FLUSH FINDER

Project Proposal

Contents

1.0 Team Details

Team Number / Name: Gee-Oh-Three (G03)　　　　**Tute day / time:** Tuesday 11am
Project / Name: Where's the cleanest public loo near me? **Tutor:** Dr Shreya Ghosh

Student	Name	Student Number	Role
1	Hans Wong	20968560	Researcher
2	Harry Walters	19166700	Project Manager
3	Kuldeepsinh Talatia	20872043	User Researcher/Data Analyst
4	Navinda Jayawardhana	20537054	Usability Engineer
5	Ola Malek	19756512	Graphic Designer

2.0 Project Description

Every human has the right to go to the bathroom, but it's not always easy to find a toilet that suits your needs. Why can't it be easy? Team Gee-Oh-Three are proposing an application to support people on their bathroom journey, to navigate to a clean toilet which ticks all of their boxes. Everyone has different expectations on a quality bathroom experience, so we're specifically aiming for a software where users can easily find the closest toilets in their area, and make a choice based on distance, cleanliness, accessibility and affordability.
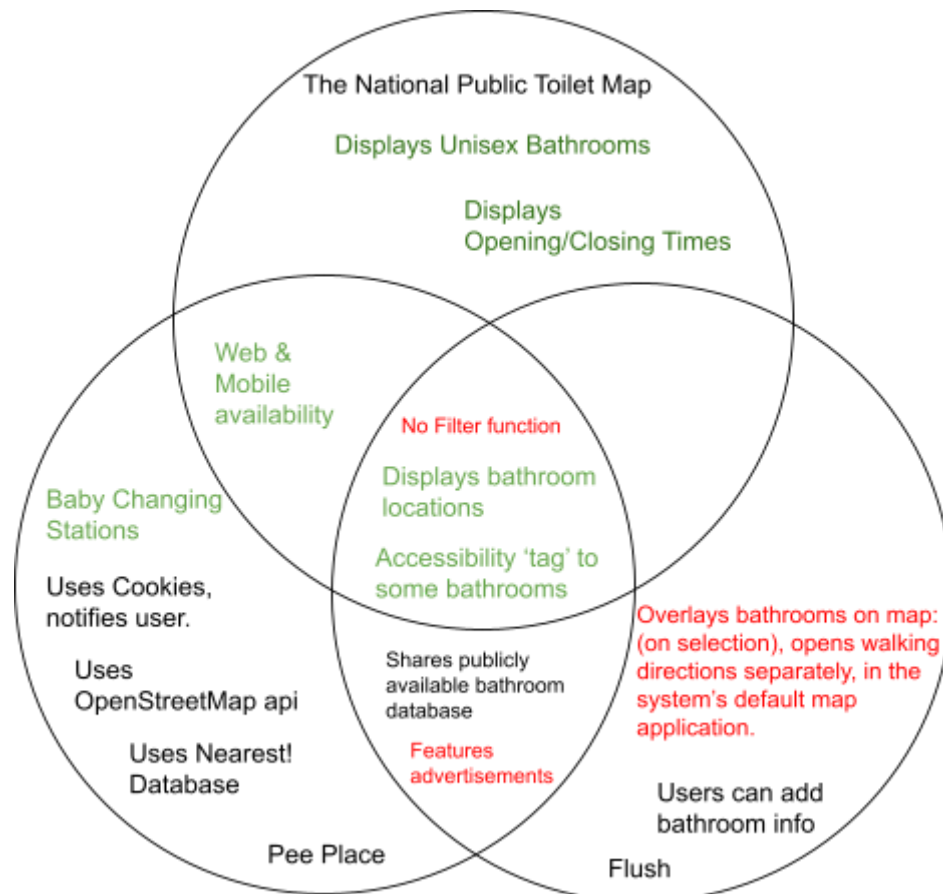
2.1 Why this project? / Background

Team Gee-Oh-Three were drawn to the project's wide and diverse demographic; put simply, everyone needs to go. We recognize not just the convenience of a loo-finder application, but its societal importance, too. The United Nations site clean water and sanitation as an urgent Sustainable Development Goal to complete. (United Nations 2022, #). We want folks to be able to use our software effortlessly, without any breaches of personal privacy or dignity.

As we will discuss, we also believe that previous products have failed to address the needs of those outside of middle-high socioeconomic backgrounds, conventional gender assignment and culturally diverse backgrounds. We currently recognize a singular prerequisite for using the service: access to a device with an internet connection.

2.1.2 Competitor Analysis

Other applications exist, such as Pee Place, the National Public Toilet Map (Department of Health and Aged Care 2022) and Flush. Individually, some of these services offer part of our intended functionalities, but each come with negative reviews over usability and currency issues. (See Appendix A for details).

The National Public Toilet Map

Displays Unisex Bathrooms

Displays Opening/Closing Times

Web & Mobile availability

No Filter function

Displays bathroom locations

Accessibility 'tag' to some bathrooms

Baby Changing Stations

Uses Cookies, notifies user.

Uses OpenStreetMap api

Uses Nearest! Database

Shares publicly available bathroom database

Features advertisements

Overlays bathrooms on map: (on selection), opens walking directions separately, in the system's default map application.

Users can add bathroom info

Pee Place

Flush

While the National Public Toilet Map displayed accessible bathrooms, and opening hours, there was no function to quickly filter the bathrooms of interest. Additionally, there was no ability to receive directions to a selected bathroom. While applications like Flush offered such directions features, they were implemented by loading the device's default map application (taking the user out of the experience). Pee Place was available on both the web and on mobile devices and even included amenities such as baby changing stations, but was filled with obtrusive and distracting advertisements.

From our quick analysis, we recognize that a target application should:
- Allow a user to filter by *some* (TBD) categories
- Allow a user to be directed to the desired bathroom
- Avoid distracting advertisements
- Use a current and updating database to store bathroom locations

We will also discuss with Dr. Ivananova other ideas, such as:
- Allowing user feedback on cleanliness of a bathroom
- Displaying the cleanliness of a nearby bathroom
  - Perhaps using a traffic-light system (red = unsanitary, green = clean)?
- Creating unique user profiles, so users don't have to filter by their preferences each time they use the app

Here's our FigJam work on an initial competitor analysis:
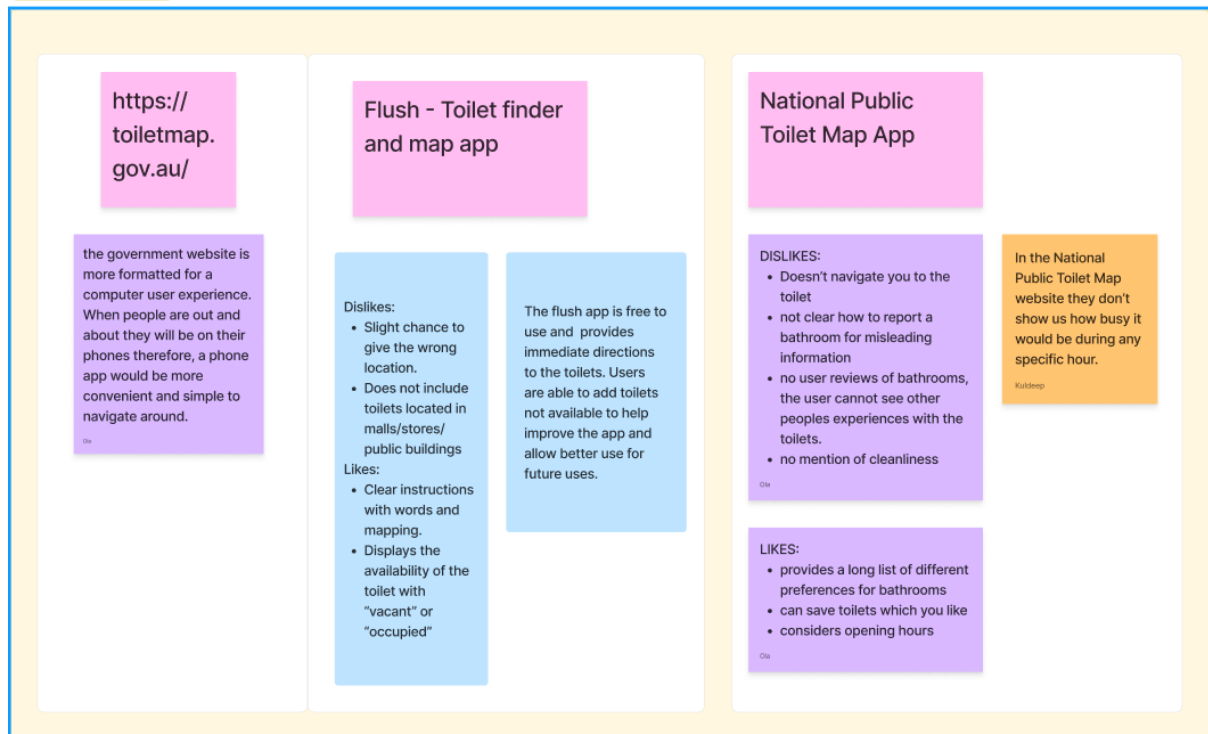
2.2 Design Purpose

While we want to provide folks with a consistent, quality user experience, due to the wide variety of target users, we are striving to find the common pain points amongst folks of all ages, all genders and all abilities.

2.2.1 Goals

1. A simple and intuitive navigation. Users want to be able to quickly and easily find the nearest restroom without navigating through a confusing and cluttered interface.
2. High-quality maps. Maps are essential to a restroom-finding app, accurate and up-to-date maps will directly user experience while also displaying information about the location's accessibility and availability.
3. Attractive, clear, and cohesive visual design. A visually appealing design will increase user engagement while also retaining users. A clear design will make it easier for users to navigate through the app while a cohesive design will create a sense of consistency throughout the app which makes it feel more polished and professional.

3.0 Design Thinking

For the ten week timeframe, we believe a double diamond approach would be most effective in bringing a prototype to fruition. We specifically think that rapid prototyping with feedback is significantly more valuable than a slow and detailed approach.

https://www.designthinking-methods.com/en/
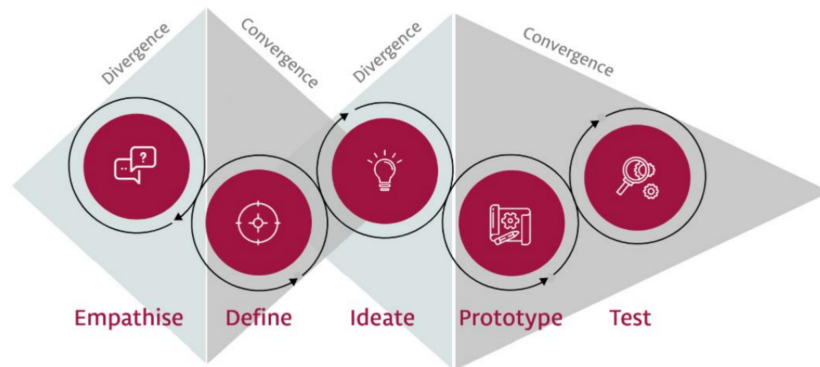
Because of our preference to rapidly ideating and prototyping, an Agile project management style will be taken. We're looking at technologies to assist in our agile development - such as Slack and Trello.

Due to our first meeting with Dr. Ivanova not happening until tomorrow (14th March), some assumptions had to be made in this first week, as to the expectations and functionality of the application. For example, we are assuming that we will develop a platform where users can view the distances and cleanliness of bathrooms within their vicinity, and filter out bathrooms which don't meet those and additional criteria (such as accessibility, opening hours, price, etc.). We are also assuming that this application will be made available on iOS and Android devices as a minimum.

3.1 Interview Questions
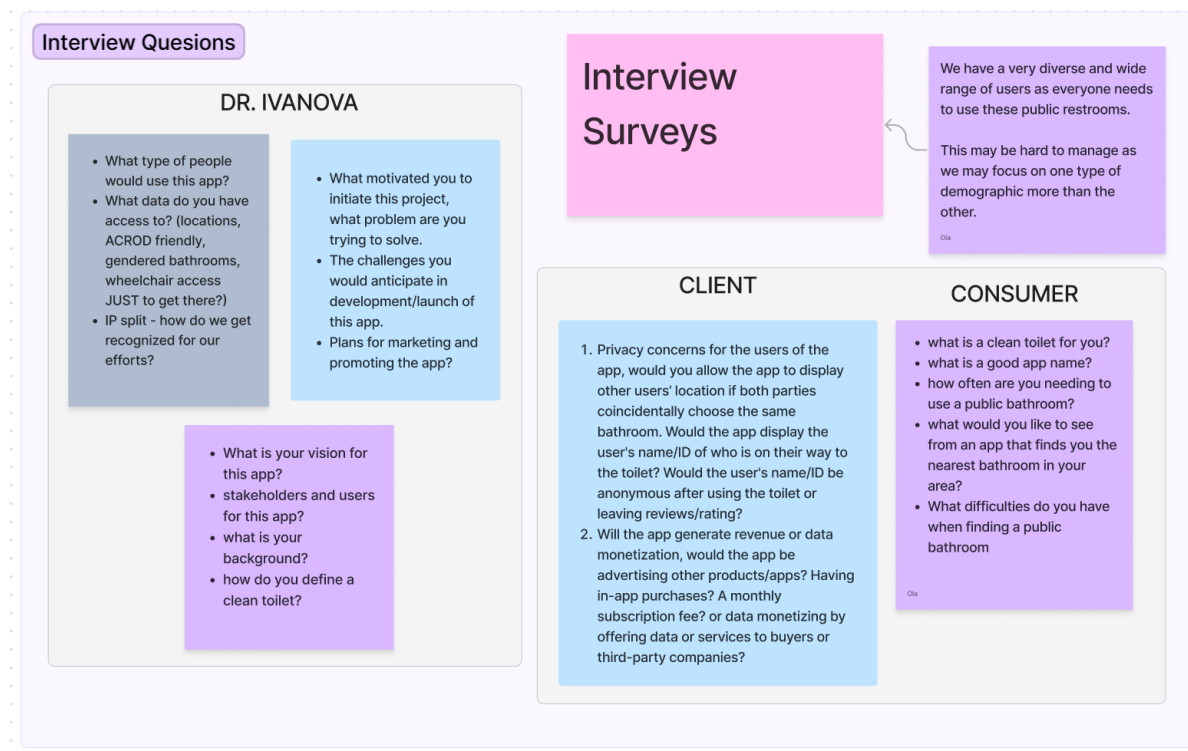
3.2 Personas

In our first attempts at building Personas and discovering Pain Points, we recognised three underrepresented groups: neurodivergerse, genderdiverse and disabled folks presented with unique needs and preferences. To build a service for as many users as possible, we need to consider these groups.

Name	Age	Occupation	Motivations	Pain Points
Jordan	30	Retail Worker	Wants to find an all-gender bathroom as they identify as non-binary and womens or mens bathrooms are an uncomfortable environment to be in.	When developing the app make sure that it is inclusive of all genders.
Jaclyn	45	Nurse	Jaclyn has had a long night out in the city and is busting to find a bathroom during these late hours at a clean and safe location.	- make sure that the navigation tool is easy to follow with audible and visual queues. - checks the opening times of the bathroom before it recommends.

Chris	21	Professional Bodybuilder	Maintaining physical fitness to achieve competitions goals, needs clean, spacious, and well-equipped restrooms to support his nutrition needs.	Finding restrooms that are dirty, tight-spaced, impotent restrooms. Unfamiliar areas whilst travelling for competition.
Micah	15	Individual with Autism	Urge to use a not-so-crowded toilet to minimize anxiety and stress he experiences whilst using a restroom in an unfamiliar environment. Often overwhelmed and finds it hard to adapt to new situations and places.	- needs to have an easy-to-understand user interface to avoid frustration and confusion. - app customization to meet his needs and preferences such as font size/colour contrast to avoid causing discomfort.
James	23	Young Athlete	He always likes going out hiking and biking and wants to find a toilet where they have an option for a shower as well.	Make sure it's quick and easy to use, it should be easy to filter all the options. He also wants to know that what's the opening schedule looks like and how busy it might get.
Grace	26	Young Mother	Skeeing toilet which are clean and tidy with baby changing facility.	Need to have a mobile app which she can use while holding her child on the other hand. Should be accurate when it comes to location.
Marcus	37	Worker with vision impairment	Marcus has just finished work, when he suddenly needs to go. He'd prefer not to climb flights of stairs if necessary, but he's happy to go wherever.	Marcus needs a visually accessible experience, where he can appropriately see the relevant information.
Jane	16	Student with physical disability	Jane is out with her friends in the city. She wants freshen her face up, and wants to find a bathroom she can quickly and easily get to. If she needs to use a lift, sure, but she'd rather the convenience of a bathroom without elevation.	Make sure Jane can view bathrooms relevant to her movement restrictions.

Here at Gee-Oh-Three, we believe in evidence-based action. With two data analysts on our team, you can be assured that we'll conduct a wide span of quality user surveys.

4.0 Usability and user experience goals

4.1 Usability Goals

- The app should be easy to navigate and use, with clear design elements.
- The app should provide accurate and up-to-date information about restroom locations and features.
- Users should be able to leave and read reviews of restrooms to help inform their decisions.
- The navigation tool should be easy to follow with audio and visual queues.
- The user must be able to input their preferences on a bathroom to filter out other ones which may not be the best fit for them (if they need a wheelchair accessible toilet)
- Make things more memorable everytime they logged in.

4.2 User Experience Goals

- Users should feel confident in the accuracy and reliability of the information displayed.
- Able to leave reviews to the app's database.

5.0 Figma

Figma will be heavily utilised to help visualise and present the final prototype of the project. Within the early stages of this project we have researched and developed an understanding on the basics of how to use figma with the help of a few video tutorials and websites listed below:

- https://www.youtube.com/watch?v=II-6dDzc-80&t=1226s
- https://help.figma.com/hc/en-us/articles/360039832014-Design-prototype-and-inspect-right-sidebar-
- https://help.figma.com/hc/en-us/articles/360040314193-Guide-to-prototyping-in-Figma

Here, you can see a team member's attempt to recreate the Google Maps User Interface, using the tools in Figma. The link to the Figma board is here.

Recreation of Google Maps
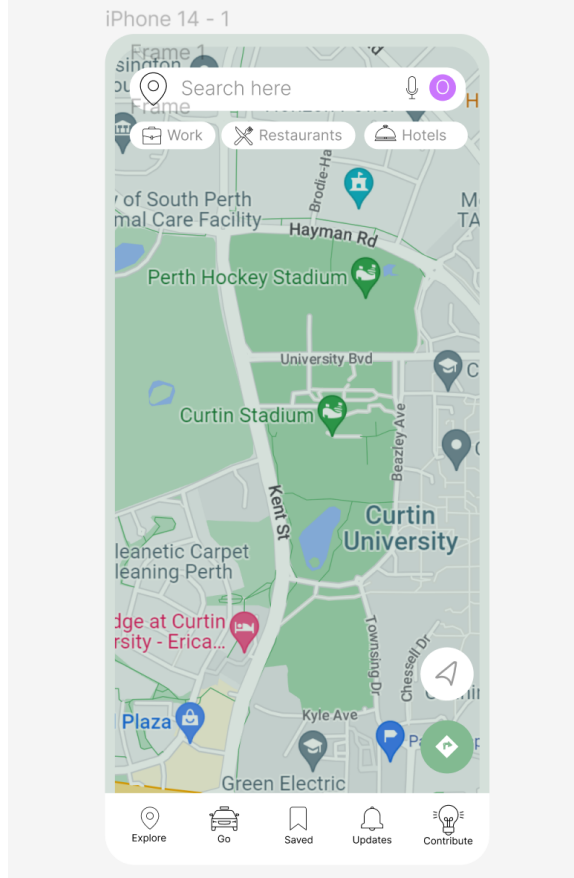
6.0 UI/UX glossary and weblinks

1. (UX) Content Development - A process of creating and improving written or visual content that attracts, entertains, informs, or educates users.
   https://contentmarketinginstitute.com/
2. (UI) UI Prototyping - A process of making interactive, clickable models of user interfaces to simulate what the end product of the app would look and function.
   https://www.figma.com/
3. (UI) Customer analysis - A process of understanding user characteristics, behavior, personality, and needs of your audience.
   https://www.usability.gov/

7.0 Web/Mobile app development

There are several web/mobile app stack to mention such as
- MEAN stack
- MERN stack
- Ruby on Rails stack

If we as a group would build a mobile app such as the toilet-finding app, the MEAN stack would be a great start.
1. MEAN stack is a well-known tech stack, it is easier to develop and maintain the application only JavaScript is used from the back-end to the front-end.
2. The MEAN stack is also open-sourced, many documentations, resources, and solutions are available online,
3. The flexibility of the MEAN stack can handle large amounts of data and real-time transmissions. It is essential if we are talking about creating an app that constantly updates its statuses or geolocation such as the toilet-finding app.

Conclusion

There's next to no-one in the world who wouldn't want to find the closest clean bathroom. This project was the most in demand amongst the ~60 others, and for good reason. Team Gee-Oh-Three are grateful to have been selected for this project, and with our unique combination of graphic design, data analytics and open minds, we're looking forward to working an expert like Dr. Ivanova.
When you need to do your business, you can do your business with us!

References

Department of Health and Aged Care. 2022. "National Public Toilet Map app." The National

Public Toilet Map. https://toiletmap.gov.au/.

United Nations. 2022. *Goal 6: Ensure access to water and sanitation for all*.

https://www.un.org/sustainabledevelopment/water-and-sanitation/.

Appendix A - National Public Toilet Map Reviews

The National Public Toilet Map

Reviews on AppStore

Positive Comments

 -dandan910, 15/12/2021

Lifesaver. I'm sure most of us use it when it's a hurry, and it does a great job. It provides the information you need like locations, opening hours, facilities etc. You can rely on it.

 -Ageing Journo, 07/10/2021

Indispensable. Often change plans based on this map as I walk and use public transport as much as possible.

-Andreael, 21/08/2020

Saved the day many times. This app may not be accurate 100% of the time but I have found it to be a great help on many occasions - city, country & beach areas. Many of my friends have been highly impressed when I pull out my phone & we follow the map to the closest toilets. I have mainly only used it in Vic. Brilliant! Any support coming for the apple watch any time soon?

 Negative Comments

-playsport, 13/12/2019

Update. You should be able to update the information on the app for existing toilets and be able to add new toilets to the app and be able to sign into the app with your account instead of having to do all the above online. I hope the features above get added.

Amir7067, 04/02/2018

Maps. This app is no longer able to navigate drivers. Seems that app is no longer compatible with iphone map. Developers need to improve navigation or compatibility with "Waze" gps navigation app.