

PlacePark

Submitted by: Team 3

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Due Date: April 18, 2021

Declaration of Sole Authorship

We, Team 3, confirm that this work submitted for assessment is our own and is expressed in our own words. Any uses made within it of the works of any other author, in any form (ideas, equations, figures, texts, tables, programs), are properly acknowledged at the point of use. A list of the references used is included.

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Abstract

Especially in large cities, finding parking spaces can be considered as a big problem. Failure to proceed in an organized manner or the lack of specific parking systems results in traffic jams and large time losses. It can take a long time in crowded settlements for people to find empty parking spaces when visiting the mall or elsewhere. In addition, long waiting times in parking lots and lack of vacant parking places cause huge time losses. Hence, there is a need for a parking management system and design for large cities such as Toronto with parking space problems. This application helps users to find parking spaces near them without paying any fees and to organize parking layout management. The mobile application was developed using React-Native, Expo.io, VSCode, iOS Simulator software and works on all android smartphones. With this application, customers can find free parking spaces and set their own phones according to the specified time interval and extend the parking space time whenever they want.

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1.0 INTRODUCTION

Any city must have enough parking spaces so their residents and visitors can park their cars; the City Parking Authority usually takes this in consideration when building a park and they normally provide several public parking options. But, even though living and driving in a big city might have a lot of perks, one of the main issues a car owner can encounter it's the difficulty of finding a good spot right next to the location they're headed.

Our objective is to be the first go-to app for users that are looking for a parking spot around the city. This app surely will help car drivers to move around the city with much more delight than they did before and not worry about where they'll park their cars.

2.0 METHODOLOGY AND RESULTS

2.1 Literature Review

A few of the existing solutions for finding parking are SpotHero, ParkingWhiz, Parker and more. While there are many solutions, most have limited coverage range. While SpotHero has the widest collection of parking data, the rest remain limited in the cities they provide coverage for.

2.2 Proposed Solution

“PlacePark” is an app that will allow its users to know where all the commercial parking lots are, how much availability it has at the moment, the price per hour/day and it will allow the user to reserve and ensure their spot. Benefits:

- Less time spent on finding a parking spot.
- Optimized parking spaces
- Reduces stress, traffic and pollution
- Increases the security of the user's cars

2.3 User Role Modelling

2.3.1 Brainstorm and Group

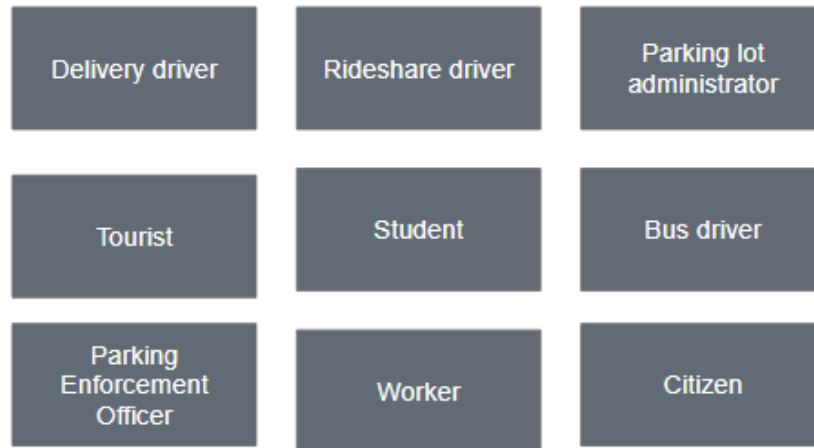


Figure 2.3.1: Organizing the user role cards on a table [1].

During our brainstorm session, we, as a group, discussed the different types of users our application might have. We thought of 9 users roles that would use the application.

2.3.2 Consolidated User Roles

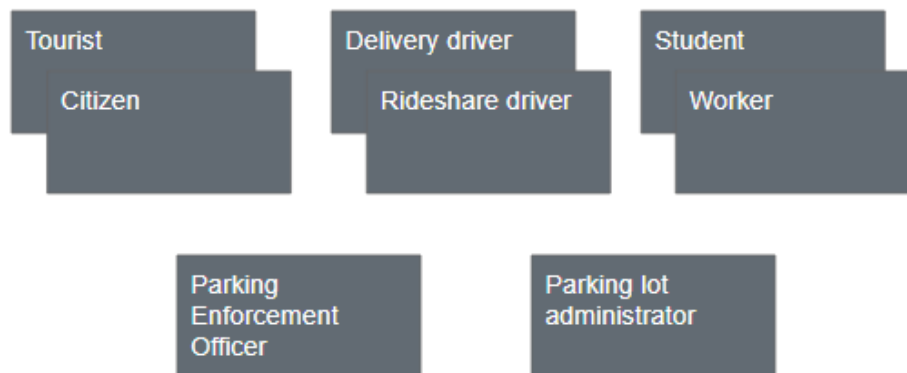


Figure 2.3.2: The consolidated role cards [1].

We lowered it down to 5 clusters: Student/Worker, Tourist/Citizen, Park Enforcement Officer, Parking lot administrator, Delivery drivers. We clusterized our user roles, putting together the ones with similar characteristics and erasing those who didn't seem fit in the end.

The number of user roles within a cluster was minimized as much as was possible in the session. For example, we clusterized the heavy users of our app: Students and workers. In the end, we put them both together as one user. When putting together, it was properly captioned and explained why it was consolidated during the session.



Figure 2.3.3: The condensed role cards [1].

We believed that most of the roles were really similar to each other. For instance, a student and a worker would have the same use-case as a tourist and a citizen, so in the end, we felt it was appropriate to use “driver” as an umbrella term rather than separating the roles. Here are the roles in depth:

- **Driver:** Driver user role contains regular users such as citizens or tourists. It is the main user of the software, so it will have a high frequency of using the software. This user role model can have very low proficiency with software due to the help that will be provided. Driver will need to use the software for reservation, payment, or managing profile.
- **Parking Enforcement Officer:** This user role model will have a middle frequency of using the software. It can have a low proficiency with the computer and software, but it should be trained how to use the application

because its mistake could affect the satisfaction of users. Enforcement officers will use the software for managing expired or unpaid cars.

- **Parking lot administrator:** Administrator will have a high frequency of using the software. This user role should have a high proficiency with the computer and software being developed. Administrator will use the software for managing the reservation and parking lot view.

2.3.3 Description of User Roles and Persona

Driver

Driver user role contains regular users such as citizens or tourists. It is the main user of the software, so it will have a high frequency of using the software. This user role model has an average proficiency with software and some help might need to be provided. Driver will need to use the software for reservation, payment or managing profile.

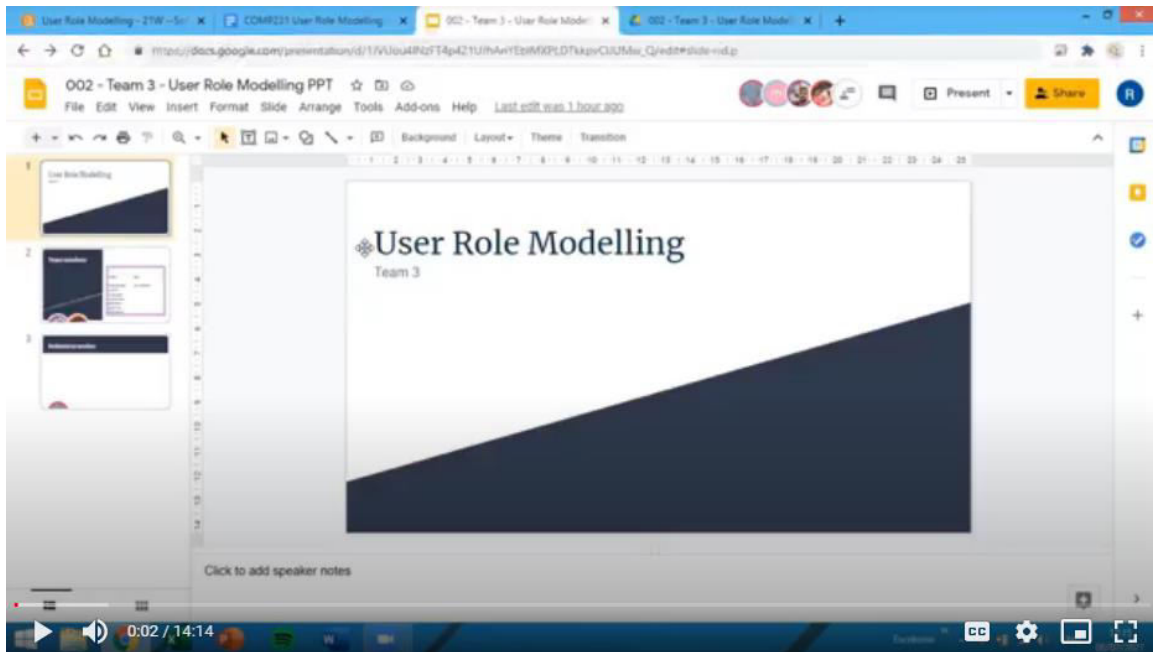
Parking Enforcement Officer

This user role model will have a middle to high frequency of using the software. It can have a low proficiency with computers and software, but it should be trained on how to use the application to fulfill their job activities. Parking Enforcement Officers will use the software for managing expired or unpaid reservations.

Parking lot administrator

Parking Lot Administrators will have a high frequency of using the software. This user role should have a high proficiency with computers and with the software being developed. Administrators will use the software to manage the reservations, their status and parking lot in general.

2.3.4 Additional Documentation



Team 3 - User Role Modelling - Video Meeting

<https://drive.google.com/file/d/12cZAJMdwAWIZ2pu6qw7ilWxJgNwycO6Q/view?usp=sharing>

2.4 Release 1.0

2.4.1 User Stories

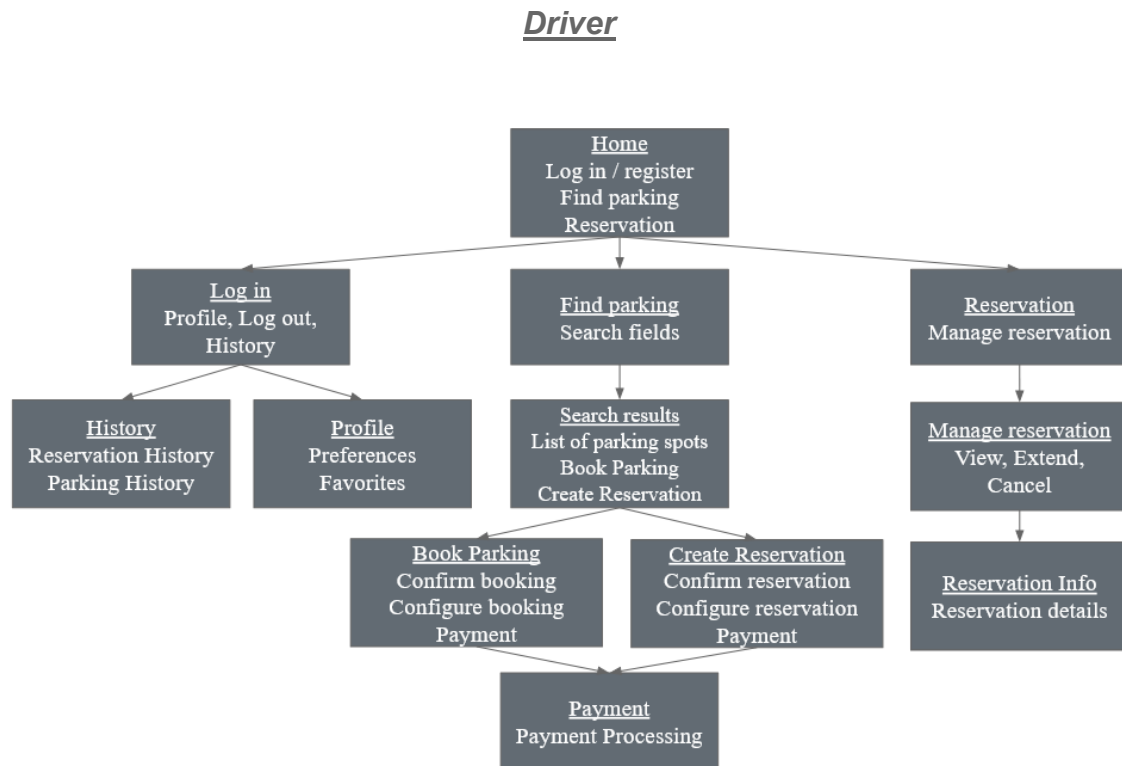


Figure 2.4.1 - Low-Fidelity Prototype for Driver role

| | | |
|---|---|---|
| | <p>As a driver I can access my profile so I can (i) set my preferences and (ii) access my favorites</p> <p>Note: Profile details can be edited here</p> <p>Estimate: 4</p> | <p>As a driver I can manage my reservations so I can (i) cancel, (ii) extend or (iii) view</p> <p>Note: Extend goes to reservation details with editing enabled</p> <p>Estimate: 6</p> |
| <p>As a driver I can see homescreen so I can (i) Login/Register (ii) Find Parking (iii) Make a reservation</p> <p>Note: Login to account allow access to history and favorites</p> <p>Estimate: 2</p> | <p>As a driver I can perform searches for parking</p> <p>Note: Geolocation/Google Maps integrated search. Note: Search filters can be applied (price, distance, availability)</p> <p>Estimate: 8</p> | <p>As a driver I can reserve a parking space so I can (i) confirm my reservation, (ii) configure my reservation and (iii) pay for my reservation</p> <p>Note: Configure reservation in dropdown tab</p> <p>Estimate: 10</p> |
| <p>As a driver I can login to my account so I can access my (i) profile and (i) history.</p> <p>Note: Log out, logs out of account and return to Home</p> <p>Estimate: 4</p> | <p>As a driver I can see the list of parking options so I can select one to book</p> <p>Note: Sorts can be applied. Note: Parking space details also displayed in a dropdown Note: Results shown as map or list.</p> <p>Estimate: 4</p> | <p>As a driver I can make a payment so I can complete my transaction</p> <p>Note: Payment processing with credit card Note: Payment processing with banking app</p> <p>Estimate: 8</p> |
| <p>As a driver I can access history so I can see (i) my reservation history and (ii) parking history</p> <p>Note: Dropdown tab switches between reservation and parking</p> <p>Estimate: 3</p> | <p>As a driver I can book a parking space so I can (i) confirm my booking, (ii) configure its details and (iii) pay for my booking</p> <p>Note: Configure booking details in dropdown tab</p> <p>Estimate: 20</p> | |

Figure 2.4.2 - User Stories for Driver role

Parking Enforcement Officer

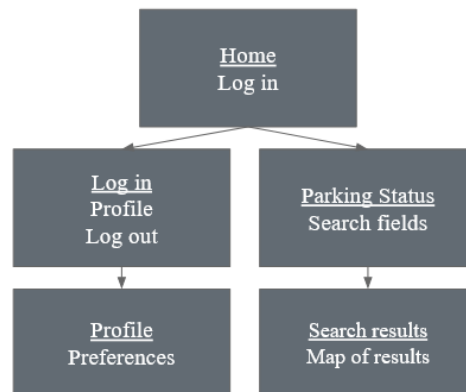


Figure 2.4.3 - Low-Fidelity Prototype for Parking Enforcement Officer

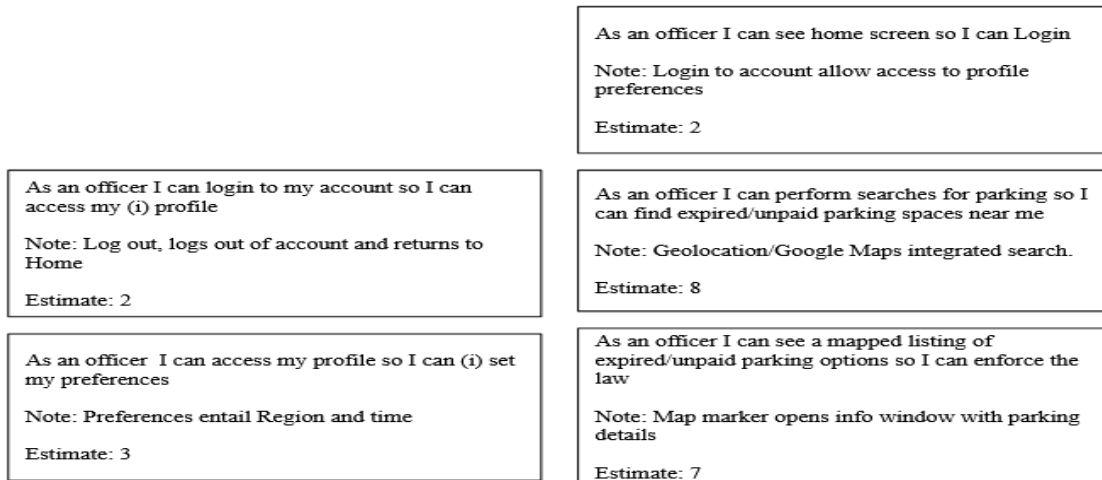


Figure 2.4.5 - User Stories for Parking Enforcement Officer role

Parking Lot Administrator

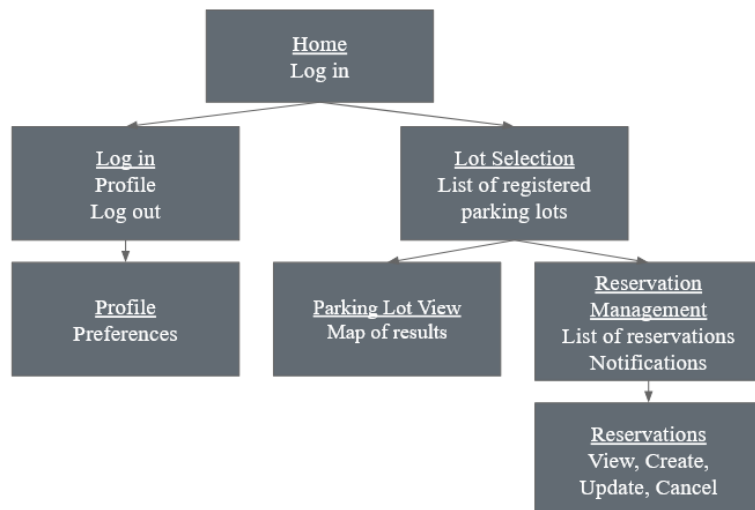
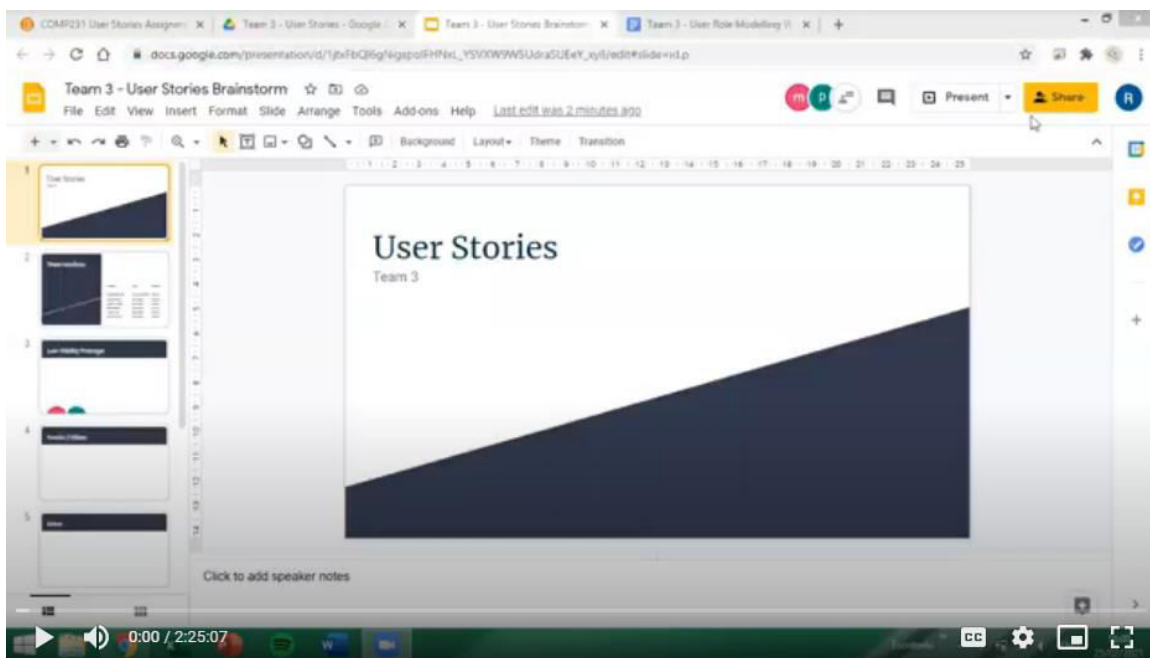


Figure 2.4.6 - Low-Fidelity Prototype for Parking Lot Administrator role

| | | |
|--|--|--|
| <p>As an administrator I can access my profile so I can (i) set my preferences</p> <p>Note: This is where parking lot boundary is configured</p> <p>Estimate: 3</p> | <p>As an administrator I can manage reservations so I can (i) view, (ii) create, (iii) update, (iv) cancel reservations</p> <p>Note: A reservation form shows up in a pop-up window</p> <p>Estimate: 10</p> | <p>As an administrator I can login to my account so I can access my (i) profile</p> <p>Note: Log out, logs out of account and returns to Home</p> <p>Estimate: 2</p> |
| <p>As an administrator I can select a parking lot so I can view all expired, unpaid, open parking spaces at the lot</p> <p>Note: User must select registered lot to proceed</p> <p>Estimate: 5</p> | <p>As an administrator I can see a map listing of expired, unpaid, open parking options so I can administer the parking lot</p> <p>Note: Can be sorted/filtered based on status (expired, unpaid, open)</p> <p>Estimate: 8</p> | <p>As an administrator I can see a list of (i) reservations and (ii) notifications</p> <p>Note: Can be sorted/filtered</p> <p>Note: Switch to alternate view between reservations and notifications</p> <p>Estimate: 5</p> |
| <p>As an administrator I can see home screen so I can Login</p> <p>Note: Login to account allow access to profile preferences</p> <p>Estimate: 2</p> | | |

Figure 2.4.7 - User Stories for Parking Lot Administrator role

2.4.2 Additional Documentation



Team 3 - User Stories - Video Meeting

https://drive.google.com/file/d/1I0x6LwdogNq_83Q09WymJp_PAH2IW9Ew/view?usp=sharing

2.4.3 Release Plan 1.0

2.4.3.1 Product Development Roadmap

- Search for parking spaces based on selected criteria (location, distance, price, status)
- Secured profile management with settings/preferences configuration
- Favorites listing with add/remove capability
- Add/remove favorite parking spaces from viewable list
- Booking management for available parking spaces
- Parking reservation management for customers and lot administrators
- Parking lot monitoring/administration
- Receive notifications for expired/missed reservations and bookings
- Viewable logs of reservation and booking history
- Accept payments for bookings and reservations

2.4.3.2 Iteration Length and Release Date

Iteration Length: 2 weeks

Release Date: April 18, 2020

2.4.3.3 Refined Story Grouping

| Story | Estimate |
|--|----------|
| As a driver I can see home screen so I can (i) Login/Register (ii) Find Parking (iii) Make a reservation | 2 |
| As an officer I can see home screen so I can Login | 2 |
| As an administrator I can see home screen so I can Login | 2 |
| As a driver I can login to my account so I can access my (i) profile and (i) history. | 4 |
| As an officer I can login to my account so I can access my (i) profile | 2 |
| As an administrator I can login to my account so I can access my (i) profile | 2 |

Table 2.4.1 - Must-Have Stories

| Story | Estimate |
|--|----------|
| As a driver I can see the list of parking options so I can select one to book | 4 |
| As a driver I can manage my reservations so I can (i) cancel, (ii) extend or (iii) view | 6 |
| As an administrator I can see a map listing of expired, unpaid, open parking options so I can administer the parking lot | 8 |
| As an administrator I can see a list of (i) reservations and (ii) notifications | 5 |

Table 2.4.2 - Should-Have Stories

| Story | Estimate |
|---|----------|
| As a driver I can perform searches for parking | 8 |
| As a driver I can access history so I can see (i) my reservation history and (ii) parking history | 3 |
| As a driver I can book a parking space so I can (i) confirm my booking, (ii) configure its details and (iii) pay for my booking | 10 |
| As a driver I can reserve a parking space so I can (i) confirm my reservation, (ii) configure my reservation and (iii) pay for my reservation | 10 |
| As an administrator I can select a parking lot so I can view all expired, unpaid, open parking spaces at the lot | 5 |
| As an administrator I can manage reservations so I can (i) view, (ii) create, (iii) update, (iv) cancel reservations | 10 |
| As an officer I can perform searches for parking so I can find expired/unpaid parking spaces near me | 8 |

Table 2.4.3 - Could-Have Stories

| Story | Estimate |
|--|----------|
| As a driver I can access my profile so I can (i) set my preferences and (ii) access my favorites | 4 |
| As an officer I can access my profile so I can (i) set my preferences | 3 |
| As an administrator I can access my profile so I can (i) set my preferences | 3 |
| As a driver I can make a payment so I can complete my transaction | 8 |
| As an officer I can see a mapped listing of expired/unpaid parking spaces so I can enforce the law | 7 |

Table 2.4.4 - Won't-Have Stories

2.4.3.4 Release Plan

| | Iteration 1 | Iteration 2 |
|-------------------|---|---|
| | As a driver I can see home screen so I can (i) Login/Register (ii) Find Parking (iii) Make a reservation | As a driver I can access history so I can see (i) my reservation history and (ii) parking history |
| | As an officer I can see home screen so I can Login | As a driver I can book a parking space so I can (i) confirm my booking, (ii) configure its details and (iii) pay for my booking |
| | As an administrator I can see home screen so I can Login | As a driver I can reserve a parking space so I can (i) confirm my reservation, (ii) configure my reservation and (iii) pay for my reservation |
| | <i>As a driver I can login to my account so I can access my (i) profile and (i) history.</i> | As a driver I can access my profile so I can (i) set my preferences and (ii) access my favorites |
| | <i>As an officer I can login to my account so I can access my (i) profile</i> | As an officer I can perform searches for parking so I can find expired/unpaid parking spaces near me |
| | <i>As an administrator I can login to my account so I can access my (i) profile</i> | As an officer I can access my profile so I can (i) set my preferences |
| | As a driver I can see the list of parking options so I can select one to book | As an administrator I can select a parking lot so I can view all expired, unpaid, open parking spaces at the lot |
| | As a driver I can manage my reservations so I can (i) cancel, (ii) extend or (iii) view | As an administrator I can manage reservations so I can (i) view, (ii) create, (iii) update, (iv) cancel reservations |
| | As an administrator I can see a map listing of expired, unpaid, open parking options so I can administer the parking lot | As an administrator I can access my profile so I can (i) set my preferences |
| | As an administrator I can see a list of (i) reservations and (ii) notifications | As a driver I can make a payment so I can complete my transaction |
| | As a driver I can perform searches for parking | As an officer I can see a mapped listing of expired/unpaid parking options so I can enforce the law |
| Begin Date | March 1, 2021 | March 22, 2021 |
| End Date | March 21, 2021 | April 16, 2021 |

Table 2.4.5 - Release Plan

2.4.4 Iteration Plan (Release 1.0)

Table 2.4.6 - Iteration I (Theoretical)

| <p><i>As a driver I can see home screen so I can (i) Login/Register (ii) Find Parking (iii) Make a reservation</i></p> <p><i>As an officer I can see home screen so I can Login</i></p> <p><i>As an administrator I can see home screen so I can Login</i></p> | <table><tr><th>Tasks</th><th>Who</th><th>Est.</th><th>Act.</th></tr><tr><td>Code landing page</td><td>Raphael</td><td>1</td><td>1</td></tr><tr><td>Code display based on user role</td><td>Raphael</td><td>2</td><td>2</td></tr><tr><td>Define user role in database</td><td>Mustafa / Okan</td><td>3</td><td>3</td></tr></table> | Tasks | Who | Est. | Act. | Code landing page | Raphael | 1 | 1 | Code display based on user role | Raphael | 2 | 2 | Define user role in database | Mustafa / Okan | 3 | 3 | | | | | | | | |
|---|---|-------|------|------|------|--|----------------|---|---|--|-----------------|---|---|--|-----------------|---|---|--|-----------------|---|---|--------------------------|------|---|---|
| Tasks | Who | Est. | Act. | | | | | | | | | | | | | | | | | | | | | | |
| Code landing page | Raphael | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Code display based on user role | Raphael | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| Define user role in database | Mustafa / Okan | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | |
| <p><i>As a driver I can login to my account so I can access my (i) profile and (i) history.</i></p> <p><i>As an officer I can login to my account so I can access my (i) profile</i></p> <p><i>As an administrator I can login to my account so I can access my (i) profile</i></p> | <table><tr><th>Tasks</th><th>Who</th><th>Est.</th><th>Act.</th></tr><tr><td>Create account and profile models in database</td><td>Paul</td><td>3</td><td>3</td></tr><tr><td>Write SQL for user login to database</td><td>Mustafa / Okan</td><td>3</td><td>3</td></tr><tr><td>Code for profile management screens</td><td>Paul</td><td>2</td><td>2</td></tr></table> | Tasks | Who | Est. | Act. | Create account and profile models in database | Paul | 3 | 3 | Write SQL for user login to database | Mustafa / Okan | 3 | 3 | Code for profile management screens | Paul | 2 | 2 | | | | | | | | |
| Tasks | Who | Est. | Act. | | | | | | | | | | | | | | | | | | | | | | |
| Create account and profile models in database | Paul | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | |
| Write SQL for user login to database | Mustafa / Okan | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | |
| Code for profile management screens | Paul | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| <p>/</p> <p><i>As a driver I can see the list of parking options so I can select one to book</i></p> | <table><tr><th>Tasks</th><th>Who</th><th>Est.</th><th>Act.</th></tr><tr><td>Code SQL for parking queries to database</td><td>Mustafa / Okan</td><td>2</td><td>2</td></tr><tr><td>Code Google map queries/display</td><td>Jasper / Iksang</td><td>1</td><td>1</td></tr><tr><td>Code for parking searches (includes filter)</td><td>Jasper / Iksang</td><td>1</td><td>1</td></tr><tr><td>Code for search result screen</td><td>Raphael</td><td>1</td><td>1</td></tr><tr><td>Code for parking booking</td><td>Paul</td><td>1</td><td>1</td></tr></table> | Tasks | Who | Est. | Act. | Code SQL for parking queries to database | Mustafa / Okan | 2 | 2 | Code Google map queries/display | Jasper / Iksang | 1 | 1 | Code for parking searches (includes filter) | Jasper / Iksang | 1 | 1 | Code for search result screen | Raphael | 1 | 1 | Code for parking booking | Paul | 1 | 1 |
| Tasks | Who | Est. | Act. | | | | | | | | | | | | | | | | | | | | | | |
| Code SQL for parking queries to database | Mustafa / Okan | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| Code Google map queries/display | Jasper / Iksang | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Code for parking searches (includes filter) | Jasper / Iksang | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Code for search result screen | Raphael | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Code for parking booking | Paul | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| <p>/</p> <p><i>As a driver I can manage my reservations so I can (i) cancel, (ii) extend or (iii) view</i></p> <p><i>As an administrator I can see a list of (i) reservations and (ii) notifications</i></p> | <table><tr><th>Tasks</th><th>Who</th><th>Est.</th><th>Act.</th></tr><tr><td>Write SQL for reservation management in database</td><td>Mustafa / Okan</td><td>4</td><td>4</td></tr><tr><td>Code for reservation CRUD screens</td><td>Raphael</td><td>3</td><td>3</td></tr><tr><td>Code notification alert system in database and screens</td><td>Paul</td><td>3</td><td>3</td></tr><tr><td>Code calendar view display screens</td><td>Raphael</td><td>1</td><td>1</td></tr></table> | Tasks | Who | Est. | Act. | Write SQL for reservation management in database | Mustafa / Okan | 4 | 4 | Code for reservation CRUD screens | Raphael | 3 | 3 | Code notification alert system in database and screens | Paul | 3 | 3 | Code calendar view display screens | Raphael | 1 | 1 | | | | |
| Tasks | Who | Est. | Act. | | | | | | | | | | | | | | | | | | | | | | |
| Write SQL for reservation management in database | Mustafa / Okan | 4 | 4 | | | | | | | | | | | | | | | | | | | | | | |
| Code for reservation CRUD screens | Raphael | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | |
| Code notification alert system in database and screens | Paul | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | |
| Code calendar view display screens | Raphael | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| <p><i>As an administrator I can see a map listing of expired, unpaid, open parking options so I can administer the parking lot</i></p> <p><i>As a driver I can perform searches for parking</i></p> | <table><tr><th>Tasks</th><th>Who</th><th>Est.</th><th>Act.</th></tr><tr><td>Code SQL for parking queries to database</td><td>Mustafa / Okan</td><td>4</td><td>4</td></tr><tr><td>Code SQL for lot details from database</td><td>Mustafa / Okan</td><td>4</td><td>4</td></tr><tr><td>Code Google Maps search/display</td><td>Jasper / Iksang</td><td>5</td><td>5</td></tr><tr><td>Code for parking search/results screen</td><td>Jasper / Iksang</td><td>3</td><td>3</td></tr></table> | Tasks | Who | Est. | Act. | Code SQL for parking queries to database | Mustafa / Okan | 4 | 4 | Code SQL for lot details from database | Mustafa / Okan | 4 | 4 | Code Google Maps search/display | Jasper / Iksang | 5 | 5 | Code for parking search/results screen | Jasper / Iksang | 3 | 3 | | | | |
| Tasks | Who | Est. | Act. | | | | | | | | | | | | | | | | | | | | | | |
| Code SQL for parking queries to database | Mustafa / Okan | 4 | 4 | | | | | | | | | | | | | | | | | | | | | | |
| Code SQL for lot details from database | Mustafa / Okan | 4 | 4 | | | | | | | | | | | | | | | | | | | | | | |
| Code Google Maps search/display | Jasper / Iksang | 5 | 5 | | | | | | | | | | | | | | | | | | | | | | |
| Code for parking search/results screen | Jasper / Iksang | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | |

Table 2.4.7 - Iteration II (Special Iteration)

| <i>As a driver I can see home screen so I can (i) Login/Register (ii) Find Parking (iii) Make a reservation</i> | <table><tr><th>Tasks</th><th>Who</th><th>Est.</th><th>Act.</th></tr><tr><td>Code landing page</td><td>Raphael, Jasper</td><td>4</td><td></td></tr><tr><td>Code display based on user role</td><td>Raphael, Jasper</td><td>4</td><td></td></tr></table> | Tasks | Who | Est. | Act. | Code landing page | Raphael, Jasper | 4 | | Code display based on user role | Raphael, Jasper | 4 | | | | | |
|---|---|-------|-------|------|------|--|-----------------|---|-------|--|-----------------|---|-------|-------------------------------------|---------------|---|-------|
| Tasks | Who | Est. | Act. | | | | | | | | | | | | | | |
| Code landing page | Raphael, Jasper | 4 | | | | | | | | | | | | | | | |
| Code display based on user role | Raphael, Jasper | 4 | | | | | | | | | | | | | | | |
| <i>As a driver I can perform searches for parking</i> <i>As an officer I can perform searches for parking so I can find expired/unpaid parking spaces near me</i> | <table><tr><th>Tasks</th><th>Who</th><th>Est.</th><th>Act.</th></tr><tr><td>Code SQL for parking queries to database</td><td>Mustafa, Okan</td><td>4</td><td>M - 6</td></tr><tr><td>Code for parking search/results screen</td><td>Mustafa, Okan</td><td>5</td><td>M - 7</td></tr><tr><td>Code Google Maps search/display</td><td>Mustafa, Okan</td><td>5</td><td>M - 4</td></tr></table> | Tasks | Who | Est. | Act. | Code SQL for parking queries to database | Mustafa, Okan | 4 | M - 6 | Code for parking search/results screen | Mustafa, Okan | 5 | M - 7 | Code Google Maps search/display | Mustafa, Okan | 5 | M - 4 |
| Tasks | Who | Est. | Act. | | | | | | | | | | | | | | |
| Code SQL for parking queries to database | Mustafa, Okan | 4 | M - 6 | | | | | | | | | | | | | | |
| Code for parking search/results screen | Mustafa, Okan | 5 | M - 7 | | | | | | | | | | | | | | |
| Code Google Maps search/display | Mustafa, Okan | 5 | M - 4 | | | | | | | | | | | | | | |
| <i>As a driver I can book a parking space so I can (i) confirm my booking, (ii) configure its details and (iii) pay for my booking</i> | <table><tr><th>Tasks</th><th>Who</th><th>Est.</th><th>Act.</th></tr><tr><td>Write SQL for booking management in database</td><td>Iksang, Paul</td><td>6</td><td></td></tr><tr><td>Code for booking CRUD screens</td><td>Iksang, Paul</td><td>5</td><td></td></tr></table> | Tasks | Who | Est. | Act. | Write SQL for booking management in database | Iksang, Paul | 6 | | Code for booking CRUD screens | Iksang, Paul | 5 | | | | | |
| Tasks | Who | Est. | Act. | | | | | | | | | | | | | | |
| Write SQL for booking management in database | Iksang, Paul | 6 | | | | | | | | | | | | | | | |
| Code for booking CRUD screens | Iksang, Paul | 5 | | | | | | | | | | | | | | | |
| <i>As a driver I can access my profile so I can (i) set my preferences and (ii) access my favorites</i> <i>As an officer I can access my profile so I can (i) set my preferences</i> <i>As an administrator I can access my profile so I can (i) set my preferences</i> | <table><tr><th>Tasks</th><th>Who</th><th>Est.</th><th>Act.</th></tr><tr><td>Create account models in database</td><td>Iksang, Paul</td><td>5</td><td></td></tr><tr><td>Write SQL for user login to database</td><td>Iksang, Paul</td><td>4</td><td></td></tr><tr><td>Code for profile management screens</td><td>Mustafa</td><td>3</td><td></td></tr></table> | Tasks | Who | Est. | Act. | Create account models in database | Iksang, Paul | 5 | | Write SQL for user login to database | Iksang, Paul | 4 | | Code for profile management screens | Mustafa | 3 | |
| Tasks | Who | Est. | Act. | | | | | | | | | | | | | | |
| Create account models in database | Iksang, Paul | 5 | | | | | | | | | | | | | | | |
| Write SQL for user login to database | Iksang, Paul | 4 | | | | | | | | | | | | | | | |
| Code for profile management screens | Mustafa | 3 | | | | | | | | | | | | | | | |

2.4.5 Additional Documentation

Team 3 - Iteration Planning II - Video Meeting.mp4

Open with

https://s.centennialcollege.ca/s/6313156/viewContent/7287595/view

| | percentage | due date | type | location |
|-----------------------------------|--|-----------------------------------|---|---|
| 2. User Role Modeling | 10% | Due Sunday of Week 3 at 11:59 PM | Assignment | Team shared folder in appropriate subfolder |
| 3. User Stories | 20% | Due Sunday of Week 6 at 11:59 PM | Assignment | Team shared folder in appropriate subfolder |
| 4. The Release Plan | 10% | Due Sunday of Week 7 at 11:59 PM | Assignment | Team shared folder in appropriate subfolder |
| 5. Iteration Planning 1 | 7.5% | Due Sunday of Week 8 at 11:59 PM | Assignment | Team shared folder in appropriate subfolder |
| 6. Progress Monitoring 1 | 2.5% | Sunday of Week 10 by 11:59pm | Assignment | Team shared folder in appropriate subfolder |
| 7. Iteration Planning 2 | 7.5% | Due Sunday of Week 11 at 11:59 PM | Assignment | Team shared folder in appropriate subfolder |
| 9. Progress Monitoring 2 | 2.5% | Due Sunday of Week 12 at 11:59 PM | Assignment | Team shared folder in appropriate subfolder |
| 10. TAC Technical Report Template | 20% (18% + 2% Week 1 Project Proposal) | Due Friday of Week 13 at 11:59 PM | Template Evaluation | Team shared folder in appropriate subfolder |
| 11. Software Release 1.0 | 15% | Due Sunday of Week 13 at 11:59 PM | Assignment Instructions for video demo | Team shared folder in appropriate subfolder |
| 12. Peer Evaluation | 5% | Due Friday of Week 13 at 11:59 PM | Participation (Peer Evaluation) Grading Sheet | See Participation Instructions |

0.01 / 42:11

40:51

Team 3 - Iteration Planning II - Video Meeting.mp4

<https://drive.google.com/file/d/1Q98FP7QfSblYq9DyILufi1oIDcODH25u/view?usp=sharing>

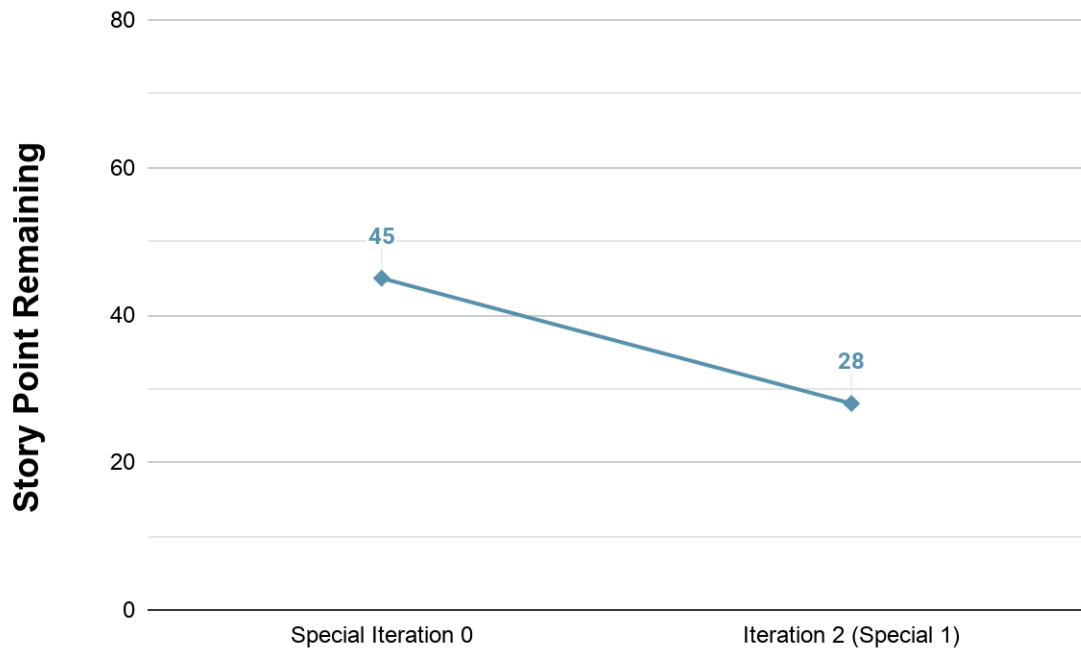
2.4.6 Progress Monitoring

Progress Monitoring II

1. Progress & Changes Table

| | Iteration I | Iteration 2 (Special Iteration I) |
|---|-------------|---|
| Story points at start of iteration | 57 | 45 |
| Completed during iteration | 0 | 17 |
| Changed estimates | 10 | 0 |
| Story points for new stories | 0 | 0 |
| Story points at end of iteration | 67 | 28 |

2. Burndown Chart (**EXAMPLE BELOW**)



2.4.7 Acceptance Tests for Release 1.0

Table 2.4.8: Stories, acceptance tests, and contributors for Release 1.0 (**Green=Passed;**
Red=Failed).

| Full description of user story | Acceptance test(s) | Name(s) of contributing Developer(s) |
|---|--|--------------------------------------|
| <i>As a driver I can perform searches for parking</i> | <p>Test with inputs</p> <ul style="list-style-type: none"> > Search for parking based on address <p>Expected outcome:</p> <ul style="list-style-type: none"> > Parking near address displayed <p>Test with inputs</p> <ul style="list-style-type: none"> > Search as a driver <p>Expected outcome:</p> <ul style="list-style-type: none"> > None. Roles not defined | Mustafa Butt |
| <i>As an officer I can perform searches for parking so I can find expired/unpaid parking spaces near me</i> | <p>Test with inputs</p> <ul style="list-style-type: none"> > Search for parking based location <p>Expected outcome:</p> <ul style="list-style-type: none"> > Parking near device shown <p>Test with inputs</p> <ul style="list-style-type: none"> > Search as an officer <p>Expected outcome:</p> <ul style="list-style-type: none"> > None. Roles not defined <p>Test with inputs</p> <ul style="list-style-type: none"> > Search based on parking status <p>Expected outcome:</p> <ul style="list-style-type: none"> > None. Parking status not accessed | Mustafa Butt |

| | | |
|---|---|---------------------|
| <p><i>As a driver I can see home screen so I can (i) Login/Register (ii) Find Parking (iii) Make a reservation</i></p> | <p>Test with inputs</p> <ul style="list-style-type: none"> > Home screen display <p>Expected outcome:</p> <ul style="list-style-type: none"> > Home screen displayed <p>Test with inputs</p> <ul style="list-style-type: none"> > Login/Register option shown <p>Expected outcome:</p> <ul style="list-style-type: none"> > None. Option not coded. <p>Test with inputs</p> <ul style="list-style-type: none"> > Reservation option shown <p>Expected outcome:</p> <ul style="list-style-type: none"> > None. Option not coded. | <p>Mustafa Butt</p> |
|---|---|---------------------|

3.0 CONCLUSIONS

While a couple of the user stories have been only mostly developed, the majority remain incomplete. In addition, critical aspects of development, such as user roles, have also not been developed. However, the user stories that have been developed pass the acceptance tests, as they were developed according to the requirements of the user stories.

CREDITS, LICENSE, AND REFERENCES

Credits

NA

License

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References

[1] Cohn, Mike. 2004. *User Stories Applied: For Agile Software Development*, Addison-Wesley Professional.

APPENDIX A (DESIGN DOCUMENT)

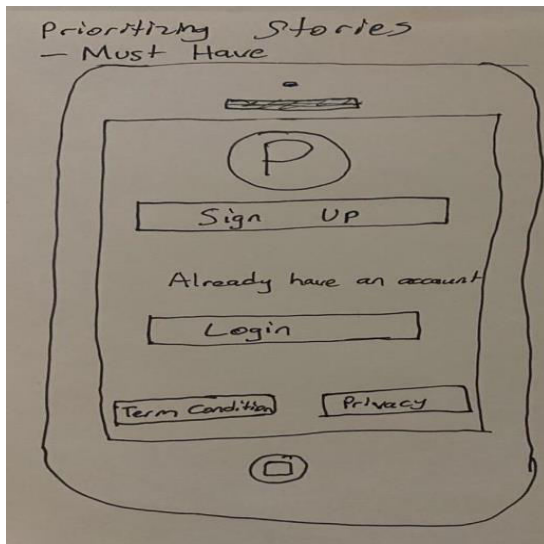


Image 1.1

- 1) As an officer I can see home screen so I can Login
- (i)
- 2) As an administrator I can see home screen so I can Login

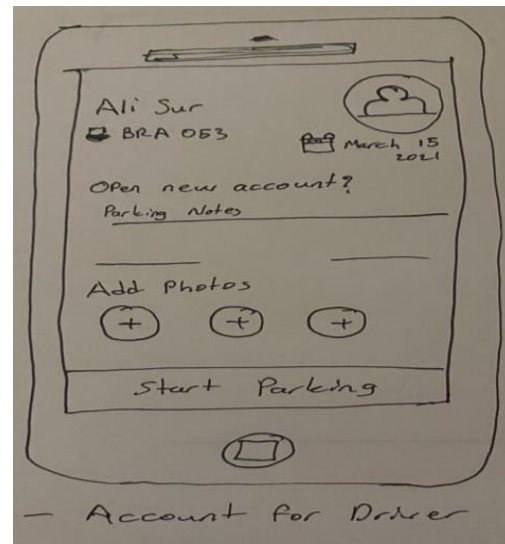


Image 1.2

- As a driver I can see home screen so I can Login/Register (ii) Find Parking (iii) Make a reservation

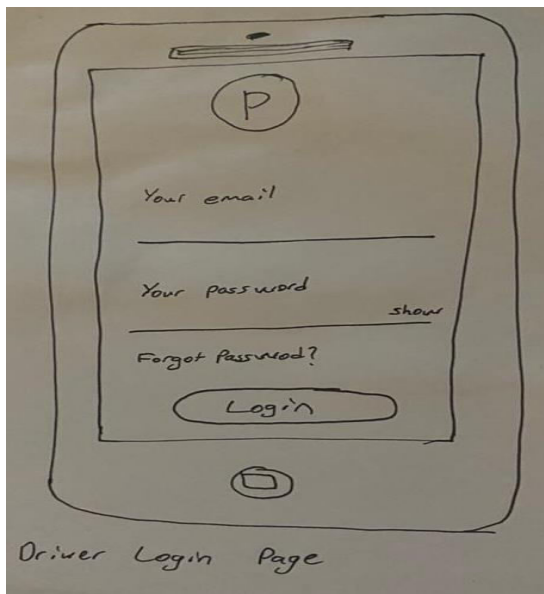


Image 1.3

- As a driver I can login to my account so I can access my (i) profile and (i) history.

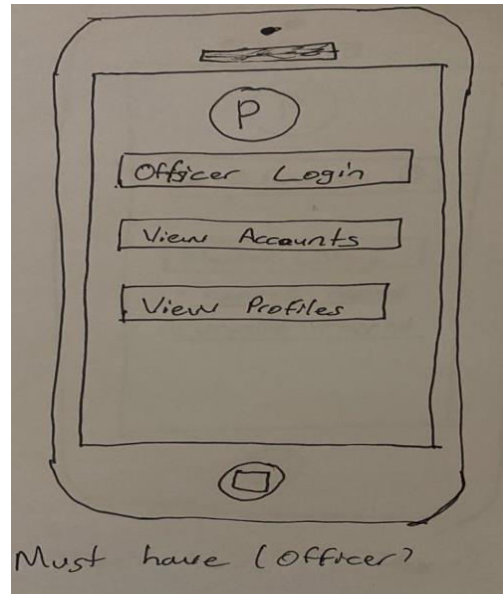


Image 1.4

- As an officer I can login to my account so I can access my (i) profile

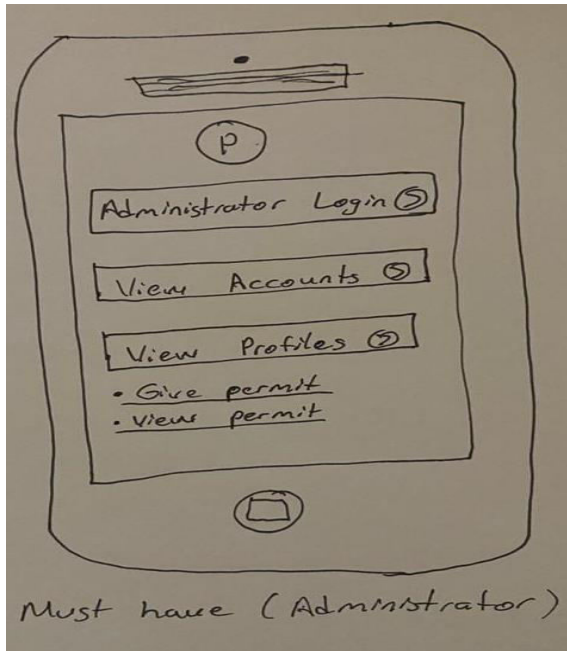


Image 1.5

As an administrator I can login to my account so reservations so I can (i)
I can access my (i) profile

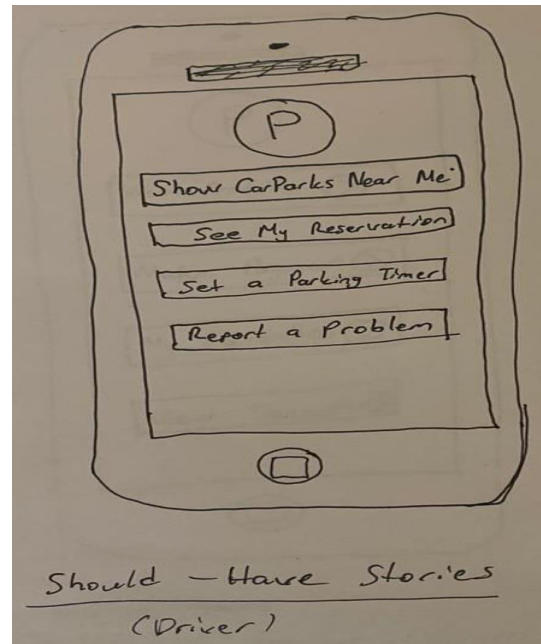


Image 2.1

As a driver I can manage my
cancel, (ii) extend or (iii) view



Image 2.2

As a driver I can see the list of parking options so
options so
I can select one to book



Image 2.3

As a driver I can see the list of parking
I can select one to book

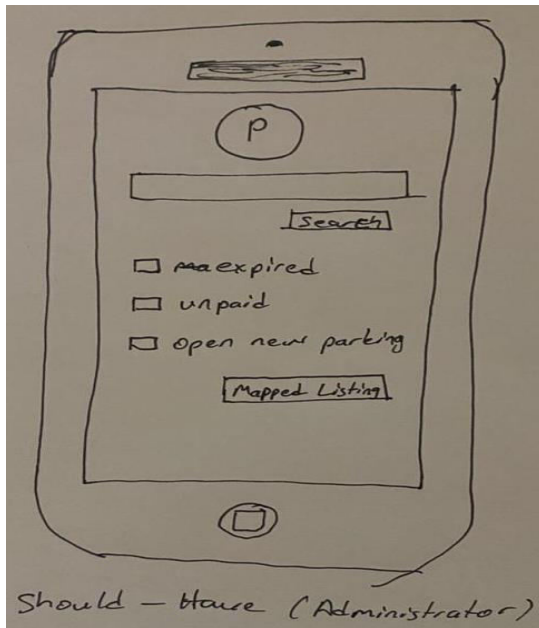


Image 2.4

As an administrator I can see a list of (i) reservations listing of expired, and (ii) notifications the

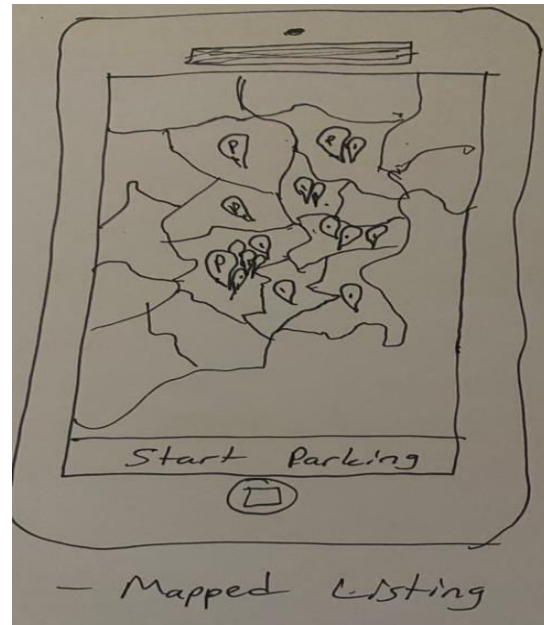


Image 2.5

As an administrator I can see a map unpaid, open parking options so I can administer parking lot

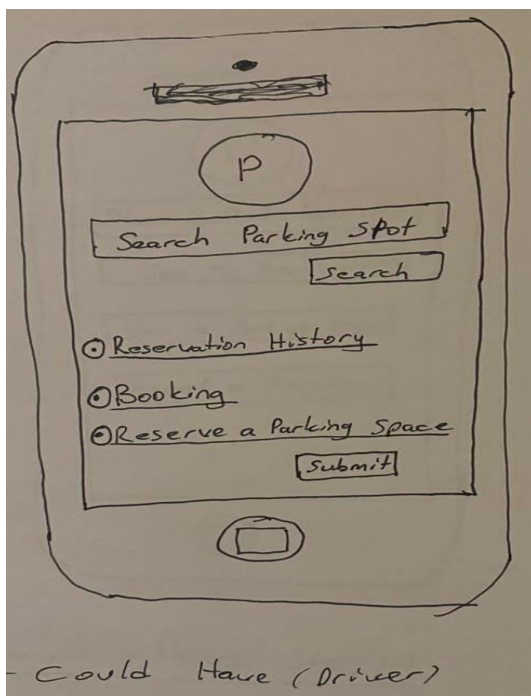


Image 3.1

1) As a driver I can perform searches for parking parking so I

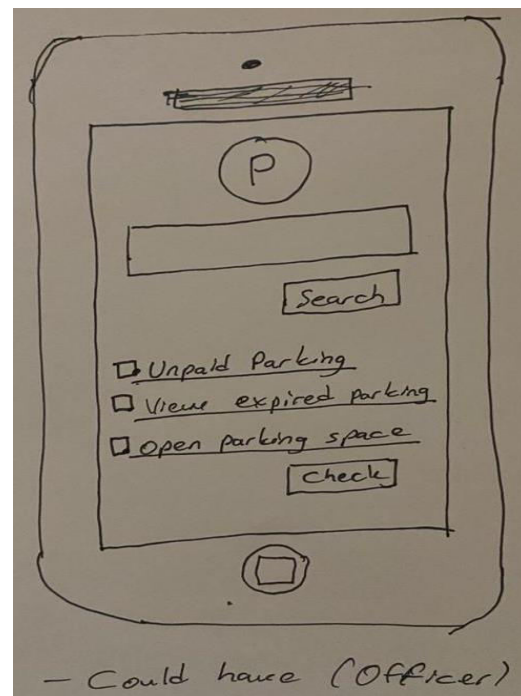


Image 3.2

As an officer I can perform searches for

2) As a driver I can book a parking space so I can (i) confirm my booking, (ii) configure its details and (iii) pay for my booking
 can find expired/unpaid parking spaces

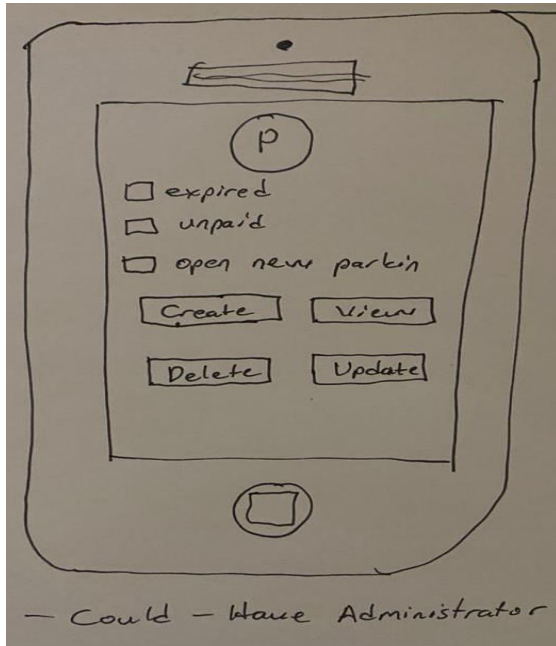


Image 3.3

As an administrator I can manage reservations so I can (i) parking lot so I can view, (ii) create, (iii) update, (iv) cancel reservations spaces at the lot

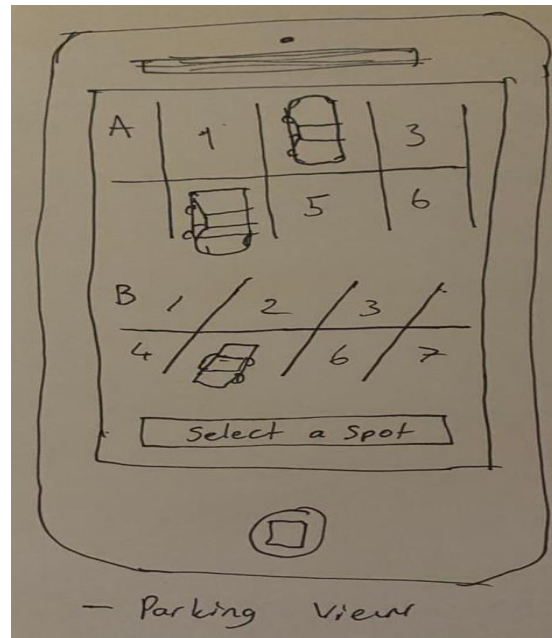


Image 3.4

As an administrator I can select a view all expired, unpaid, open parking

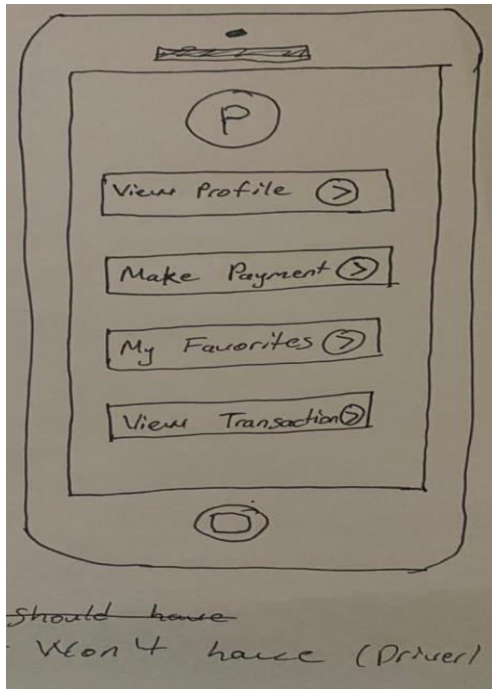


Image 4.1

As a driver I can access my profile so I can (i) set my preferences and (ii) access my favorites

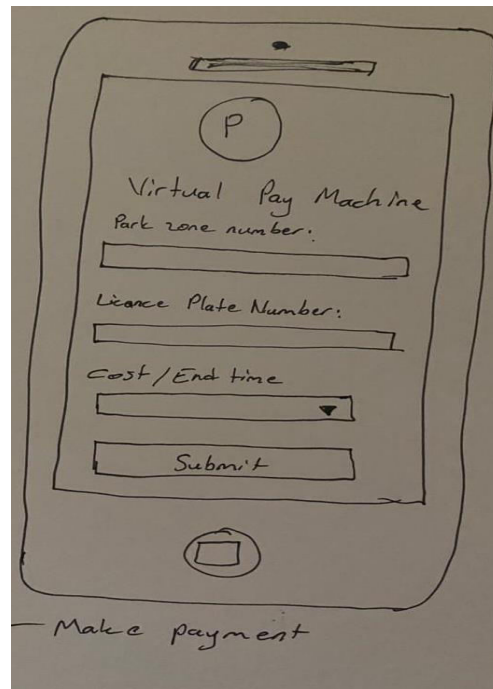


Image 4.2

As a driver I can make a payment so I can complete my transaction

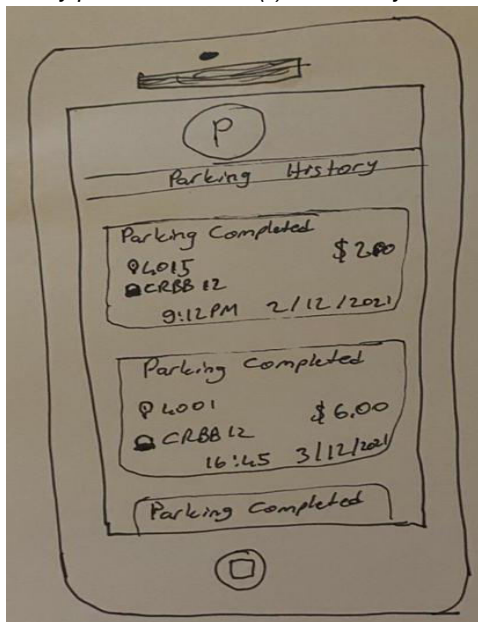


Image 4.3

As a driver I can access history so I can see (i) my profile
my reservation history and (ii) parking history preferences

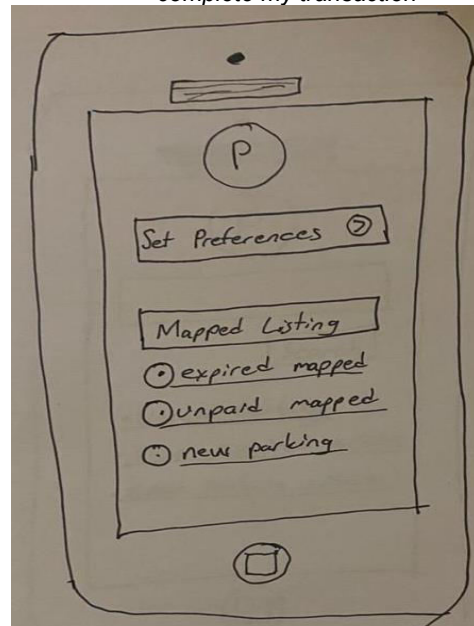


Image 4.4

As an administrator I can access
so I can (i) set my

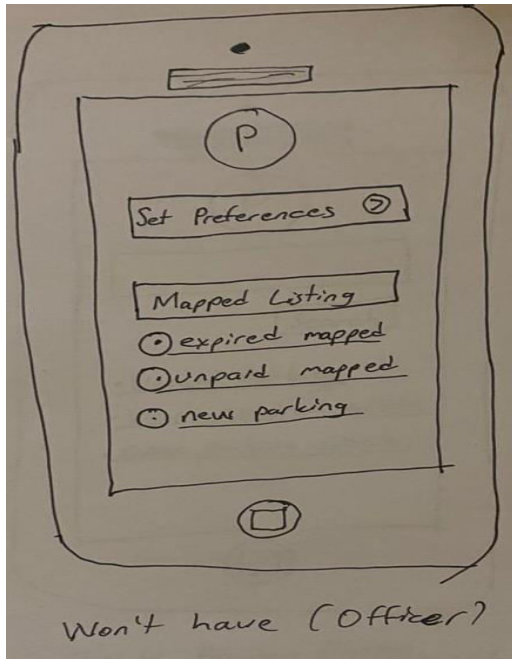


Image 4.5

As an officer I can access my profile so I can expired/

(i) set my preference

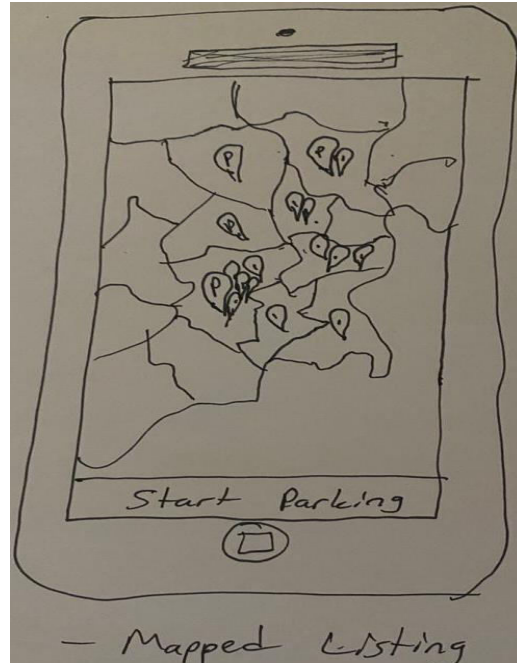


Image 4.6

As an officer I can see a mapped listing of unpaid parking spaces so I can enforce the law

APPENDIX B (TEST PLAN)

1.0 Introduction

1.0.1 Goals

Bug discovery: The immediate goal of testing is to find errors at any stage of software development. More the bugs discovered at an early stage, the better will be the success rate of software testing.

Quality: Though quality depends on various factors, such as correctness, integrity, efficiency, etc., reliability is the major factor to achieve quality. The software should be passed through a rigorous reliability analysis to attain high-quality standards.

Risk management: Risk is the probability that undesirable events will occur in a system. These undesirable events will prevent the organization from successfully implementing its business initiatives.

Customer satisfaction: From the users perspective, the prime concern of testing is customer satisfaction only. Testing should be complete in the sense that it must satisfy the user for all the specified requirements mentioned in the user manual, as well as for the unspecified requirements, which are otherwise understood.

1.0.2 Assumptions

- The Test environment will be available by the start date given in the schedule for executing the test scripts, and sign-off has been forwarded to the Test Team Leader.

- The object code will be fully unit and integration tested and made available on the Test environment by the date(s) given in the schedule for executing the test scripts and sign-off has been forwarded to the Test Team Leader.
- The various specifications related to the Release will be the basis for testing the functionality of each release of PlacePark SYSTEM. These documents will be available to the Test Team Leader by the start date given in the schedule for preparing test scripts for each release.
- Testing of non-English editions of PlacePark SYSTEM will be executed by individuals who are able to read English, since the standards and requirements documents are written in English.

1.0.3 Risks And Assets

- Tight timelines.
- Undefined project scope.
- Insufficient resources.
- Continuously changing requirements.
- Natural disasters

2.0 Scope

2.0.1 Features To Be Tested

User Login function, Manage reservation function including extend, cancel and view, View map listing of expired, unpaid, open parking options function. Find expired/unpaid parking spaces near me function

2.0.2 Features Not To Be Tested

Administrator Login function, Officer Login function - Same functions with user login function.

3.0 Testing Procedures

Describe the testing procedures that the project will use. This includes the test lifecycle, types of testing, test objectives, and test criteria.

3.0.1 Test Objectives

- To increase the likelihood that the application intended for testing will work correctly under all circumstances.
- To increase the likelihood that the test application will meet all of the requirements described.
- Providing up-to-date information on the status of the product at the moment.

3.0.2 Types Of Testing

Describe the types of testing that the project will use.

3.0.2.1 *Unit Testing*

A level of software testing where individual units / components of a software are tested. The purpose is to validate that each unit of the software performs as designed. Manage reservation functions including extend, cancel and view will undergo unit tests.

3.0.2.2 *Integration Testing*

A level of software testing where individual units / components are combined and tested as a group. The purpose of this level of testing is to expose faults in the interaction between integrated units.

3.0.2.3 Acceptance Testing

The customers, users and stakeholders will decide to approve the application/software or not.

3.0.2.4 Stress Testing

- Application is under stress when user's memory is lower than 2GB
- Application is under stress and gives error messages when users turn off their GPS system.
- Application is under stress with more than 100,000 concurrent users use the application.

3.0.2.5 Performance Testing

Reservation functions have sufficient response time, stability, reliability, scalability and resource usage of a software application under normal workload.

Login functions have sufficient response time, stability, reliability, scalability and resource usage of a software application under normal workload.

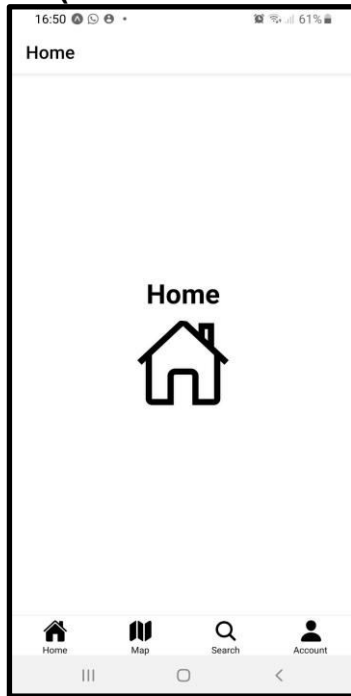
View map listing functions have sufficient response time, stability, reliability, scalability and resource usage of a software application under normal workload.

Find expired/unpaid parking spaces near me functions have sufficient response time, stability, reliability, scalability and resource usage of a software application under normal workload.

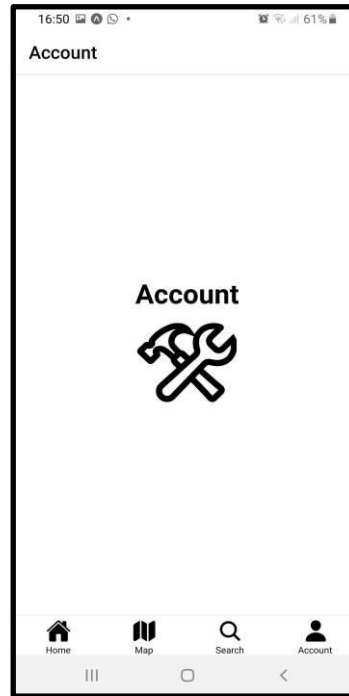
3.0.3 Testing Tools

VS Code, Expo, Android Simulator.

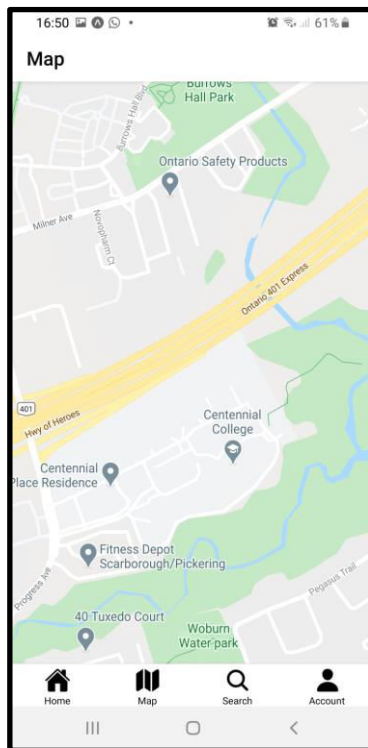
APPENDIX C (END-USER & ADMINISTRATOR MANUALS)



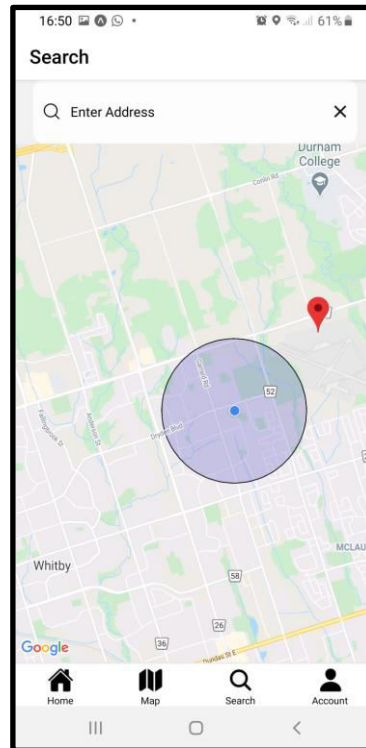
Home Screen undeveloped



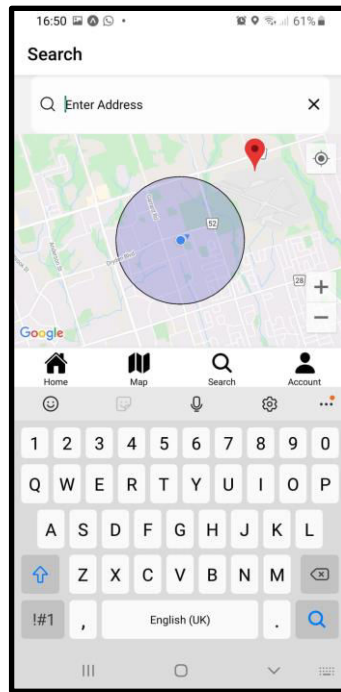
Account Screen undeveloped



Basic Map used in development

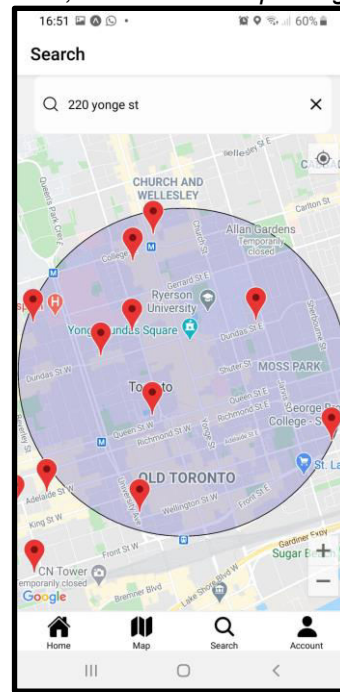


Search Screen opens with user

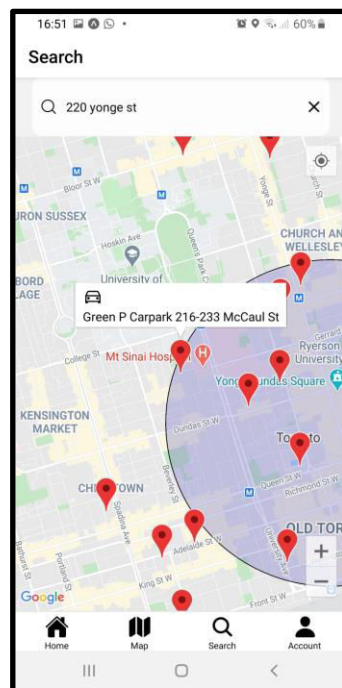


Clicking Search bar prompts keyboard popup for user entry of address

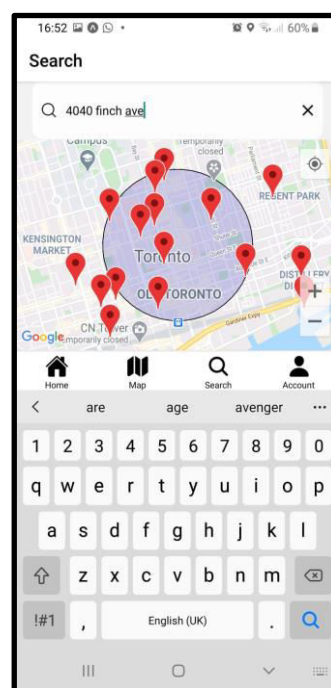
location, shows nearest parking



Map loads & Displays all parking spaces around the address



Clicking Marker displays details card for the parking spot



User can continue to search for parking at different addresses

APPENDIX D (PROGRESS MONITORING)

Progress Monitoring II

3. Progress & Changes Table

| | Iteration I | Iteration 2 (Special Iteration I) |
|---|-------------|---|
| Story points at start of iteration | 57 | 45 |
| Completed during iteration | 0 | 17 |
| Changed estimates | 10 | 0 |
| Story points for new stories | 0 | 0 |
| Story points at end of iteration | 67 | 28 |

4. Burndown Chart (**EXAMPLE BELOW**)

