CS486C – Senior Capstone Design in Computer Science
Project Description

Project Title: Improving the Inclusive Customer Experience (ICX)	
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Project Overview:

Imagine you are driving down the highway and you need to use the restroom. As everyone knows, all restrooms are not the same in terms of cleanliness, usability, or availability. Now imagine you are in a wheelchair, or you don't have the use of one or both of your arms, or you have special conditions that may not be obvious to others, and that must be managed as part of your bathroom practices. You need a facility that is clean, offers equipment or appliances for your needs, and will not cause potential health issues or other consequences as a result of your visit there.

And then, what if your gender identity is different than how others view you, or your race, color, or beliefs are different and not as well accepted at the facility? Everyone should be able to use the facilities without inconsiderate discussion, inappropriate materials posted nearby, or other unwelcoming conditions. Everyone goes to the bathroom; everyone should have reasonable access.

Now imagine you have an app on your phone that allows you to check out a given facility that you wish to use, or that allows you to search for facilities that will serve and/or assist you with your needs. And expand the scope of the app to restaurants, gas stations, hotels, and other facilities people use. The app/system would be crowd-sourced much like Yelp so that everyone can share peer-to-peer information and help each other out. The app might also provide the capability of reporting facilities that do not adhere to reasonable standards and related laws.

The app mentioned would be the outcome of this project but it would also be part of a larger system called Inclusive Customer Experience (ICX) created and implemented by people who wish to help others, and who want to help businesses improve themselves by being more welcoming to their clients and customers. The bottom line is a win-win for the businesses and the people by supporting fair and reasonable service and support for all of us.

The project

A minimum viable product (MVP) would include,

- the ability for a person to enter her/his/their information, preferences, needs, and pertinent personal characteristics into a mobile app for lookup purposes

- the ability for a person to access a central location to get the rating for a specific facility. The facility information might include components that address personal needs and characteristics and notes/comments

An expanded product would include,

- the ability for a person to check the facility for alignment with their own personal characteristics

A refined and high-quality product would include,

- the ability for a person to search a given geographic area for the facility they need

- the ability to provide a prioritized (by distance and alignment with personal characteristics) result list to the user

Knowledge, skills, and expertise required for this project:

- Mobile app development

- Use of backend/database facilities, access to, and communication between them

- Basic understanding of user experience (UX/UI), user design (UD), and accessible web/app interfaces

Equipment Requirements:

- Most parts of this project will not require anything more than available development tools and a development device (a mobile phone)

- However, the backend component may require access to AWS or an equivalent data storage system; this can be negotiated with the client and/or supported during the Capstone term

Software and other Deliverables:

- A strong as-built report detailing the design and implementation of the product (either an app or responsive website) in a complete, clear and professional manner. This document should provide a strong basis for future development of the product.

- If a backend/data storage system is used, a clear, written description of how to transfer the code and materials to a client system if this is not already part of the project

- Complete professionally-documented codebase, delivered both as a repository in GitHub, BitBucket, or some other version control repository; and as a physical archive on a USB drive.