

PARK FREE



Comp 3450
Final Project

The Team

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4th year Computing Science student

Specialties: HTML5, CSS, JavaScript

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4th year Computing Science student

Specialties: HTML5, JavaScript, PHP

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4th year Computing Science student

Specialties: HTML5, JavaScript

Project Proposal

Problem space – TRU Parking System

Our project is aimed at easing TRU parking congestion by providing real-time updates for users (students and staff) to view the current parking availability for different parking lots at TRU and plan their route accordingly before leaving their house, rating their experiences and the accuracy of the data at the end of their journey.

Target Users

TRU students and staffs

Usability and UX Goals

Usability Goals

1. Efficiency
2. ~~Safety~~
3. Learnability
4. Memorability

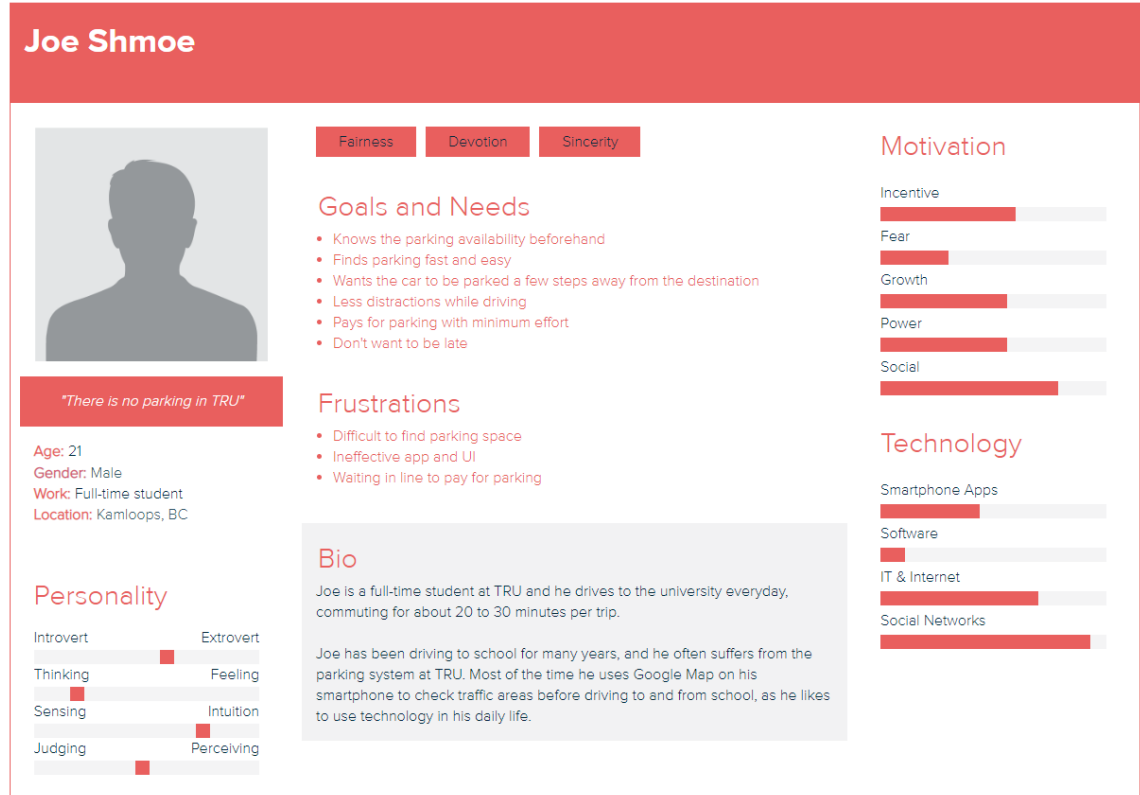
UX Goals

1. Simple
2. Intuitive
3. User-friendly
4. Helpful

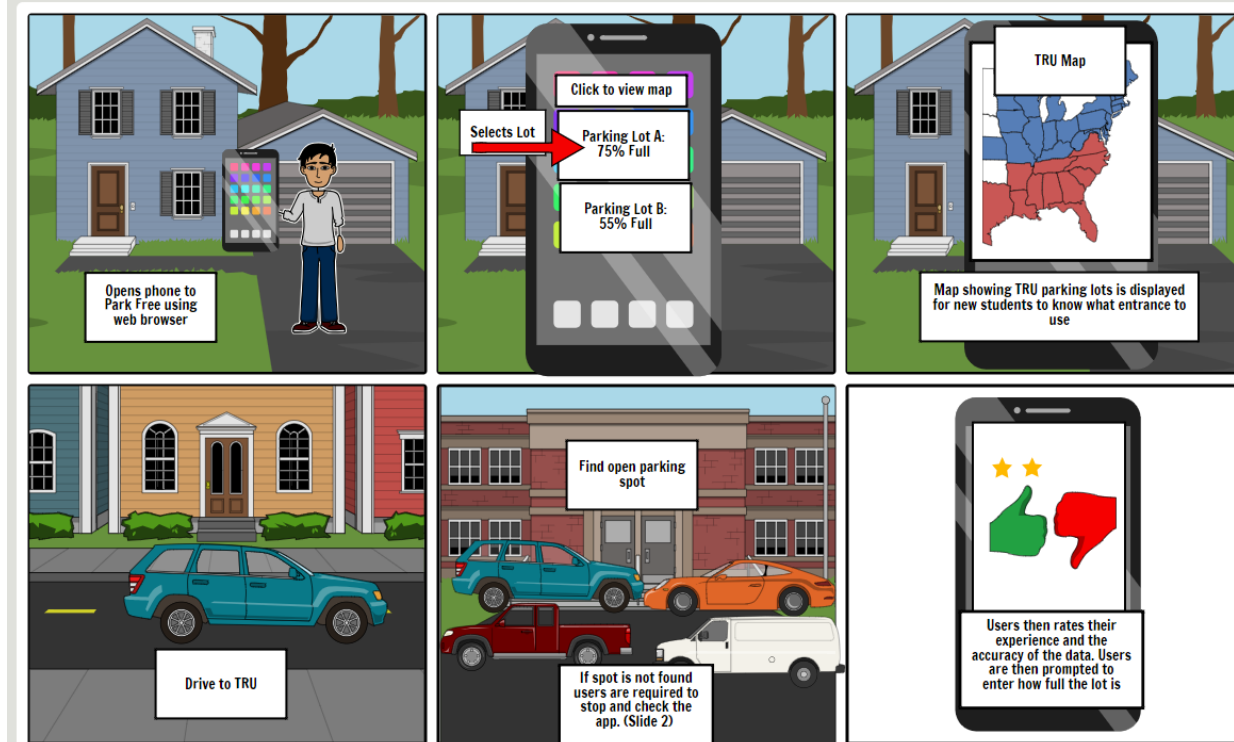
Requirements

Persona

- Full-time student
- Sufficient knowledge about web technology
- Very good with social networks
- Drives to TRU



Storyboard



Data Gathering

Goals

1. To identify how many of the users struggle to find a parking spot at TRU
2. How many users find a spot in the first attempt.
3. The time it takes for the users to find a spot on average.
4. How the time of day and date affect parking availability.

Gathering techniques

semi-structured interviews with open questions

Demographic & Targeting Data Gathering

Demographic data

1. Gender: 60% of our participants are male, and 40% are female
2. Age range: between 20 to 25
3. Education: our participants are from various faculties in TRU such as Science, Business, and Arts

Targeting data

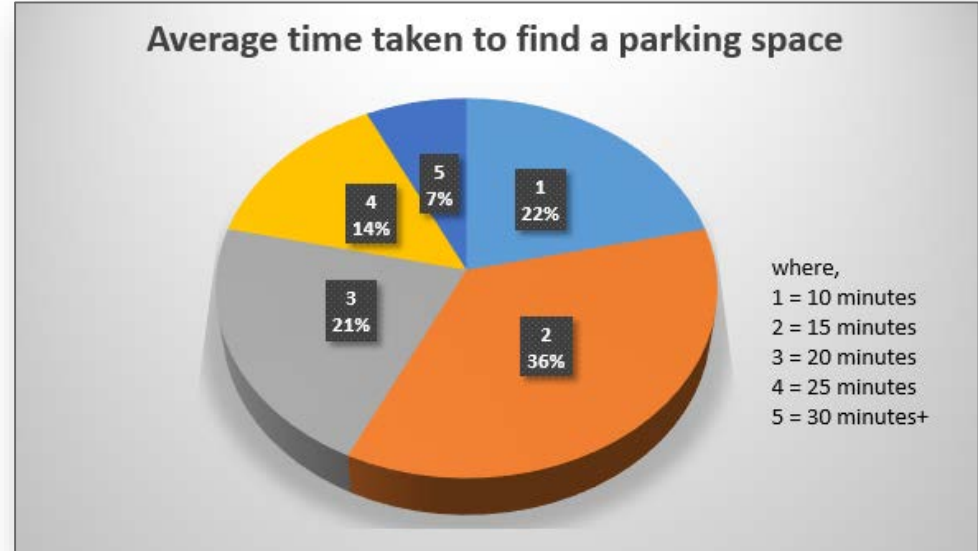
1. What do they think of the current TRU parking system
2. How satisfied are you with the current TRU parking.
3. how long does it take you to find a parking spot at TRU
4. How much time will you save knowing a parking spot available when you reach TRU.
5. What platform do they prefer, mobile or web portal?
6. What are the must-have functionalities do they want?

Data Analysis and Interpretation

Chart shows average time users take to find a parking spot at TRU

Findings

- Most parking lots are almost full around 11:00 until 14:00
- Average time to find a parking spot is about 10 - 25 min
- Driving around looking for parking spot is very frustrating and is a waste of fuel.
- Users want the web application to be able to work on mobile devices
- We also found that users are tending to choose otherwise e.g. walk or take the bus in order to avoid the frustration of finding parking.



For example, 36% of the participants usually spend 15 minutes to find a parking spot.

Design Alternatives

Low-Fidelity Prototypes

Techniques/Tools

- ☐ AxureRP

Problems

- ☐ Limited functionality
- ☐ Clear instructions
- ☐ User data (names)

<https://x38you.axshare.com/home.html>

Park Free

Home Locations Contact

The Best Way To Find Parking At TRU

Select First Name Last Name Submit

Save Time
It's easy to compare parking at all major airports. Booking a reservation is quick & simple!

Save Money
It's easy to compare parking at all major airports. Booking a reservation is quick & simple!

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High-Fidelity Prototypes

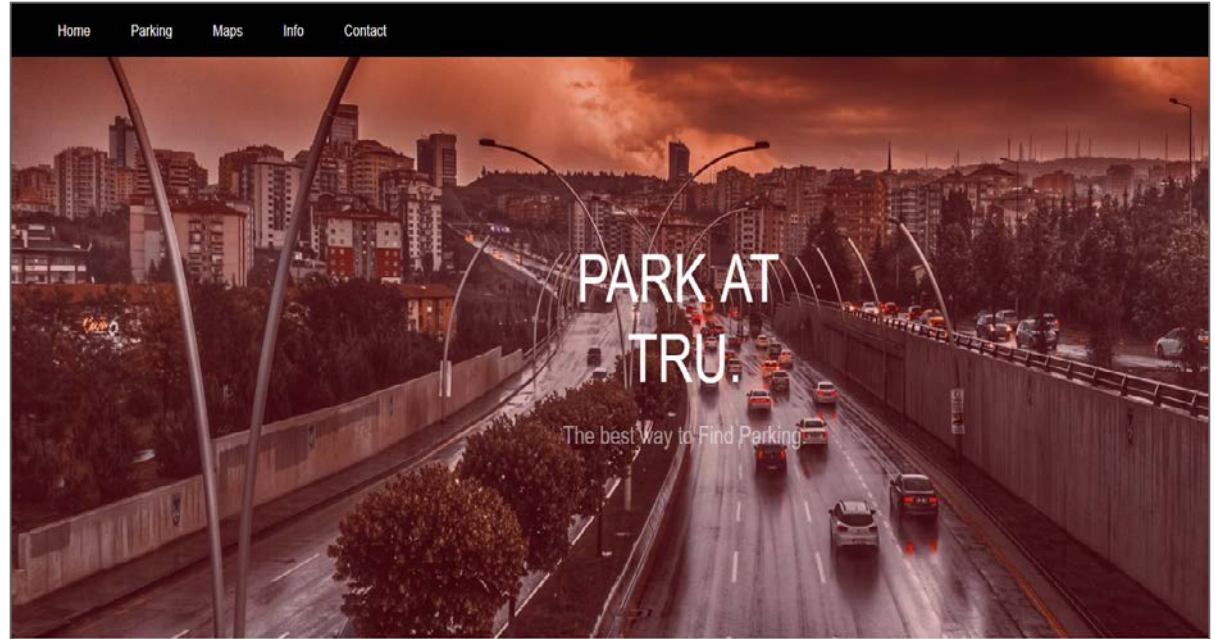
Techniques

- ❑ CSS, JavaScript

Challenges

- ❑ Trying to work with fuzzy logic

<https://mfahad07.github.io/index.html>



Evaluation

Methodology

Methods

1. Direct observation study
2. Notes (using notes to collect data)
3. watch user's interaction with our project
4. Participants do not feel comfortable with audio and video recordings

3 tasks we asked our participants to perform include:

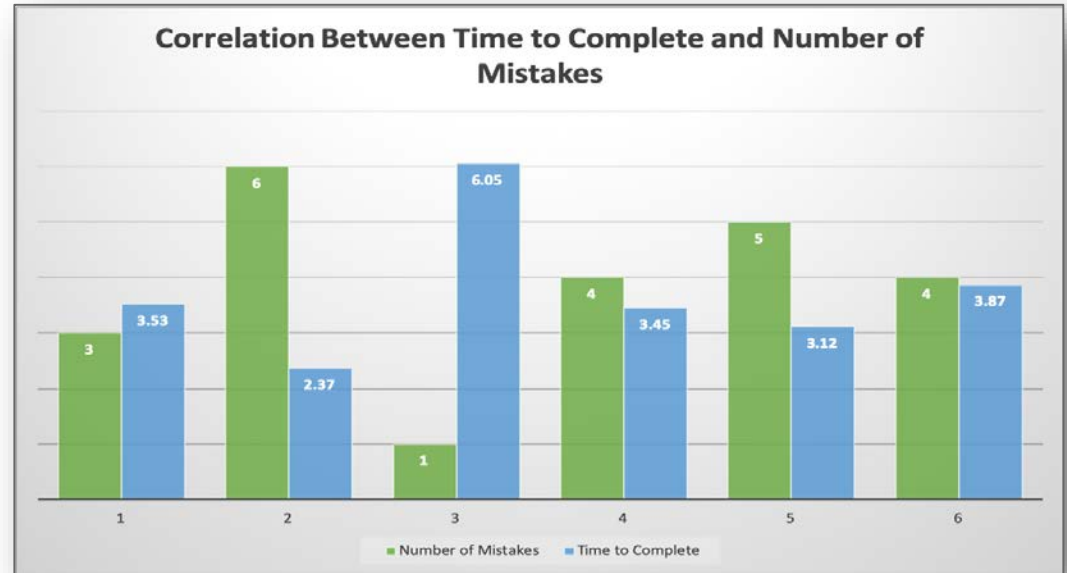
1. Navigate to find the map for their specific parking permit.
2. Get the information, check availability for a specific parking lot (e.g. for lot E).
3. Input their feedback for a specific parking lot (e.g. for lot E).

Data to Collect

1. How long does it take for a participant to finish each task
2. The number of mistakes made by a participants
3. Possible distractions for participants to take their attention away from original task
4. The number of participants who completed the tasks successfully
5. Some demographic data about the participants, such as age range and gender

Analysis

- Person with the fastest completion time made highest number of mistakes
- Person with slowest completion time made lowest number of mistakes
- Users did not want to spend enough time reading the instructions on the website thus making the mistakes.



Shows a relationship between the number of mistakes and the time to complete the tasks

Feedback

List of things that need to be improved

1. Getting the accuracy level of the data to a near perfect
2. Add a help page with more detailed instructions for each functionality
3. Adjust the color and contrast to help users see important objects better
4. Might have to readjust the size of some objects so that it can give hints to users which objects are more important than others
5. Have confirmation window before submitting an input

DEMO

THANK YOU