

Problem Statement:

Have you ever been in a situation where you could not find the restroom or an open restroom, but needed to go pee urgently? You're not alone! Many tourists visiting the University of Washington for its natural beauty and amazing academic environment have asked us where the nearest bathroom is located. Surprisingly, students who have attended the University of Washington for several years are also not aware of many of the bathrooms around the campus and end up relying on going to the nearest building and scavenging around the hall to find a bathroom.

Finding a restroom is a common problem that extends to many major cities in the United States. Often times, when people go on family vacations, especially to downtown areas, they struggle to find an open bathroom in dire situations. Studies conducted on holding in your pee have concluded that doing so "can weaken your bladder muscles, which could lead to urinary retention - a condition [preventing] you from completely [emptying] your bladder when you pee" (BEC CREW). As a result, not only is it a strain mentally to hold in the pee, but it is also harmful for your body. Thus, it is quite evident that an issue exists in our society with people not being able to locate the nearest restroom when they urgently need to urinate, which can lead to unnecessary bladder complications if urine is held in for a long period of time.

Solution:

To address this problem, we designed **OneRestroomAway**, a web application that finds the nearest bathroom from the user's location.

The screen shown in Figure 1 is the main page of the website. A map is displayed zooming into the user's current location. Bathrooms are indicated using a red marker and the user's current location is indicated with a blue circle. The circle will continuously follow the user's location. In the case the user does not allow their current location, a map of the entire University of Washington will be displayed for the user to interact, shown in Figure 1.2. The map displays markers to show the bathrooms on a map.

On the side bar, bathrooms will be listed, along with details such as disability, if a key or code is required, and gender. A list of bathrooms is displayed, ordered by nearest open bathroom to the user's current location. Each section has the building name, distance from the user, address, and icons based on features. Users can choose to filter based on features such as disability, key access, and gender neutral bathrooms. This is displayed on the Figure 2. A drop down menu allows users to check the features they need for the bathroom. The results will change based on the filters selected.

Figure 3 displays the information of the bathroom on the marker. Users can click on the marker of the bathroom the map to see the building name, button to display directions, and bathroom details. The details page displays more information about the features and display the building's hours.

People who are unfamiliar with the UW campus may need directions as the campus can be crowded and confusing. To get directions to the bathroom, users click on the marker on the map. The screen is shown in Figure 4. There is an option to display directions from the user's current location to the bathroom. When the user clicks on the get directions button, the directions will be displayed on the sidebar, along with a visual representation on the map. The directions will automatically be walking directions, as the user will likely be in search of a short distance and walking.

Figure 1:

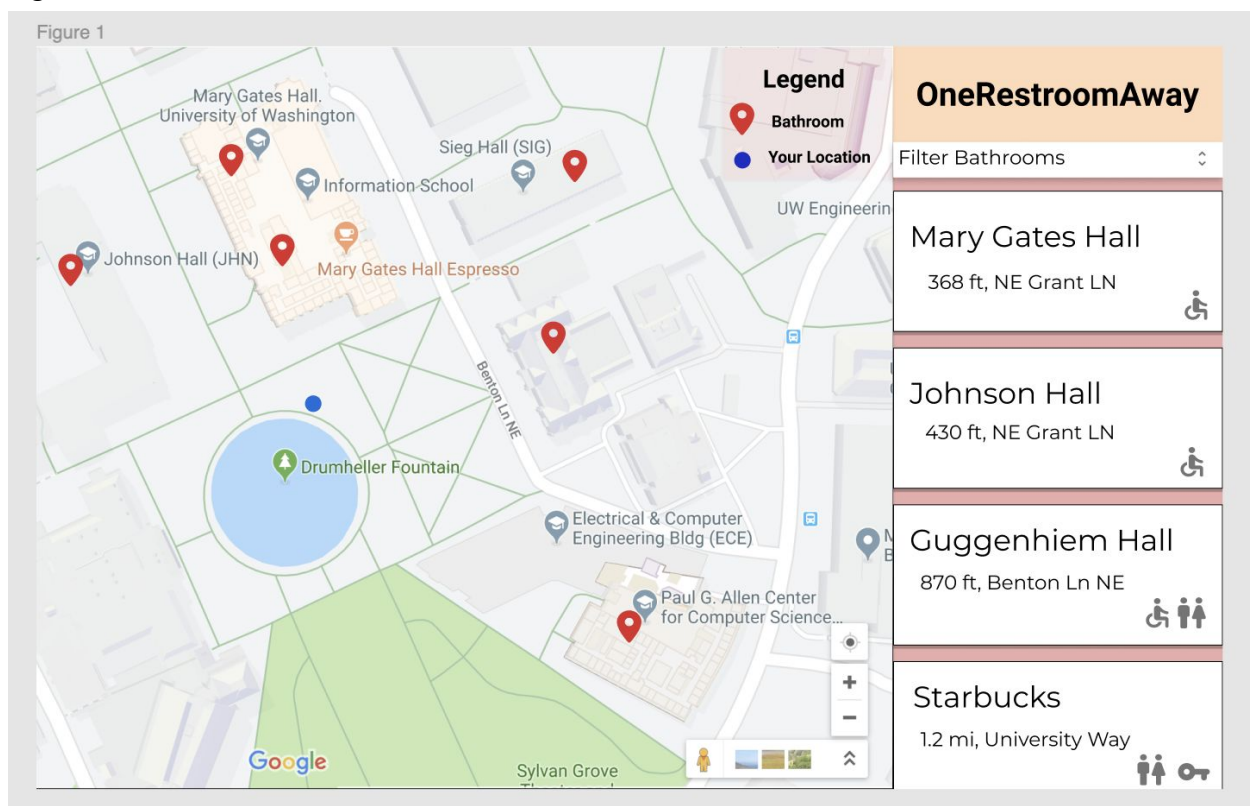


Figure 1.3

The screenshot displays the OneRestroomAway application interface. On the left, a map of the University of Washington campus is shown, overlaid with numerous red location pins indicating restroom locations. A notification banner at the top left of the map area states: "www.OneRestroomAway.com wants to know your location" with "Block" and "Allow" buttons. On the right side of the screen, a list of specific restroom locations is provided, each with its name, address, and accessibility icons (wheelchair, baby, and family). The locations listed are:

- Mary Gates Hall**: 368 ft, NE Grant LN (Wheelchair icon)
- Johnson Hall**: 430 ft, NE Grant LN (Wheelchair icon)
- Guggenhiem Hall**: 870 ft, Benton Ln NE (Wheelchair, Baby, and Family icons)
- Starbucks**: 1.2 mi, University Way (Baby and Family icons)

At the bottom of the map, there are navigation controls including a compass, a scale bar for 500 feet, and buttons for "Terms" and "Send feedback".

Figure 2

Legend

- Bathroom
- Your Location

OneRestroomAway

Filter Bathrooms

- ☒ Disability Access
- ☐ Requires Key
- ☒ Gender Neutral

Sieg Hall
430 ft, NE Grant LN

Guggenhiem Hall
870 ft, Benton Ln NE

Husky Union Building
1.2 mi, University Way

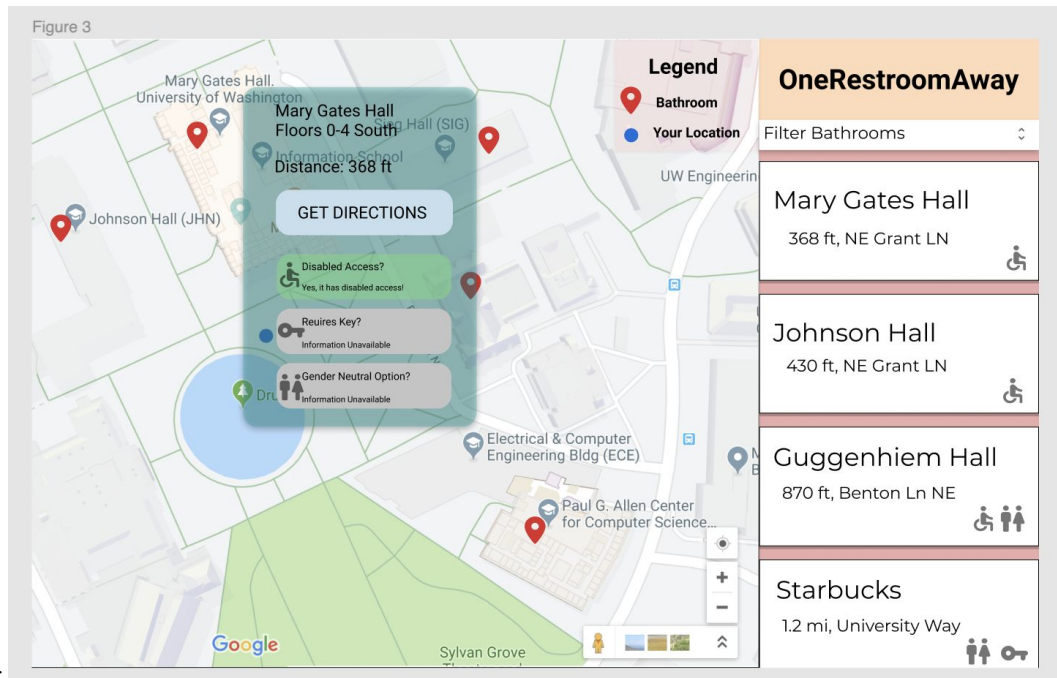


Figure 3:

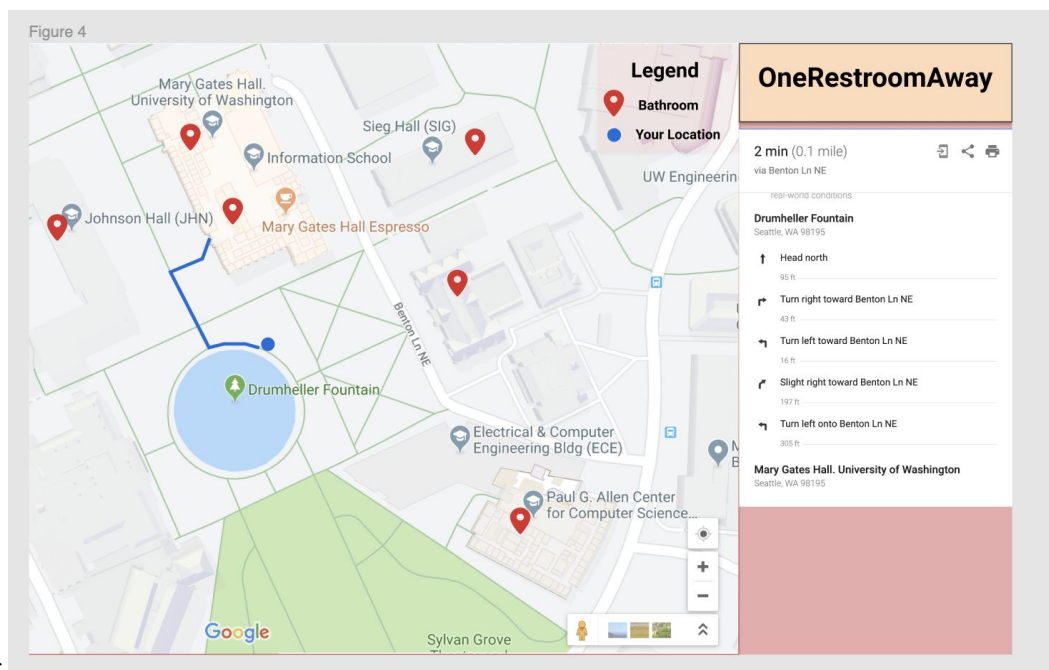


Figure 4:

Work Cited

Crew, Bec. "Here's What Happens to Your Body When You Hold in Your Pee." *ScienceAlert*, 7 Mar. 2018, www.sciencealert.com/what-happens-when-you-hold-in-pee-science-2017.