Polaris

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Task Analysis

Goal: Looking up information about a bus stop

The main task supported by our application is allowing a user to look up information about a bus stop. On a high level, this will involve opening up the application, finding the bus stop, and looking through any information about the bus stop provided by our application. This requires that the user already has an idea of what specific bus stop (and bus route) they intend to use, likely either from experience or from looking up bus routes via a different tool like the King County Metro Trip Planner or Google Maps. The technology will need to provide an interface for the user to be able to find the bus stop and then provide the information in a readable format. We expect that this task would be performed before the user leaves f0r their trip, and would likely take place within the user's home, via either a computer or a mobile device. Since we intend for our application to include information about temporal aspects of the bus stop (such as construction), we expect that querying a specific bus stop in our application will be a recurring task that the user will perform every time they intend to use a bus stop. There are not any restrictive time or resource constraints, but we believe the application should be simple enough to navigate so that the user can look up information in a timely manner.

Subtask	Technical Specification
The user will be able to find a specific bus stop.	The application must provide an interface for the user to find the bus stop. The application will provide a map view for the user, so that if the user is familiar with where the bus stop is on a map layout, they can quickly find the bus stop and select it. This means that the application will need to access and display map data. The application will provide a text field to search for the bus stop by its location or stop number, in case the user is not able to quickly locate the stop on a map. In either of these cases, the application will need to use readable fonts and colors, and have a smooth interface by which the user can enter their query and select the correct bus stop. The application will also need to be supported by a backend database that will store the bus stops and their locations.
The user will be able to view information about the bus stop.	The application must provide a way for the user to, after finding their desired bus stop, view all the information about the bus stop that is stored in the system. We anticipate that this information will comprise of both text and images, so the application must present both types of information in a way that is easy to parse for the user within the size constraints of a standard computer or mobile phone screen. This subtask will also require our application to store this bus stop information in a database, as well as host images.
The use will be able to see the status of the sidewalks surrounding a specific bus stop	The application must show graphically on the map indicators towards the general status and accessibility of the sidewalks surrounding bus stops. The status should be easily determinable at a

	glance by encoding information such as construction or steep inclines into the map through features such as color. The map should also allow users to interact with it to see more in-depth information such as steepness, obstructions, and provide pull up pictures of the condition for users to see, within the constraints of a standard computer or mobile phone screen.

Goal: Crowdsourcing information about a bus stop

Our application will also support the task of crowdsourcing information so that any user can record any information, either text-based or photos, about a specific bus stop or the area surrounding said bus stop. This task will involve opening up the application, finding the bus stop, and adding information about the bus stop.

This requires that the user knows the specific bus stop they intend to add information about and would be able to find and select the bus stop from within our application. This also requires that the user be able to input information. The technology will need to add support for the user to find the bus stop, and input and upload the information they wish to record. This relies on the user being able to decide what type of information would be helpful to record in the application.

We expect that this task will be performed either at a bus stop (or surrounding area), on a bus, or at some stationary location such as the user's home. We predict that the task will mostly likely be performed at a bus stop, since we envision that the general workflow of this task would involve the user noticing something when they are at a bus stop and deciding that it is valuable information to input into our application. Bus stops are usually outdoors and are often noisy or dirty and can get crowded. If the user is at a bus stop, they will most likely be inputting the information via their cell phone or some other mobile device and will probably have the time constraint of getting the information inputted and uploaded in the time before their bus arrives and they have to get on. On the other hand, there is also the possibility that the task will be performed on a moving bus -- if the user noticed something at the bus stop but did not have time to record the information before their bus arrived, it is possible that they will record the information after getting on their bus. In this situation, the user would again likely be using a mobile device and would have the time constraint of however long they are on the bus before they arrive at their stop. Finally, the user could also perform this task from some location such as their home (or the destination of their travel) if they remember something from a bus stop they used earlier. In this case, the user might be using a mobile device or a computer and would probably not have any very pressing time constraints.

Subtask	Technical Specification
The user will be able to find a specific bus stop.	See table above
The user will be able to view information about the bus stop and surrounding sidewalks(in order to see whether the information they want to record	See table above

has already been recorded, for example).	
The user will be able to input and save text information about the bus stop.	The application must provide a way for the user to input text-based information about a specific bus stop, review their input, and confirm/save it. This requires some text field for the user to type into, either via a computer or (more likely) a mobile device, as well as a confirmation button. All of this user interface must be easily readable and usable from both a computer screen and smaller phone screen. This also requires that the application be connected to a database with write permissions containing bus stops and information about the bus stops so that new entries can be inserted into the database. The option to add information to a stop must also be compact yet recognizable to fit on the application, whether it be on a desktop or mobile device.
The user will be able to upload a photo of the bus stop and surrounding sidewalks.	The application must provide an interface for the user to upload a photo to a specific bus stop. (If possible, it would be helpful to allow the user the option of taking a photo of the bus stop from within the application as well.) Additionally, the application should allow the user to double check the photo they are uploading and confirm the upload via a confirmation button. This interface must be readable and usable within the constraints of the dimensions of a phone screen, which we expect will be how users will most often perform this subtask. This requires the application to be connected to a backend database that can store filepaths to images (which would then require file system where the images would be hosted) along with which bus stop the image is for.
The user will be able to flag information currently recorded for a bus stop or sidewalk if it appears to be out-of-date or incorrect.	The application needs to have an option for users to mark certain pieces of information about a bus stop as potentially incorrect. This would likely only be available when viewing all the information for a specific bus stop. This part of the user interface must also be usable from a small phone screen and should allow the user to select one or more pieces of information (and deselect if mistakenly selected) that they perceive to be incorrect and flag it as such. This requires that the application is connected to a database that stores how many times a piece of information has been flagged so that it can display to users how reliable the information might or might not be.