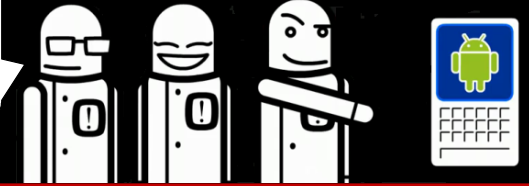




WE ARE TEAM 1:
ALEX TAM
ANGELA PROFFITT
KEVIN GRANT



Indoor Navigation For Optically-challenged

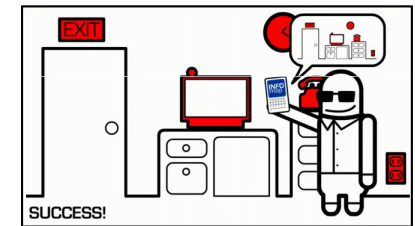
Abstract

INFOmap is a mobile phone app developed to help blind patrons navigate inside buildings. It uses voice commands and "crowdsourcing" to build a database of objects within a building. A map of the building can be downloaded off the internet. The user can enter key items such as vending machines, restrooms, and chairs through voice or menu. Since the information is collected from a variety of users, the data will be compared to previously collected data to confirm the object and its location to prevent false information. As more objects are entered, an area will be easier to navigate. While INFOmap is focused on helping the blind, it can also be used by any user unfamiliar with a building.

Description

The main goal of the project is to have a program running on an Android-equipped mobile device that can recognize a user's voice and use speech recognition to control the program. INFOmap will also have the ability for the user to add and remove room items to an external database hosted on the Internet. The room data will contain the item's coordinates in relation to the room. The program will primarily use voice commands although a graphical interface may be introduced later.

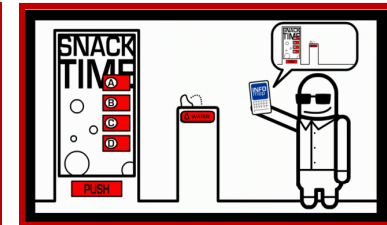
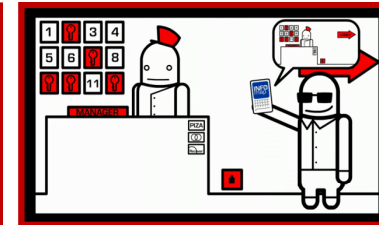
We are developing the program for is the T-Mobile G1 (also known as the HTC Dream). The G1 is a smartphone running the Android mobile operating system (developed by Google); it has the ability to connect to the internet via WI-FI or a wireless carrier's data connection. The ease of development and publishing is why Android was chosen for the development platform. The G1 was the first and only Android smartphone so it was the logical choice at the time.



Future Work

Once the program works successfully using voice commands, the next step is to wrap it with a nice graphical interface for sighted users. It would display a map of the room with the objects at the specified locations. One step further would be to use a three dimensional view of the room that can be navigated like a video game. In fact, a video game could be developed from this program.

WHAT ARE SOME OF ITS APPLICATIONS?

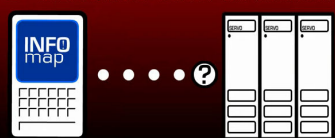


HOW DOES IT ALL WORK?!!?

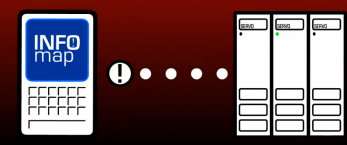
① The user asks INFOmap a question.



② INFOmap sends the question to a remote server via internet.



③ The server answers the question and sends the answer back.



Users can add new entries to the database via internet as well.



Conclusion



Navigating a new building can be difficult for a blind person. INFOmap helps to reduce the burden of having to find a sighted person familiar with the building to show a blind person where things are. It is developed to be convenient and accessible by running it on a mobile phone. It can also be used by sighted people as well if development continues. And who knows? It might be the next big thing in video games.

VISIT OUR WEBSITE AT
<http://www.tamwerks.net/sp/>
FOR MORE DETAILS.

