

Toronto Tube

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Problem Space

How can we streamline the payment experience for TTC riders?

Toronto is one of the most known cities in Canada, attracting thousands of tourists each year. With the current pandemic, many people are cautious about touching common surfaces. Having contactless payment methods on public transit may make users more comfortable with taking the TTC during this time.

My target audience is the tech savvy Millennial and older Gen Z age group who have adapted to contactless payment already such as Apple Pay.

Rather than having to carry multiple different bank and membership cards, many businesses have adapted to storing their user's information on an app or mobile wallet.

Solution

For new comers who just moved to Toronto, or visitors who want to explore the city, this Contactless Payment method allows the riders to have a much more seamless experience when riding the TTC. Rather than having to buy a pass at Shoppers Drug Mart, or last minute at a station, riders can just scan a QR code at a station to purchase a mobile card to load and ride the TTC as much or as little as they want.

My app is like [PC Optimum](#), [Stocard](#), and [Apple Pay](#) but for *TTC riders* to create a *more seamless payment experience*.

Whether they are infrequent TTC riders or people who just moved to the city, Toronto Tube is an app that allows its users to get from A to B without any detours.

Persona

Name: Emily Hueng

Age: 29

Profession: Software Developer at KPMG

Being a software developer, Emily is an advanced user of technology and uses it for almost everything. Working long hours throughout the week, she relies heavily on online subscriptions and delivery for her convenience. She is an avid user of apps since it easily stores her information, rather than uploading her card information all the time, such as Uber Eats, Ritual, and Apple Pay.



Emily lives with her partner and they recently moved to Toronto, from Hamilton, for a new job. They both rely on public transportation to run errands and get around the city but has a car for getting out of the city or for emergencies. Although they have a car, they only use it about twice a month. Emily prefers to take public transit because driving and parking in Toronto is stressful enough and thinks there is too much traffic to drive through everyday. Living downtown, she has easy access to streetcar and subway lines. Most of the time, Emily only brings her phone with her when running errands because she prefers to use Apple Pay so she does not have to carry anything extra with her and dig through her purse to find her wallet. Before she moved to Toronto, she used to visit frequently to see her friends and would take Uber or Lyft to get around, but since she is living in the city now, she thinks it is more cost efficient to have a TTC transit pass.

As an avid traveller, she has been exposed to many different types of public transit options, and heavily prefers transit systems where you can just purchase online so that there is no language barrier. She highly admired New York and London's use of contactless ticketing where anyone boarding a bus or train can pay just by swiping their card of payment card on their phone.

Meet Emily, an early adopter and advance user of technology that is of convenience to her daily activities.

Pain Points	Lifestyle	Goals and Needs
<ul style="list-style-type: none">Impatient driving in trafficHates having to find parking and parallel parkingWaiting for late streetcars/subways/buses	<ul style="list-style-type: none">Likes the freedom of "not thinking or worrying" while on transitIncredibly tech savvyHeavy user of public transitOn-the-go most of the day	<ul style="list-style-type: none">Be able to store payment info and transit card info on mobileNotifications of her most used lines/trip routesNotifications of when next streetcar/bus/subway will be arrivingQuickest way to get from A to B

Research

Netnography (Reddit r/TTC)

- Most forums discuss the new lines being made to expand subway
- Memes of how slow the development/upgrades of certain stations and areas
- Some videos being shared of comparing TTC to other transit systems around the world
- Overall, sentiment is moderate about TTC. No one outwardly hating TTC or praising it either
- More of a question forum about developments of TTC and how it can be improved based on examples of transit systems in other cities around the world

Auto-ethnography

- All 3 interviewees agree that they go out of their way to ride the streetcar to avoid the bus (unless that is the only option to get somewhere)
- Since COVID, it has been several weeks since they last rode TTC
- Radius of travel has decreased to where they can walk by foot only except for important appointments (i.e. Doctors/specialist appointment)
- P1 has decided to bike everywhere they would normally ride TTC to despite the weather
- P2 & P3 has access to a car and has driven a lot more than normal
- P2 & P3 says they typically used the car once every 2-3 weeks before pandemic, now at least once a week to run errands
- All participants agree that they have to strategically plan their travels outside, whether to block of time in their work calendar to walk to appointments, or would drive
- All participants agreed that it was "only a matter of time before I become a regular TTC rider again"
 - Waiting for at least most of the population to have vaccine

Research

Questions For Participants

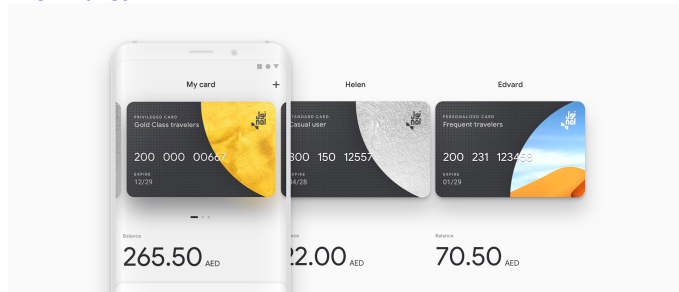
- When was the last time you took the TTC?
 - When was the last time before that?
- Would you feel safe taking the TTC right now? Why/why not?
- Have you gone out of your way to avoid taking the TTC?
 - Can you tell me an example of a time you did that?
- Do you feel comfortable taking the TTC?
 - How did you feel riding it?
- Tell me how you typically used the TTC before COVID
- Would you say your radius of travel has decreased since COVID?
- What kind of user would you consider yourself as a TTC rider?
- Is there anything you don't like about the TTC?
 - What do you like about it?
- When do you think you will feel comfortable taking the TTC again?
 - What changes need to happen for you to feel comfortable?
- What do you think about Presto as a payment method?
- What do you like/not like about Presto?
- When was the last time you went on Presto (app or website)?
 - Are you a user of the Presto app?
- Do you have any final thoughts about Presto or TTC?

Research: Literary Review

UX/UI Case Study: Redesigning a Public Transportation App for a Large Touristic City

This project is not only about redesigning an atypical type of public transportation app, but it also proposes an unconventional concept for a modern public transportation app that can be used in many other cities.

Brave Geeks Team (2018). [UX/UI Case Study: Redesigning a Public Transportation App for a Large Touristic City | by BraveGeeks Team | UX Planet](#)



Topline Argument

Main features should be found right on the home screen, based on main goals of the app

So What?

When the app first starts up, the home screen provides proper information for the user (local or tourists) of how to purchase a Nol card, checking current balance, and storing cards to add balance when needed

Hypothesis

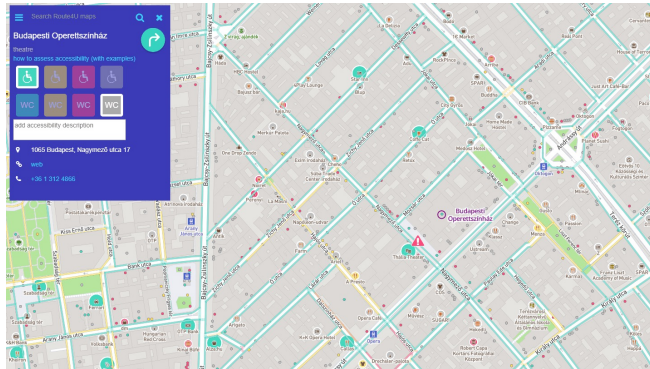
Simplicity and ease of use while on the run is what makes a good app

Research: Literary Review

Best Mobile User Experience Design Practices for Public Transportation Apps

If it's a local app, created for a certain group in a certain region, it should consistently solve a particular problem. This is a solution provided by user-experience design experts

Altexsoft (2019). [Best Mobile User Experience Design Practices for Public Transportation Apps | AltexSoft](#)



Topline Argument

Travel and local apps are the 4th most popular category in Google Play Store. If created for certain region, it should consistently solve a particular problem (constant updating).

So What?

Based on user/citizen's needs, we can break down an app's functionality down to several categories, starting from user's first encounter with app

Hypothesis

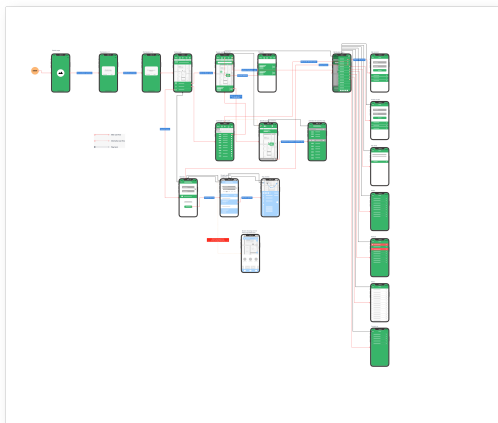
First impressions impact a user's opinion after using an app for the first time

Research: Literary Review

UX/UI Case Study: RTC's App

Design improvements for current RTC transportation app

Jimenez, Yannick (2019). [Redesigning Quebec's public transit app-a UX case study | by Yanick Jimenez | Medium](#)



Topline Argument

It is important to update your app consistently based on user needs and feedback

So What?

Taking inspiration from the top app developers in the same category to optimise the current RTC transportation app

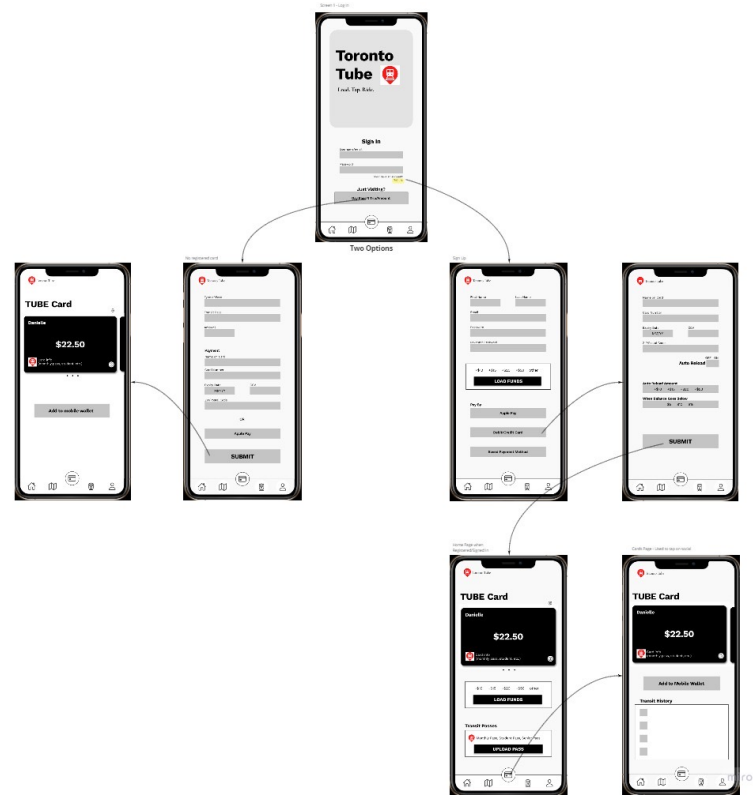
Hypothesis

Competitor analysis is important to evaluate in order to retain customers and users

User Experience Map

With this streamlined payment process, the user is able to access all information related to the TTC in one location. When users first move to Toronto and want to use the TTC, it is not clear where riders can purchase a Presto Pass; not all Shoppers Drug Mart stores carry Presto Passes, and not all subway station entrances lead to a kiosk with a staff member to assist them.

The Toronto Tube app can fill in the gap for riders who are new to the TTC or are only visiting for a short period of time. Rather than having kiosks or finding a Shoppers Drug Mart, users can scan a QR Code at the entrance of subway stations or bus/streetcar shelters to pay their fare.



User Experience Mapping Process

Customer journey mapping

Team

1 Phases - Identify different phases in your customers journey

Compare

Decide

Enroll

Use

2 Actions - Define which actions your customer take during the phases above

Search online
Transit options

Ask friends for
advice

Search online
how to obtain pass

Download App
on phone

Reads Reviews
online + App Store

Register/sign Up

Gather/Fill in
info for sign Up

Set up Card on mobile
wallet

Tapping card/phone when
riding TTC

3 Feelings - Draw a line of emotions with each action to visualise their feelings



What options are there?



How do I use the TTC?

Will I actually use this?

Will this be a quick process?

I can explore the
city now!

It's as simple as Apple Pay

4 Channels - Which channels does your customer use during the defined phases

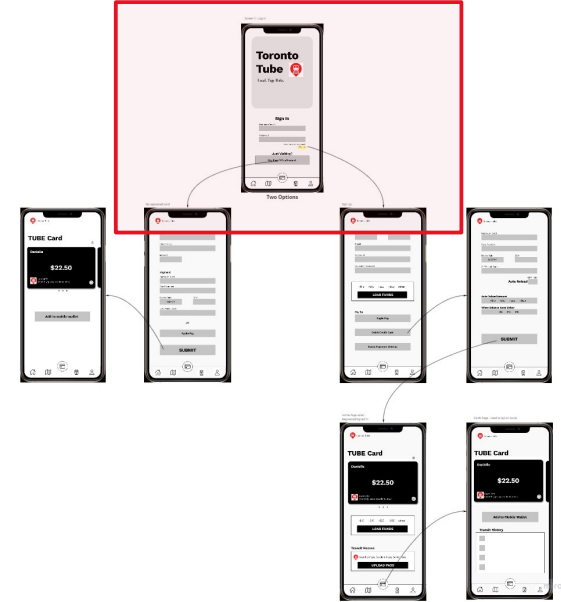
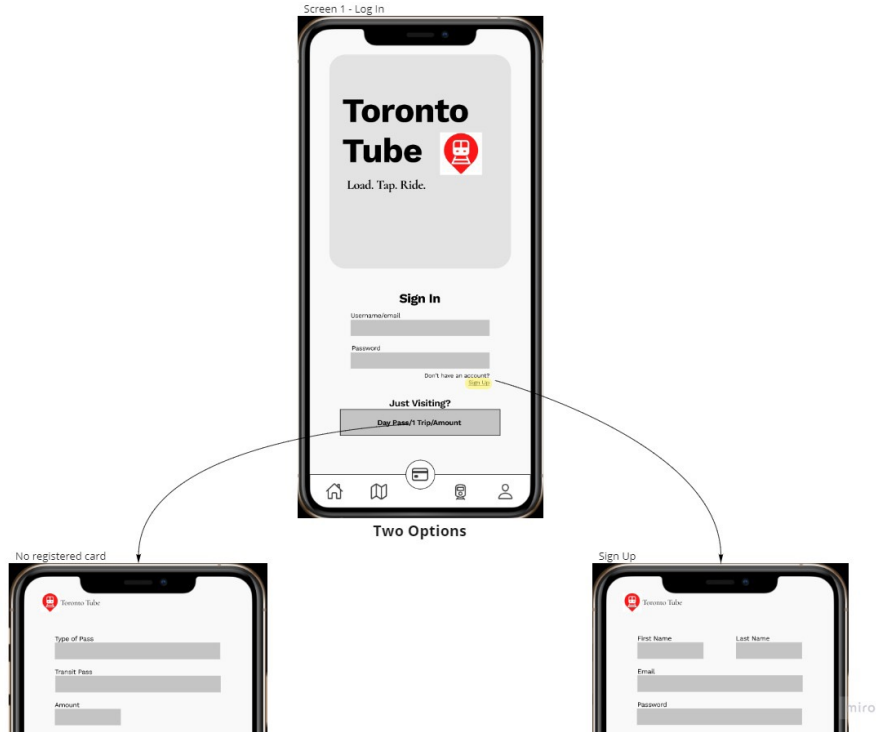
- Website
- Google
- Phone
- App Store

Phone

- QR Code at Station or
Shelter
- Phone App Store

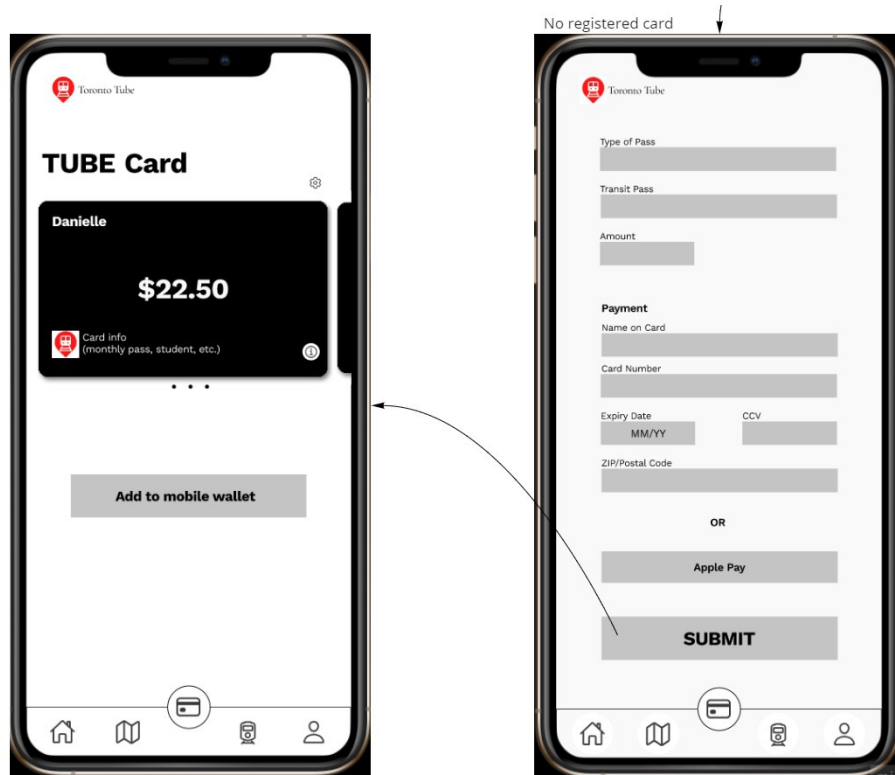
Phone

User Flow



When the user first enters the app, they have **two options** of how they want to register; the user can register for an account that they can set up automatic reloads, or a generic TTC pass.

User Flow – Just Visiting



Users who select **Just Visiting** are led to the payment page (right image) where they fill in the required information to purchase a pass.

Type of Pass – drop down menu with options:

- Adult (18-64)
- Senior (65+)
- Child (12-17)
- Child (11 & under)

Transit Pass – drop down menu with options:

- Single Trip
- Round Trip
- 2-Day Pass
- Load Funds

Users can select the amount of passes they wish to purchase (1-6). If the user selects more than 1, they must fill in the information above for each ticket they are purchasing.

Once they submit their payment information, they are led to the card page (left image) where they can scan their phone to a TTC card reader, swipe per passenger if they have multiple cards, similar to a plane e-ticket on your mobile. The user is also able to see their remaining balance if they loaded an amount. The app is able to store their information if they download the card to their mobile wallet.

User Flow – Sign Up 1

Sign Up

Screen 1: Sign Up

Fields:

- First Name
- Last Name
- Email
- Password
- Re-enter Password

LOAD FUNDS

Options: +\$10, +\$15, +\$20, +\$50, other

Pay By

Options: Apple Pay, Debit/Credit Card, Saved Payment Method

Screen 2: Card Information

Fields:

- Name on Card
- Card Number
- Expiry Date (MM/YY)
- CCV
- ZIP/Postal Code

Auto Reload (OFF/ON)

Auto Reload Amount

Options: +\$10, +\$15, +\$20, +\$50

When Balance Goes Below

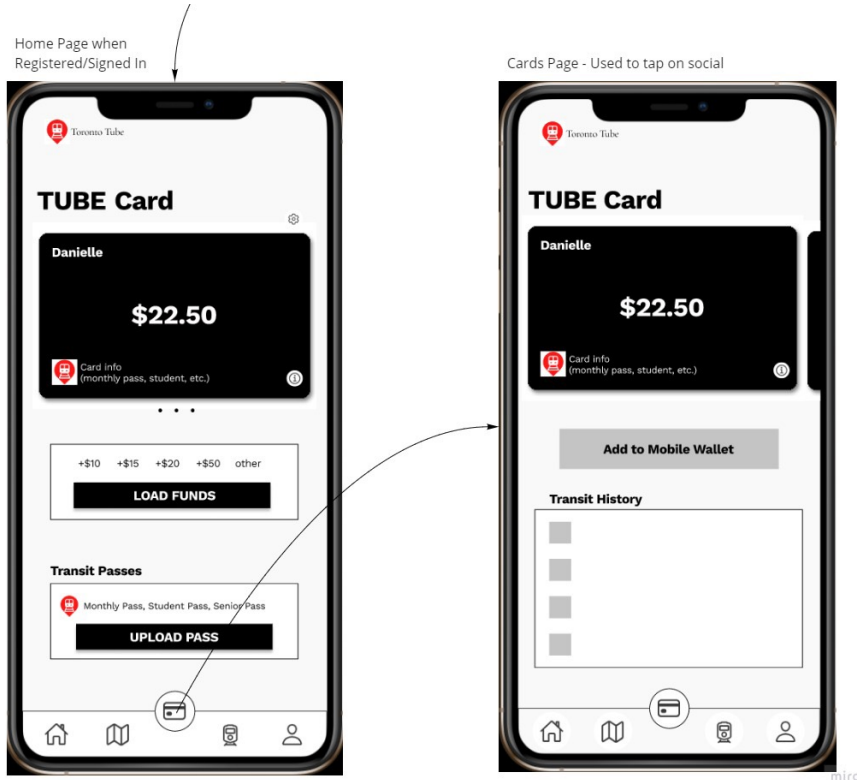
Options: \$5, \$10, \$15

SUBMIT

Users who select **Sign Up** are led to a page where they fill in their information to register (left image) for an account, load their card, and have the option on setting up Auto Reload. If the user selects Apple Pay or a saved payment method, the information on the second screen (right image) is automatically filled.

Auto Reload allows their stored card information to be charged automatically if the balance on the user's card falls below a certain amount, rather than loading it manually. User is able to choose the amount they want to be automatically reloaded as well as the balance of when they want to trigger the automatic reload. The user will receive a notification on the app when their credit card has been charged, as well as an email, should they choose those in the notification setting.

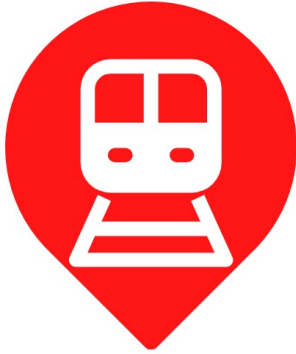
User Flow – Sign Up 2



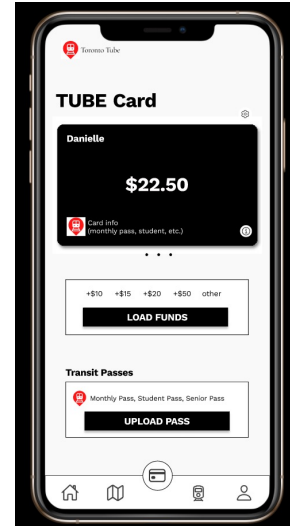
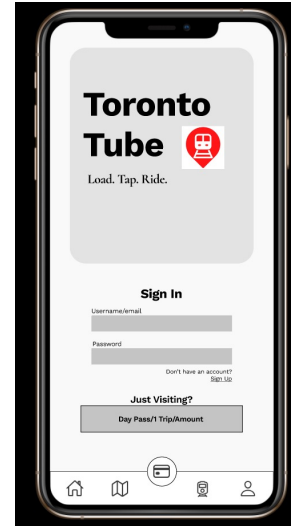
Once the user registers and submits their payment information, they now have a new Home Screen (left image). On the new Home Screen, they are able to see their card balance, upload funds to top up their amount, or register for a Transit Pass.

The user's card button leads them to a screen where they can tap whenever they enter a subway station, or board a streetcar/bus (right image). On the Cards Page, the user has the option to add the card on their mobile wallet (similar to Apple Pay access) and view their 4 most recent rides, and scroll through their transit history.

Style Tile – Toronto Tube



The TTC is most recognisable from it's red logo you can find on the streetcars, busses, subway carriages, and signs around the city. I wanted to create a logo that encompasses that. The red of the logo, is the only colour I use, other than black, white, and gray throughout the entire app.



For the background of the app, I use a very light gray so that the white boxes where most of the main buttons are located is intuitive for the user(ex. menu bar and amount to load funds).

Wireframes/Prototype

MIRO LINK - Wireframe/User Flow

<https://miro.com/welcomeonboard/JcqFr4Vh2jF64onypSBa2Rtewb06NlcbIZIL0E6GLJNsQ2rC6hfY7Rces9mhZYgp>

FIGMA LINK – Wireframe and Prototype

<https://www.figma.com/file/4XL15xFDtQmGQNRxsxw923/Toronto-Tube-App?node-id=0%3A1>