



Skadoosh Feasibility

Skadoosh, allowing everyone to find cleaner bathrooms and notifying owners of dirty ones.

TEAM YELLOW

CS 410

OLD DOMINION UNIVERSITY

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Our Team

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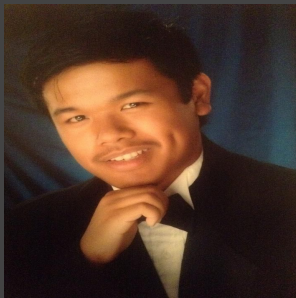
Brandon Feldhaus
Project Coordinator



Kevin O'Brien
Systems Engineer



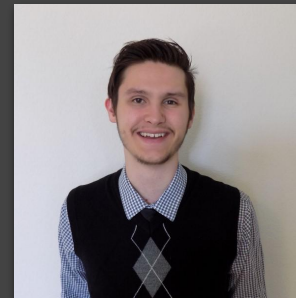
Bryan Perez
React UI Mobile
Developer



John Edgar Monroe
Quiambao
DB Engineer



James Zeigler
Web Developer



Daniel Zrust
React Mobile Developer

Problem

- ▶ Real-time feedback about cleanliness and amenities of restrooms available for public use is difficult to find and the ability for facility owners to use this feedback does not exist.

Ewww (500,000 bacteria!)

- ▶ 63% of Americans had unpleasant experience with public restrooms [1]
- ▶ Close to 75% of people surveyed said an unclean restroom suggest poor management [1]
- ▶ 60% of people delay defecation in public restroom [3]

[\[1\] PR-Newswire](#)

[\[2\] Enviro-Master](#)

[\[3\] Theconversation](#)

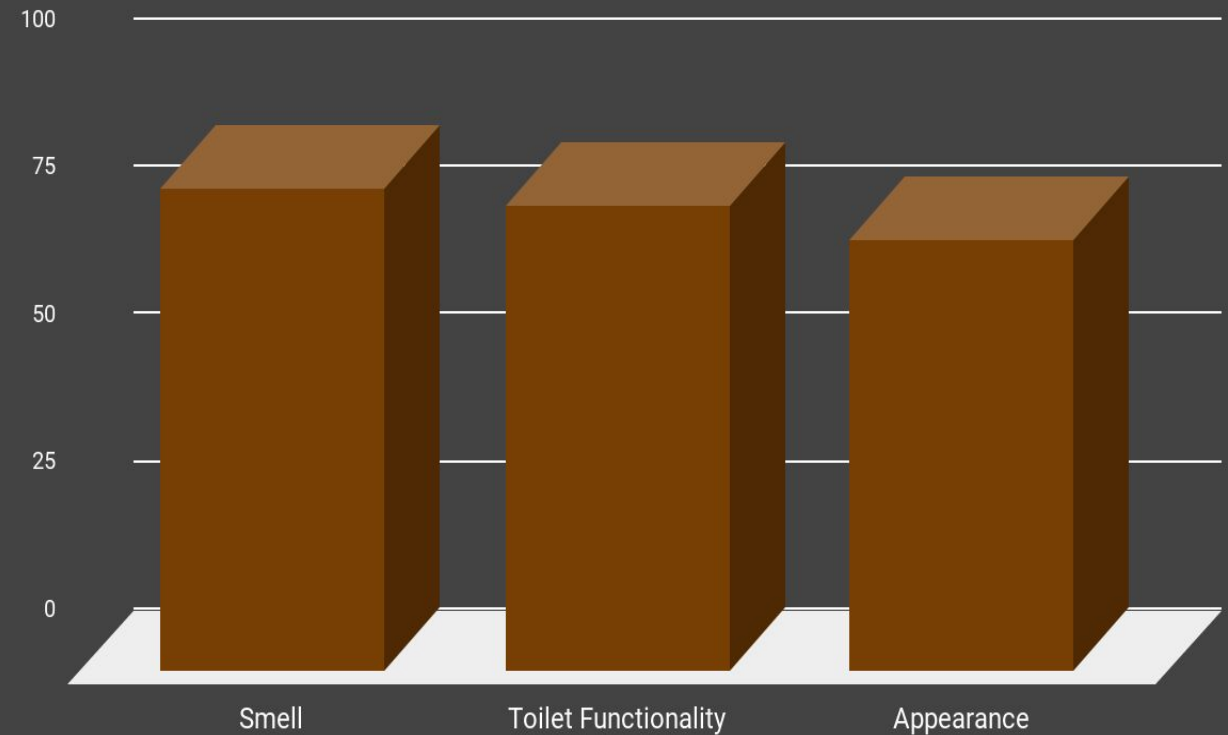
Top Complaints

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Survey by The Bradley Corporation [1]

[\[1\] PR-Newswire](#)

Top Restroom Complaints Among Men and Women 18-65



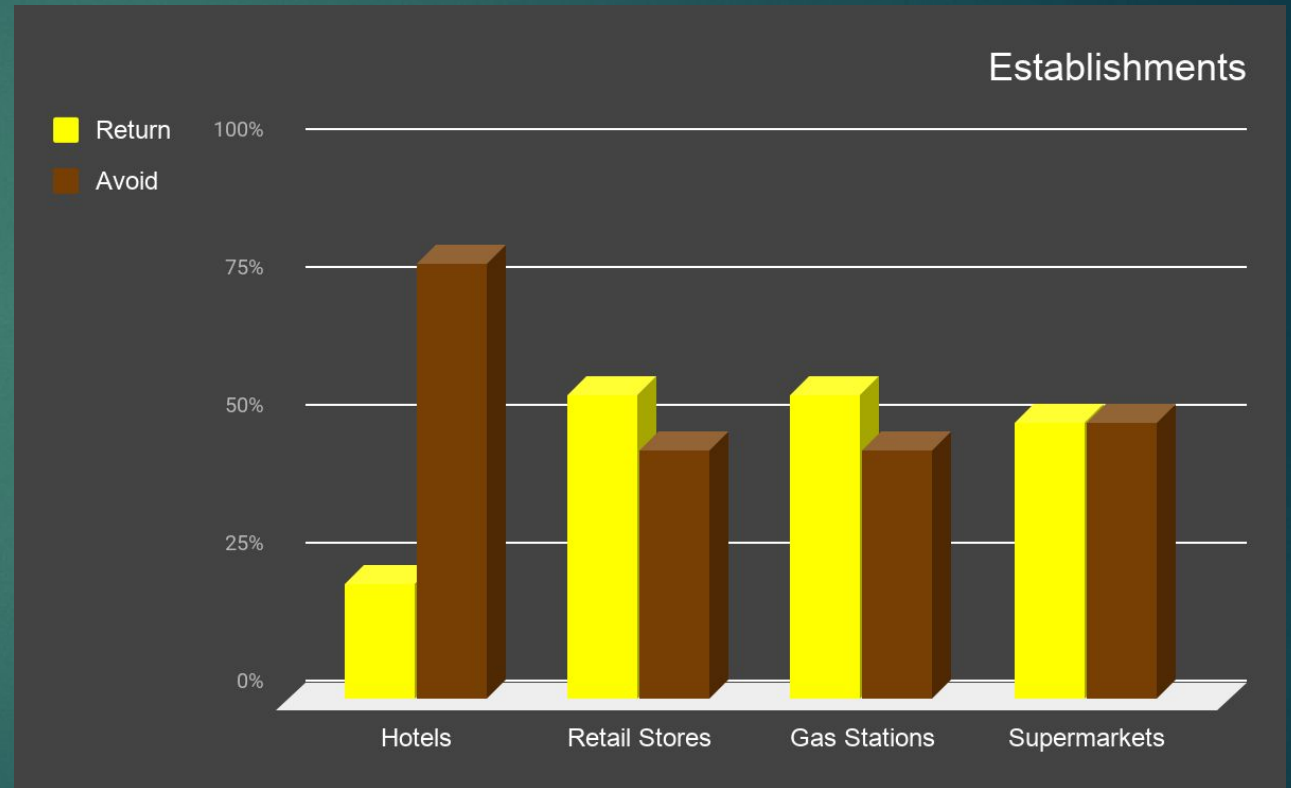
Coming back?

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- ▶ Among the survey, the following locations were asked about

Survey by the Clintas Corporation

[Clintas Corporation](#)



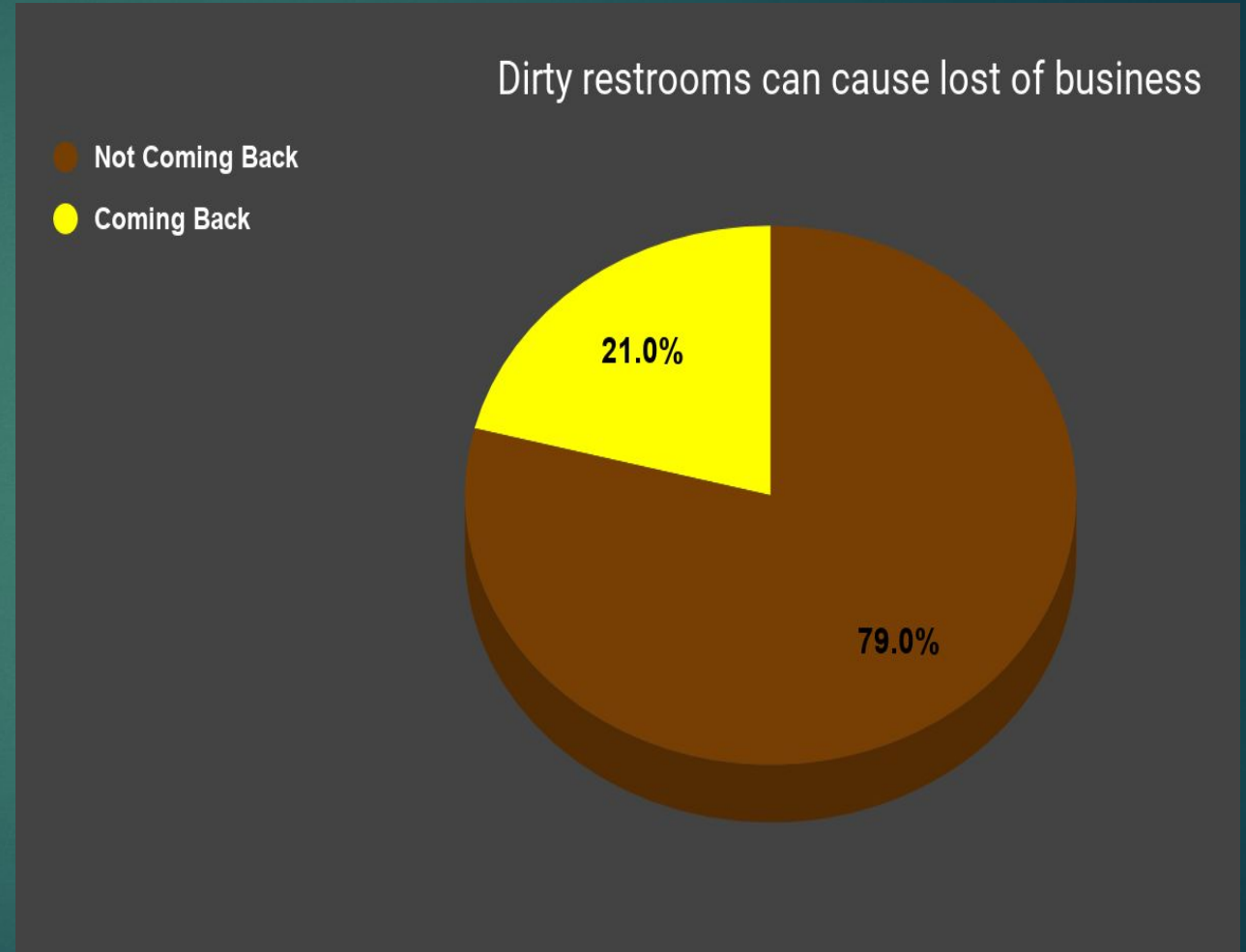
Bathroom Cleanliness Affects Businesses

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- ▶ The survey also showed, 79% of customers would not return a restaurant with dirty restrooms

Survey by the Clintas Corporation

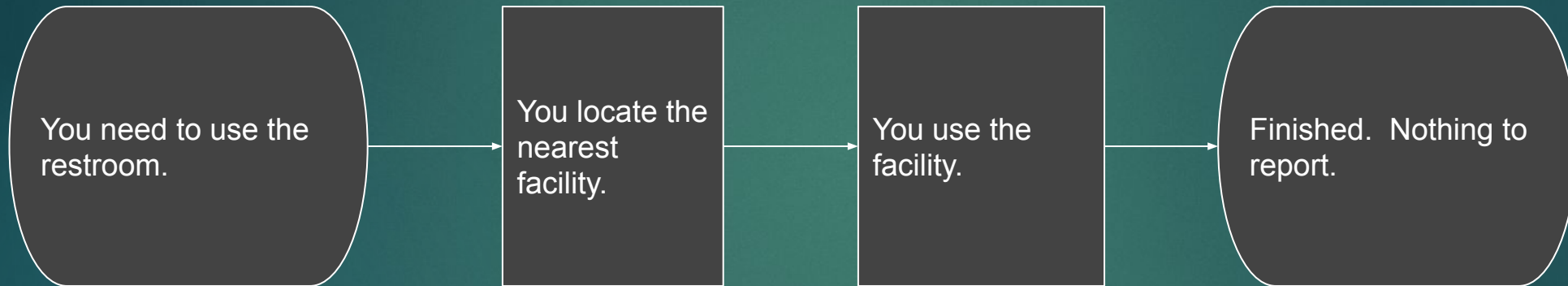
[Clintas Corporation](#)



Problem Characteristics

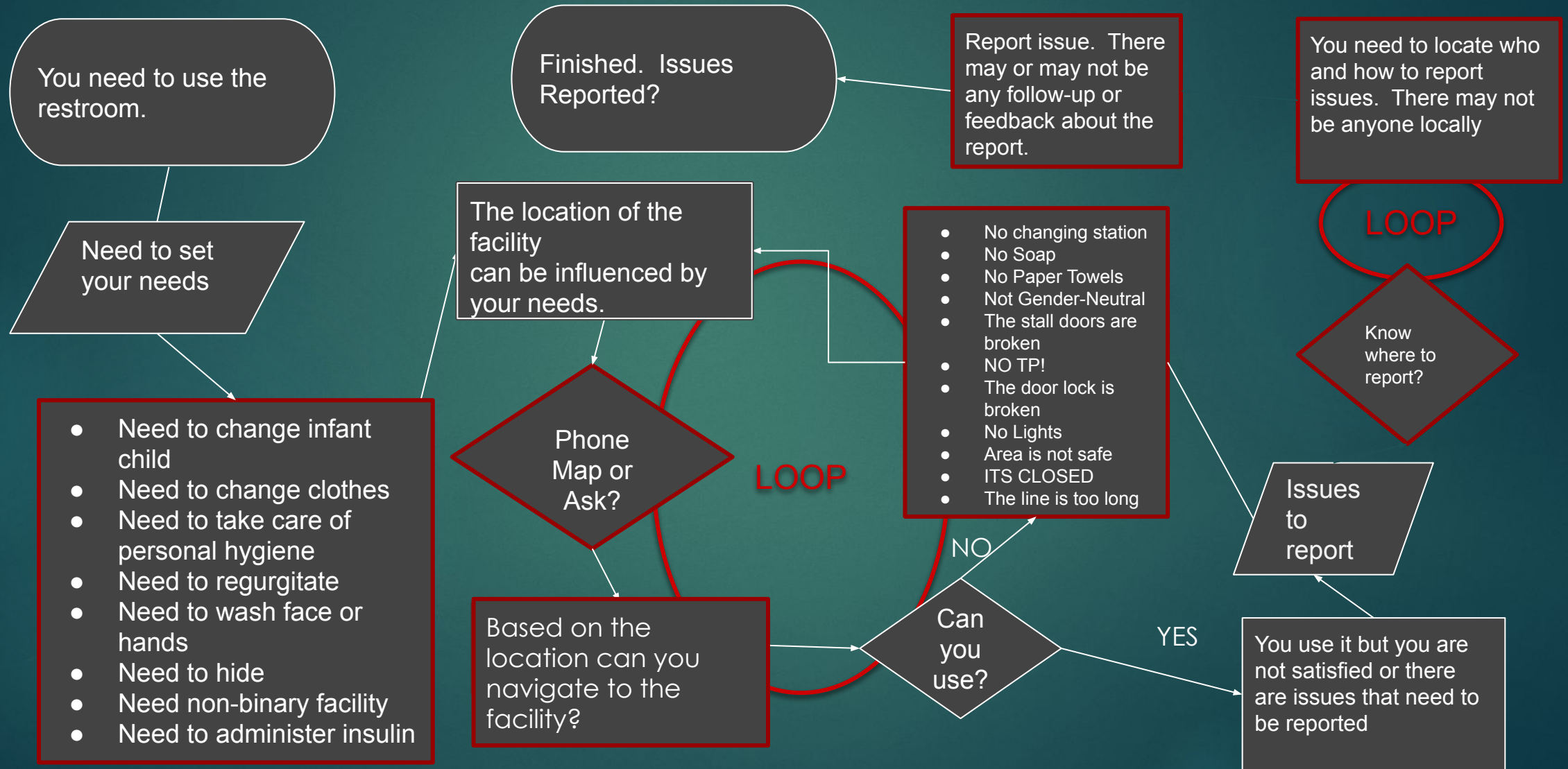
- ▶ No real-time feedback analysis for owners and people concerning restroom cleanliness
- ▶ Lack of amenities such as:
 - ▶ No soap
 - ▶ Hand Dryers not working
 - ▶ No hand towels
- ▶ Quality of amenities
- ▶ Gender neutral restrooms are uncommon
- ▶ Owners lack of cleaning

Ideal World



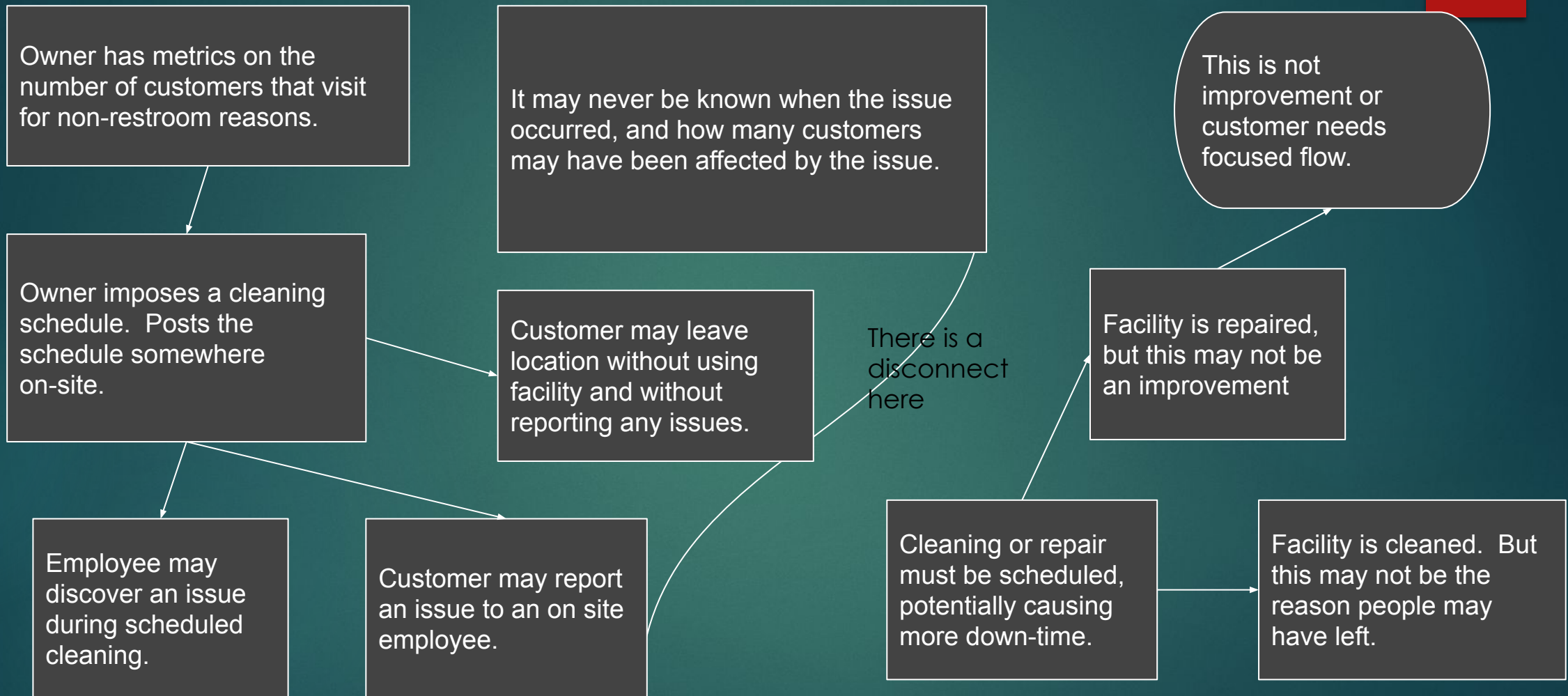
What actually happens for Users

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What about the owner?

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Solution Statement

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- ▶ Skadoosh will provide users with the ability to locate and contribute real-time feedback that will notify owners of their restroom conditions.

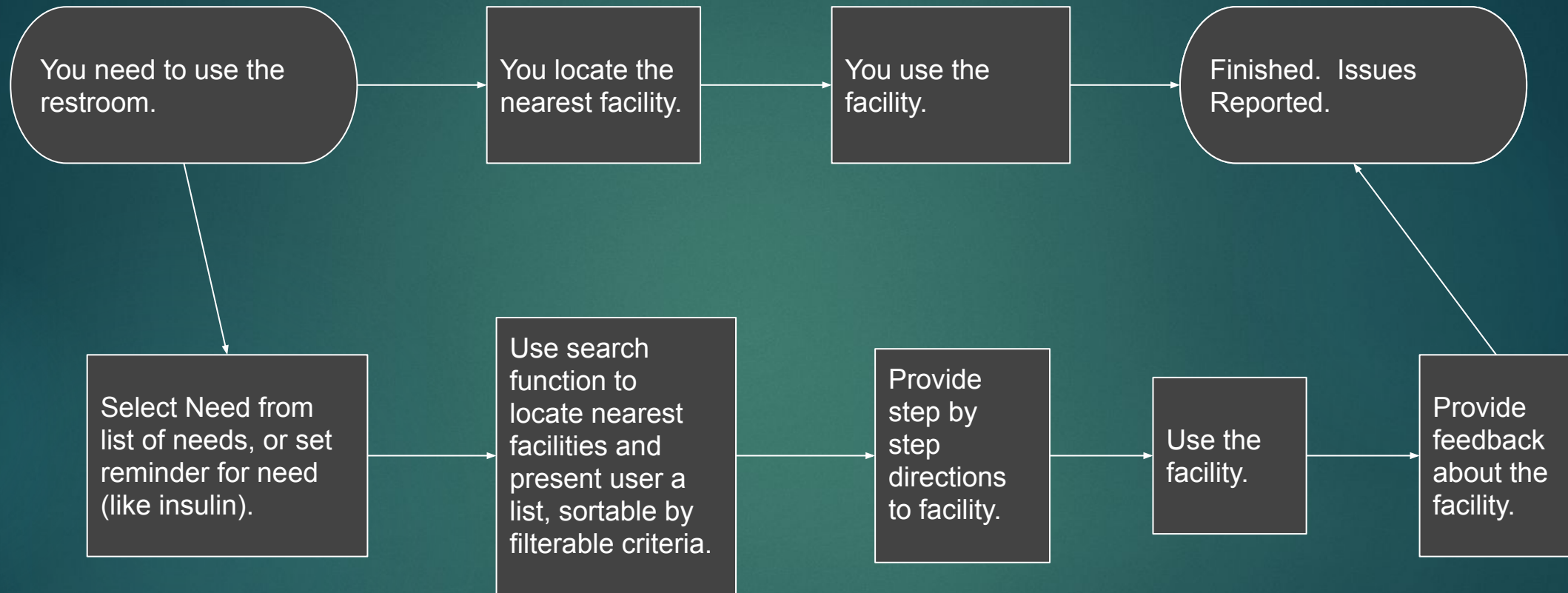
Solution Characteristics

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- ▶ Feedback
 - ▶ Users can provide real-time feedback about facilities making complaints or suggestions
- ▶ User Profiles
 - ▶ Stores needs into a user profile shared with the application
 - ▶ Users can have multiple profiles
- ▶ Owner Profiles
 - ▶ Able to receive analytics and feedback about the facility
- ▶ Location Profiles
 - ▶ Locations have attributes that can be matched against user needs
 - ▶ Locations can be connected by special Owner Profiles
- ▶ GPS and facility matching
 - ▶ Locations can be located in maps and users can be guided to facilities
 - ▶ Users can create restroom location on their personal map and with verification from other users it can be added to the official map

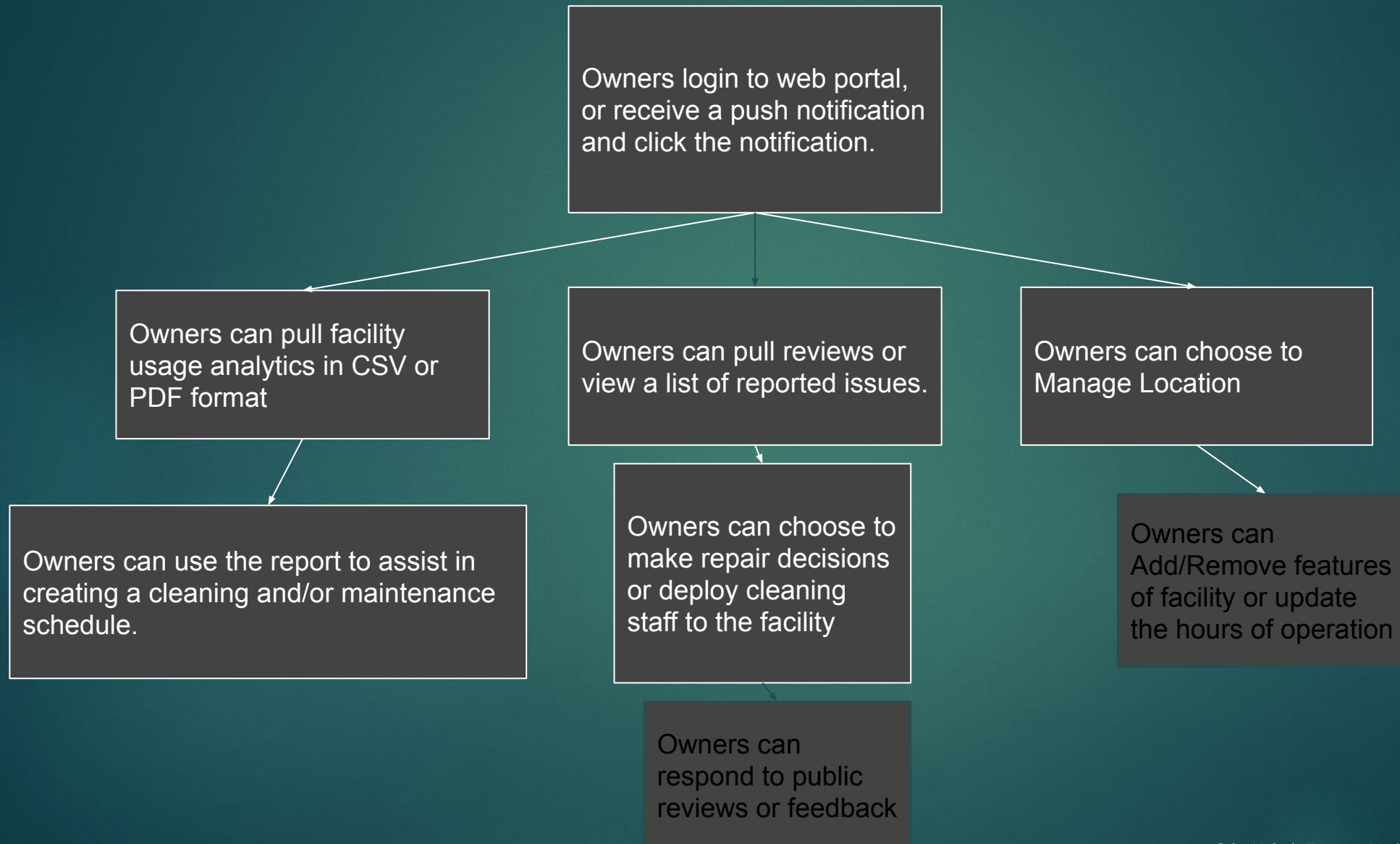
Can we improve the flow for users?

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Owners can have better flow too...

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Our Duties

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1. Provide users with the best possible restroom
2. Allow users to give real time feedback about restrooms
3. Provide owners with that real time constructive feedback

Issues we can't unclog

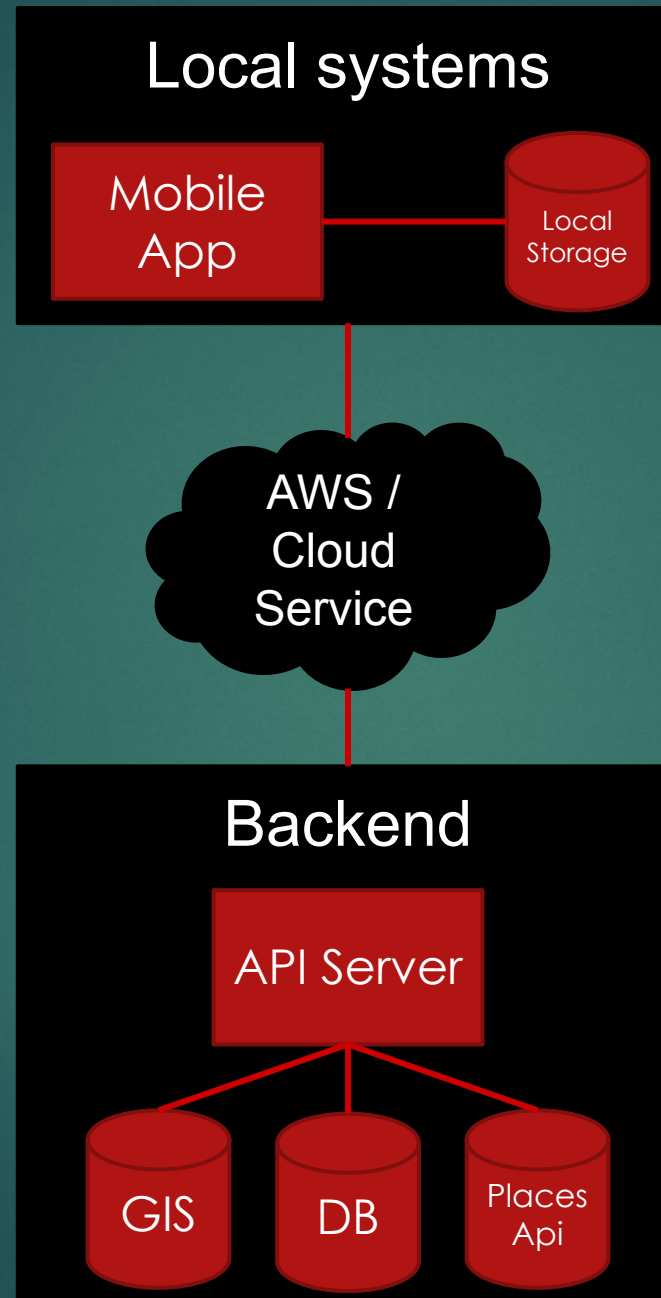
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1. Actual maintenance of restrooms
2. Impromptu janitorial services
3. Current visual representation
4. Real-time vacancies

MFCD

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MFCD - Local Systems

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- ▶ Local Storage will hold information such as:
 - ▶ Gender
 - ▶ Bathroom Preferences (Highest Rated, Most Reviews, Best Overall, etc. etc.)
- ▶ The local storage is used so that the user's personal data does not have to be kept on our DB thus saving the user from unwanted data leakage
- ▶ The mobile app will serve interfaces that allow users:
 - ▶ Rate bathrooms
 - ▶ Find bathrooms
 - ▶ Leave reviews
 - ▶ Owner of restrooms to see stats of their restrooms
 - ▶ See real time data such as: waits, ratings, and reviews
- ▶ Mobile app will be written in React Native

MFCD - Cloud

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- ▶ Cloud system will be hosted in AWS
- ▶ AWS Features used:
 - ▶ DynamoDB: restroom ratings, place information, and minor user details
 - ▶ Api Gateway: access to the api service
 - ▶ Lambda: api call handling
- ▶ The AWS cloud system will hold all the virtualization needed for the backend

MFCD - Backend

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- ▶ Lambda service using node.js and express.js will handle all the api calls
- ▶ Backend Db will be DynamoDB (no/sql) that will be accessible via AWS library
- ▶ Express app will have access to the GIS information given to us via Google's maps api
- ▶ We will also interface with Google's places api to get vital information such as:
 - ▶ commercial locations
 - ▶ recreational locations
 - ▶ parks
 - ▶ other "expected" restroom locations

Competition

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| Patron | | | | | | |
|---------------|----------|------------|---------------|-------|--------------|----------------|
| Features | Skadoosh | SitorSquat | Toilet Finder | Flush | Where to Wee | Bathroom Scout |
| IOS | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ |
| Android | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Rating | ✓ | ✓ | ✓ | ✗ | ✓ | ✓ |
| Directions | ✓ | ✓ | ✗ | ✓ | ✓ | ✓ |
| Filter | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ |
| Accessibility | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ |
| Amenities | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Free | ✓ | ✗ | ✗ | ✗ | ✓ | ✗ |

Competition Cont.

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| Owners | | | | | | |
|----------------------------|----------|------------|---------------|-------|--------------|----------------|
| Features | Skadoosh | SitorSquat | Toilet Finder | Flush | Where to Wee | Bathroom Scout |
| Claim Business | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Feedback to/from Customers | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Add Restroom | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Push Notification | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |

Competition Cont.

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| | | | | | | Real-Time |
|-------------------------|----------|------------|---------------|-------|--------------|----------------|
| Features | Skadoosh | SitorSquat | Toilet Finder | Flush | Where to Wee | Bathroom Scout |
| Real-time Feedback | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Real-time Rating | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Real-time Notifications | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |

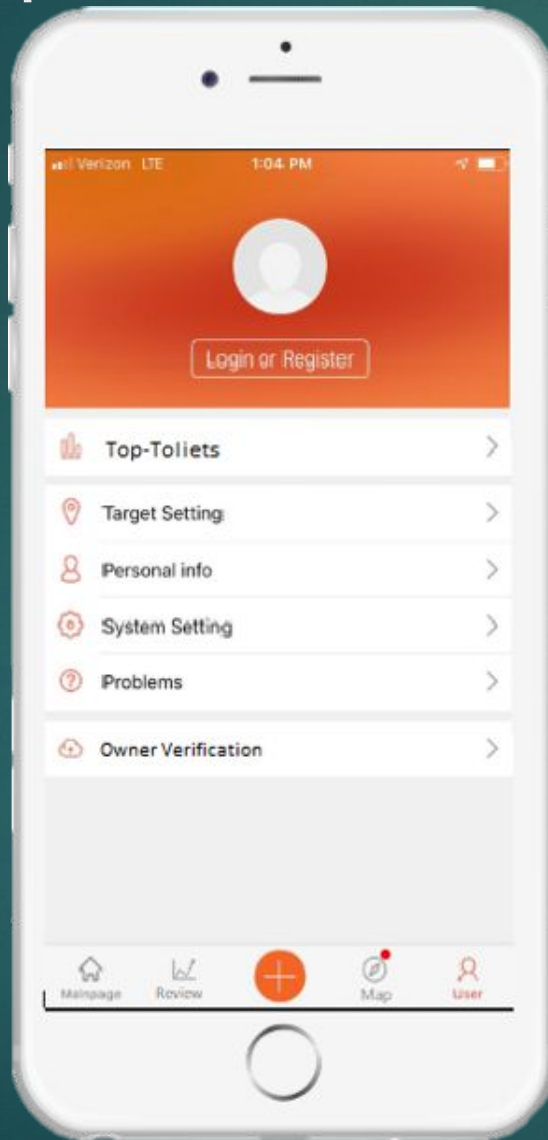
Competition Cont.

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- ▶ IOS / Android – app platforms
- ▶ Rating – allowing user to rate restroom
- ▶ Directions – Turn by turn navigation to restroom location
- ▶ Filter – allows user to filter map content based on applied criteria
- ▶ Accessibility – Handicap, gender, family
- ▶ Safe – tells the user if restroom is unsafe i.e. broken locks
- ▶ Free – application is free to use
- ▶ Amenities – shows restroom has changing station / supplies

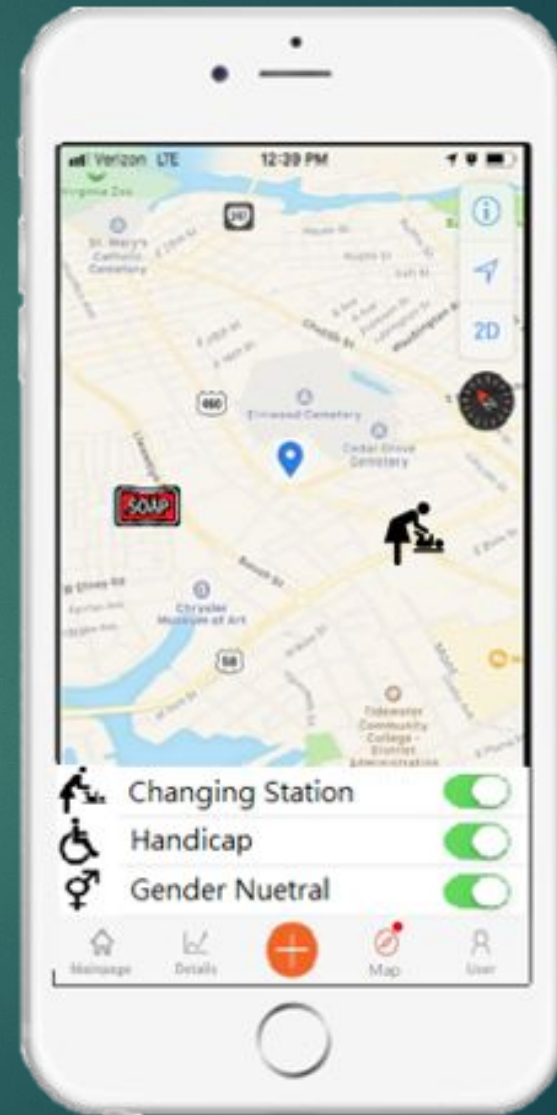
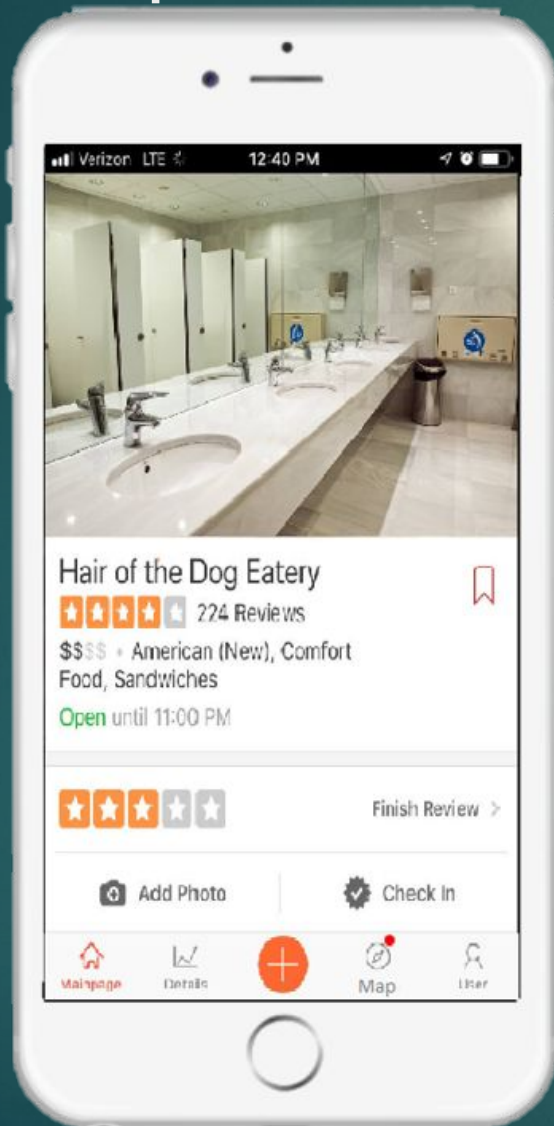
Mockups

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Mockups

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In Conclusion

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- ▶ Anyone can struggle with finding the “right” bathroom
- ▶ We offer our users real-time feedback to amend this problem
- ▶ We crush our competition with the usage of reliable real-time feedback and owner interfaces
- ▶ Some might say Skadoosh is coming to flush out all the competition

Skadoosh it !

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