. Send news and promos for marketing
My.Help	Low	Show user manuals	Inform users with riding instructions, agreements and conditions
My.Log Out	Low	Enable Log Out	1. Let user log out 2. Let user switch an account
Ride.Scan	High	Scan the QR code to unlock bikes	Let user unlock bikes
Ride.Enter Code	High	Enable users to enter the bike number to unlock	Provide an alternative way of unlocking bikes if the QR code is vandalized or does not work
Ride.Flashlight	Medium	Enable users to light up and scan the QR Code or read the bike number	Enable users to scan the QR code and read the bike number under weak light

| Feature	Priority	Description	Purpose
Ride.Rate	Medium	Encourage users to rate and comment on the travel experience (Rate is optional for users)	Get users' feedback data to improve the platform (both software and hardware)
Report.Select a category	Medium	Select one category to report from Damaged Bike, Lock Issue, Illegal Parking and Other.	1. Get more detail information about problematic vehicles 2. Get insights of upgrading the hardware 3. For user-friendly purpose
Report.Select an Issue	Low	Select a more specific issue (only for Damaged Bike and Lock) - This is optional	1. Get more detail information about problematic vehicles 2. Get insights of upgrading the hardware 3. For user-friendly purpose
Report.Comment and Photo	Low	Enable users to comment and add photos to explain the issue - This is optional	1. Get more detail information about problematic vehicles 2. In case users want to explain other things
Banner	Low	Promotion and news displayed on the upper side of the main UI	1. For marketing purpose 2. Inform users with news and updates

3. User Flow & Design

Welcome

- **Welcome Page:** Every user must register to start a ride. Users may use a phone number or an email for registration. A 6-digit confirmation code will be sent to users' mobile devices or email addresses to complete the registration process. Users may also process as a guest to enter the Main Page, that allows users to check nearby bikes.
- **Main Page:** Both guests and logged-in users may enter this page, and they both can get the current location by tapping the "Navigation" icon. If a guest user taps "Ride" or "User" icon located at the upper left, a registration window will pop up to let the guest sign up.
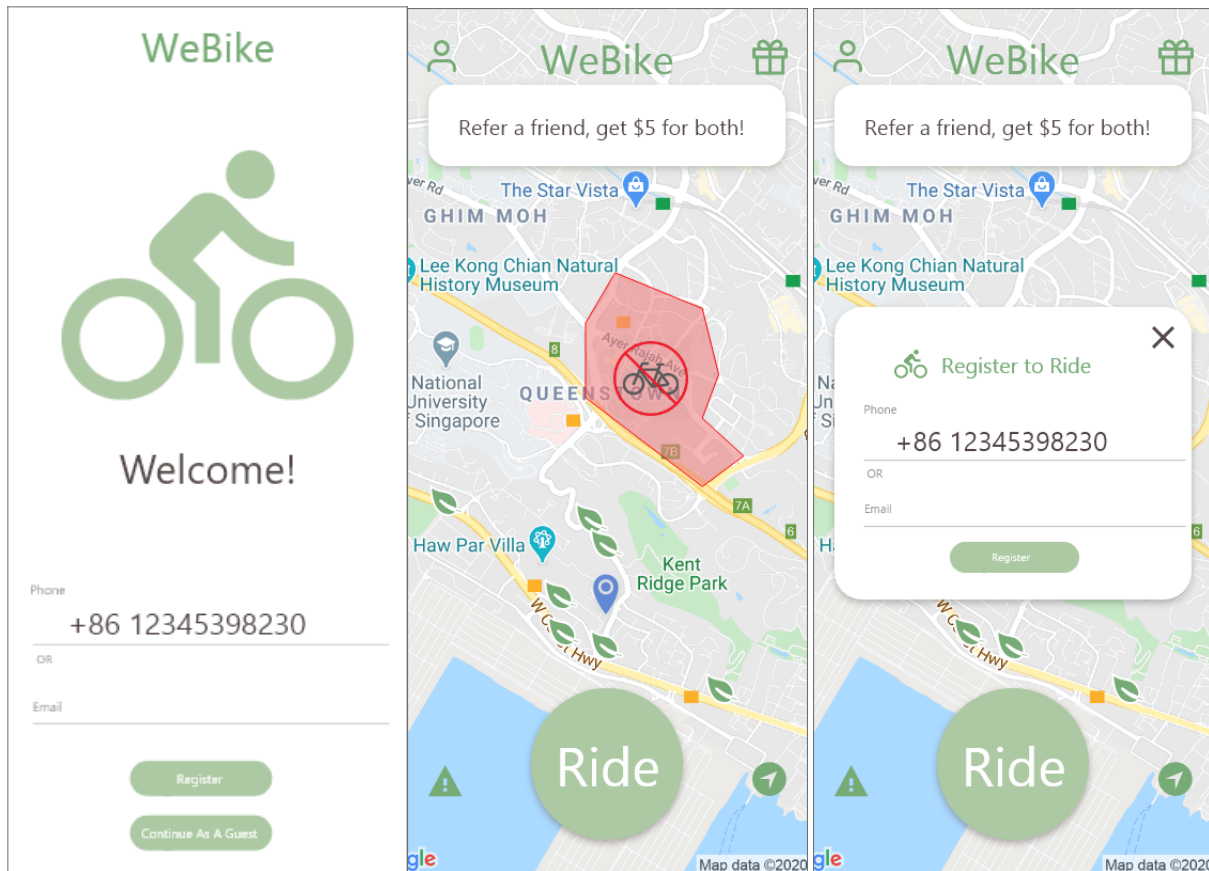
*Welcome Page   Main Page   Tap "Ride" or "User" without login*

Payment

- **Payment Page:** If a user with zero balance taps "Ride", one will be processed to the Payment Page. Users must add money in the account balance or add other payment methods to unlock a bike. Users may tap "Add" icon to process to Add Money Page. Alternatively, users may also add a credit card, set up the Apple Pay, Alipay or WePay, and choose a default payment.
- **Add Money Page:** if a user taps the "Add" icon near the balance number, a window will slide up to let users add money to the balance. The default payment method is Apple Pay. Users may enter Payment Method to choose one or add one, and enter the amount to submit.
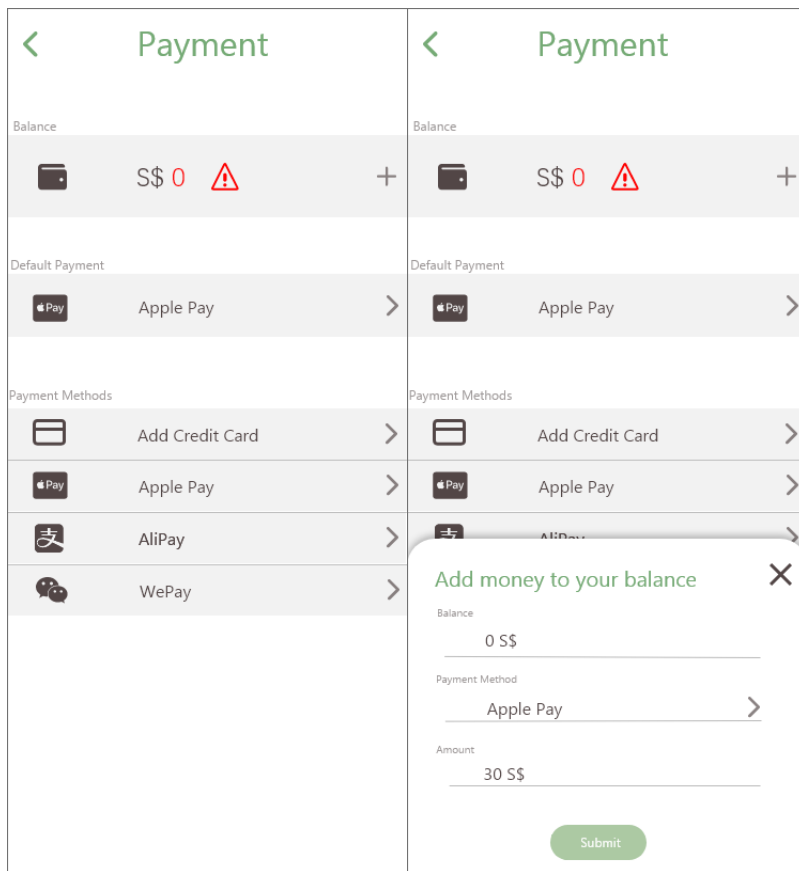
Payment Page Add Money Page

Ride

- **Scanning Page:** If a logged-in user taps "Ride", one will be processed to the Scanning Page. The "Load" icon may display shortly when unlocking the bike. Users may also tap "Pin" icon to process to the Enter Number Page and enter the bike number. Users may tap "Flashlight" icon to open the flashlight. The bike will be unlocked if it works properly.
- **Enter Number Page:** Users may tap "return" once entered the right number, then the bike will be unlocked if it works properly.
- **Riding Page:** Users may see the Riding Page once they unlock the bike. It starts to count the time spent and the travel distance once the bike is unlocked.
- **Rating Page:** The Rating Window will pop up once the user finished a ride and locked the bike. It indicates the time spent, travel distance and total cost. Users may choose to rate this trip by selecting stars and writing comments. Users may also choose not to rate by tapping the "Close" icon.
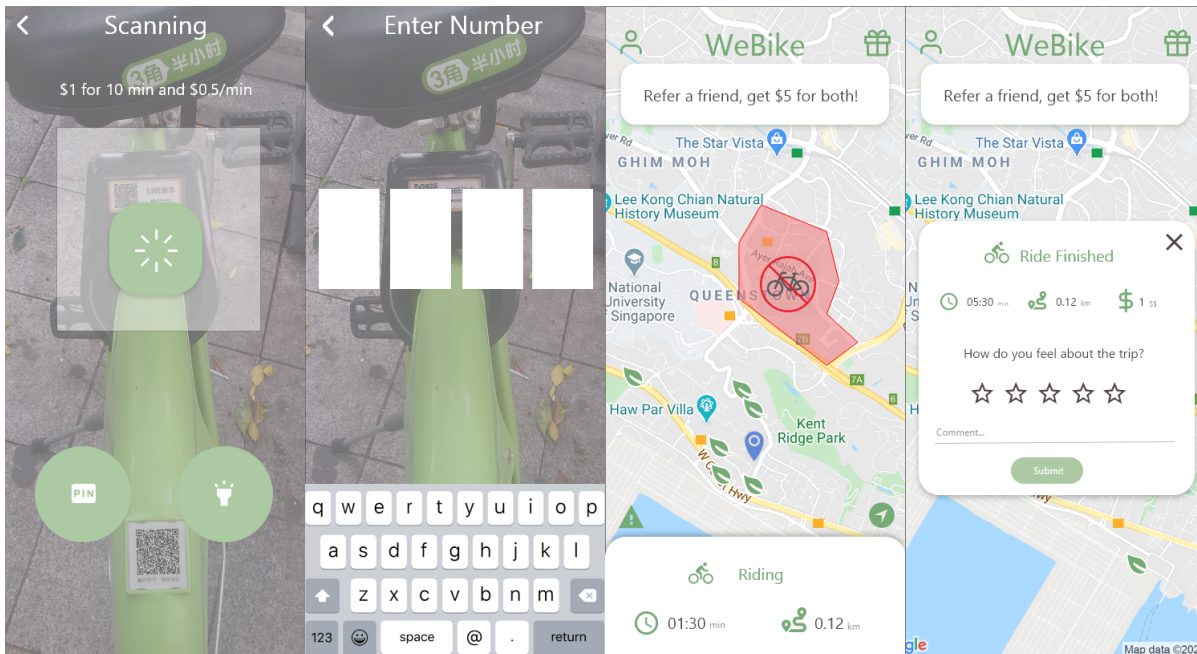
*Scanning Page Enter Number Page Riding Page Rating Page*

Report

- **Report Page:** Users may tap "Warn" icon on Main Page or Riding Page to report an issue. A window will pop up to let users choose one category to report. Users may also choose to quit by tapping "Close" icon.
- **Specific Report Page:** Users may have more options to elaborate on the issue. The location is auto-navigated to the current location, but users may modify it. Users are not required but may choose one or more options about the issue. Users are not required but may also choose to comment or upload pictures on this issue.
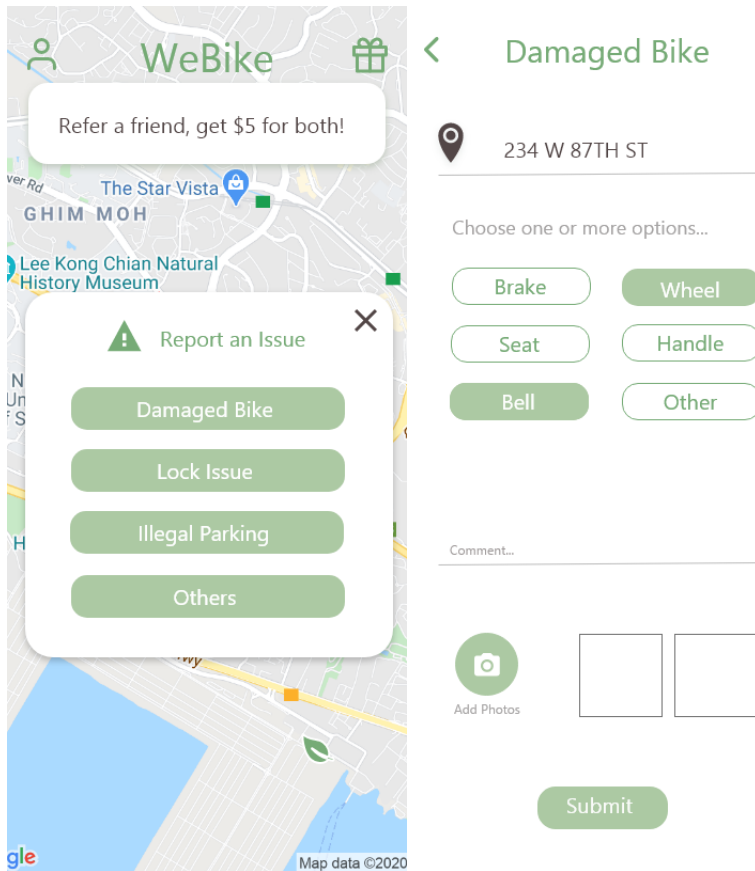
Report Page Specific Report Page

My (User Info)

- **My Menu:** A logged-in user may tap on the "User" icon to let the My Menu display. Users may tap any of these options to check and edit their information or log out and back to the Welcome Page.
- **Promos Page:** A user may enter Promos Page by tapping "Promos" in the My Menu, or the "Gift" icon on the upper right side, or the banner on the top of the Main Page. Users may find their referral code on this page and they can tap to copy it and share with friends to get bonus. Users may also enter a referral code sent by friends and tap "return" on the keyboard to receive the bonus. Users may also tap the "Share To Your Friends" button to trigger the sharing extension on iOS devices.
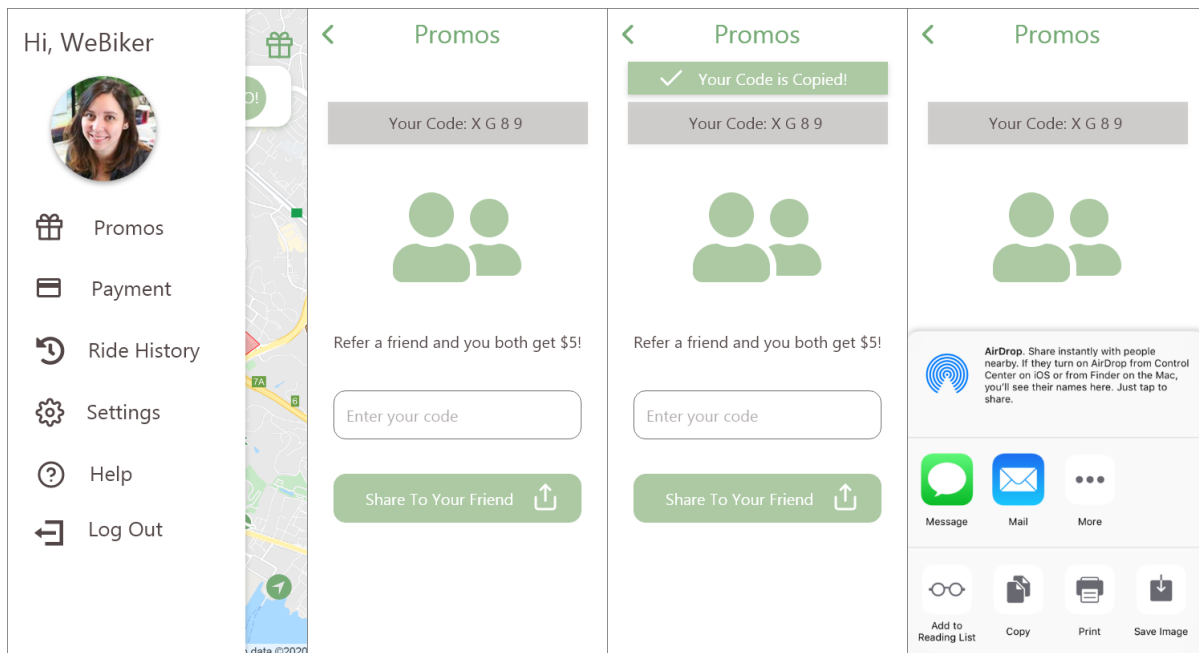
My Menu Promos Page Tap on the code to copy Tap to trigger extension

- **Payment Page:** Refer to Payment section.
- **Ride History Page:** The page displays the historical information of previous rides, including travel route, date and time, time spent, travel distance and total cost.
- **Settings:** Users may change the username, email address or phone number on this page. Users may add or change an avatar, enable or disable the promos notification.
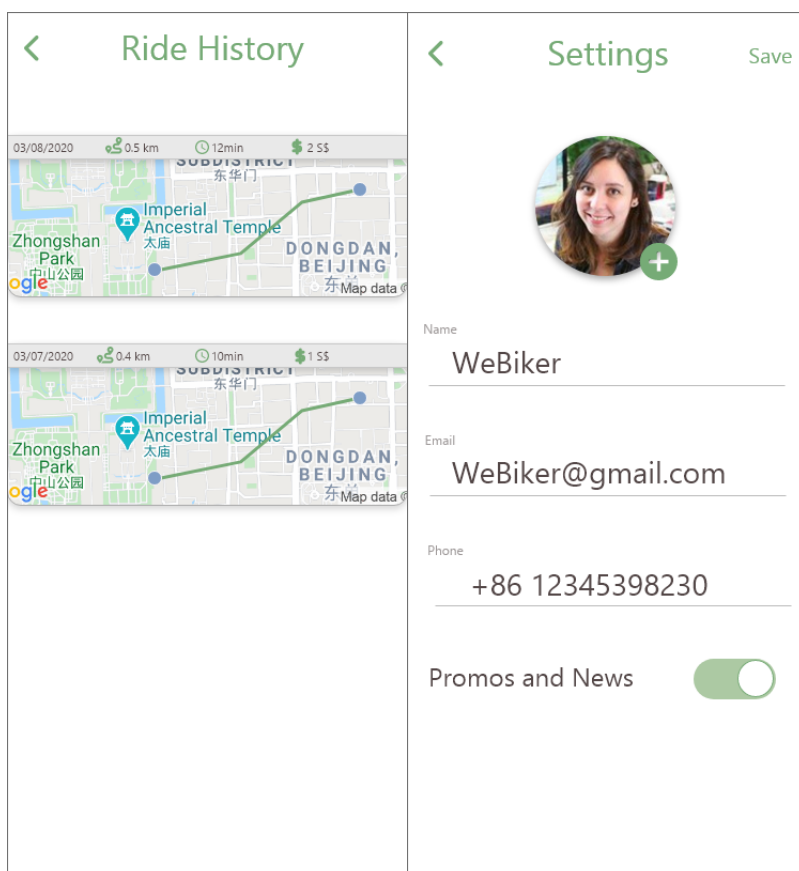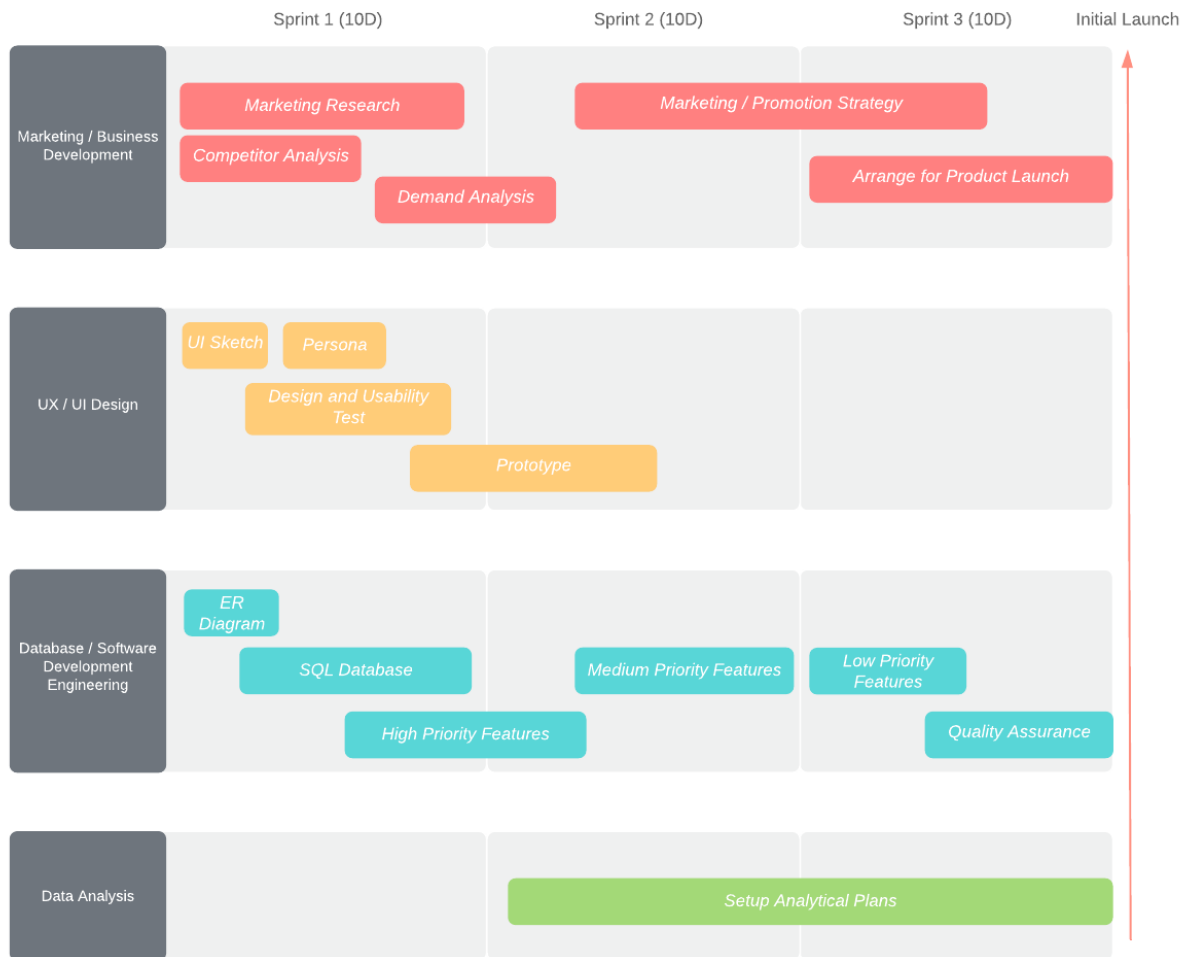

Ride History Page Settings Page

4. Roadmap

In order to quickly grab the market share of the bike-sharing business, WeBike must launch the initial mobile app as quickly as possible. We want to get initial feedback to constantly upgrade our product and aggressively expand our market share. The project team is composed by departments of marketing, business development, UI/UX design, software development engineering and data analysis. Our team plans to complete the MVP development in 30 days. Based on Agile development concepts, the development timeline is divided into 3 sprints with 10 days for each sprint. Scrum meetings are supposed to be arranged every 1 or 2 days, and each team should report what they have done, what they plan to do next, and what issues they may have.

Team	Responsibilities	Purposes
Marketing	Marketing research, competitor analysis, demand analysis, marketing / promotion strategies	Target major user segments, understand user needs, identify competitive advantages, increase the market share
Business Development	Arrange for product launch, identify profit models	Search for new business opportunities, maximize the product profit
UI/UX Design	Design and sketch user interfaces, prototype, conduct usability test	Ensure great visual and using experience
Database/ software engineering	Database modeling, mobile application development, quality assurance	Develop the mobile product, enable the functionality, ensure the product quality and usability
Data Analysis	Identify analytical angles, setup analytical plans	Eligible to deliver quick insights once the product launched and data is available

Below is the MVP development roadmap.

WeBike MVP development Roadmap

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	Sprint 1 (10D)	Sprint 2 (10D)	Sprint 3 (10D)	Initial Launch
Marketing / Business Development	Marketing Research / Competitor Analysis / Demand Analysis	Marketing / Promotion Strategy	Arrange for Product Launch	
UX / UI Design	UI Sketch / Persona / Design and Usability Test / Prototype			
Database / Software Development Engineering	ER Diagram / SQL Database / High Priority Features	Medium Priority Features	Low Priority Features / Quality Assurance	
Data Analysis		Setup Analytical Plans		

5. Analytics

Analytical Strategy

The analytical strategy at an early stage is established based on the concept of funnel metrics (AARRR Model). This analytical approach will help us understand our marketing efforts and user attractiveness as well as estimate the future market demands. We set the KPIs that follow the funnel metrics flow: acquisition -> activation -> retention -> revenue -> referral. We will set a baseline and a target measurement for each metric to measure the product performance.

KPI Rationale

Our ride-hailing platform has approximately 1.6 million users at Singapore. 20% of them are daily active users, which is 0.32 million in total. [1] The marketing team will advertise the product through our ride-hailing platform as long as WeBike launched. We expected to see 5% conversion rate (to download to app) in 10 days and 10% conversion rate in 30 days. Target Conversion Rate from Last Stage is also a crucial metric, which may provide insights into what stages need improvement.

KPI	Target Conversion Rate from Last Stage (KPI)	Baseline (10D)	Target (10D)	Baseline (30D)	Target (30D)
Downloads - Acquisition	N/A	9K	16k	26K	32K
Sign up - Acquisition	80%	7.2K	12.8K	20.8K	25.6K
Ride - Activation	80%	5.8K	10.2K	16.6K	20.5K
Multiple rides - Retention/Revenue	60%	3.5K	6.1K	10.0K	12.3K
Invite friends - Referral	30%	1.0K	1.8k	3.0K	3.7K

Other Measurements: Rate and Report are valuable ways to get primary user feedbacks, so although these two are not high priority features, we still encourage users to give us feedback. We expect 20% of ratings from all finished rides. We also expect 20% of known hardware issues are reported by users. If the ratio does not meet expectations, we need to modify these features to make it more user-friendly.

6. Future Plan

Features

In the future, we may add more features to satisfy more user needs, expand the market, and develop new profit models. New features may include but not limited to those listed below.

- **Monthly Subscribers:** WeBike may launch a monthly subscription service for frequent users. Users may enjoy unlimited rides with a monthly fee. This feature develops a new profit model and will help increase user stickiness.
- **Carbon Offset:** WeBike may allow users to see the amount of carbon they offset by riding with WeBike. It emphasizes the sustainability concept that WeBike pursues and helps cultivate the brand image in users' minds. Besides, this feature makes riding bikes more fun and may hence increase the user attractiveness.

Analytics

Data analytics is crucial to help understand users more deeply and to enhance the product. In the future, the data analysis team may refer to the following analytical approaches.

- **Retention Rate:** We may measure a 7-day/14-day/30-day retention rate and check whether the percentages increase, decrease or remain constant over time. With every newly-launched or modified feature, we may generate insights into how the modification influences the user retention.

- **Travel Path/Distance/Duration:** By measuring these metrics, we may understand the user more deeply: for what purposes and scenarios do users use WeBike? According to the insights, we may outline more precise user personas.
- **A/B Testing:** The Analytics team should perform A/B testing whenever WeBike launches a new feature or modifies an old feature. A/B Testing is a great tool to determine which design or feature to use.
- **Reviews:** The Analytics team may analyze the reviews both in App Store and comments along with ride ratings by applying NLP (Natural Language Processing) methods, which may help understand the overall review sentiments towards WeBike, as well as what features receive most positive/negative feedback.
- **Issue Reported:** This may provide insights into upgrading the hardware and reduce the damage rate.

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1. According to World Bank, the population in Singapore is approximately 5.6 million. Assume the ride-hailing market is 70% of Singapore population (3.9 million). Also assume WeBike is launched by the biggest ride-hailing platform at South East Asia taking 40% of the market share. ↩