Dream Team

AS-IS and TO-BE document

Team Members

Christopher Young
Cong Trinh
Taryn Burns
Anne Lin
Sean Luchessa

Phase One Recap

For phase I, the team was given a set of preliminary requirements from the client on what is to be expected for the initial prototype of the application. The issue of helping blind people navigate through a building was established with a clear goal in mind of helping to mitigate this problem.

The things we established during this phase are:

- The platforms for the system
- The features, tools, and the ways to implement them
- The features' priorities
- The user help manual for the app
- The mockup design for the prototype
- The creeping rate
- Advantages and disadvantages compared to other tools

Creeping Rates

Since Requirements creeping rate = percentage of change/time and we already established the essential requirements and prototype, the creeping rate we can accomodate would be quite low.

```
User Input = 16
User Output = 15
User Inquiries = 14
User Files = 5
External Interface = 4

Scale (Complexity Adjustment Factor is Average) = 3

F = 14 * 3 = 42

CAF(Calculate Complexity Adjustment Factor) = 0.65 + ( 0.01 * 42 ) = 1.07

UFP(Unadjusted Function Point) = (16*4) + (15*4) + (14*4) + (5*8) + (4*5) = 240

Function Point = 240 * 1.07 = 257

% of Changes that can be accomodated: 42/257 = 16.3%
```

The features most likely to change are: Settings, Navigation, and User Interface.

Creeping Rate Review

A creeping rate of 16.3% in the features that we chose would have been able to be accommodated for. The program is still in a prototype stage and by the nature of a prototype the code is not built to withstand time and features are implemented loosely being able to be changed without much loss of resources.

The documentation update would be the harder part from needing to change everything that is traced to the updated requirements. The app is being built off the specifications in the document so all the application planning would need to be updated as well. This would be within scope since we stored our documents in known locations accessible by all team members. Documentation could be updated as a joint effort allowing for us to stay on schedule while also undertaking the change request.

Updates and Changes

Changes:
The changes we made to the system were small ones. We decided to not include the obstacle detection function and our GPS function does not include fine details to indicate whether or not the user is going the wrong direction.

Obstacles:
The obstacles our team faced were mainly focused in getting the GPS and directions to work properly. The visual instructions did not update as expected so our schedule was delayed as a result of it.

In addition, there were also time restraints due to everyone's different schedules, classes, and jobs. There were some features that could not be implemented as a result. Some of those features include Map Parser and Fall Detection.

System Features

Indoor Navigation: The app uses the GPS and the map parser in order to find the best path indoors for the user.
Injury detection: The app utilizes the gyro sensors in order to sense if the user has fallen down and therefore, possibly injured.
User-friendly interface: Because the app is mainly for the visually impaired, there will be a user-friendly interface. This consists of allowing the user to give verbal commands and verbal instructions during the navigation part.
Emergency contact: One of the most important features of the system. This is a feature designed to improve the user's safety as it is called whenever the user commands it or when the app detects the user is injured. The emergency contact will be notified of the situation and the user's coordinates in order to help the user as soon as possible.
Room Profile: This is for every new user so they can customize their daily routes and habits.
Mid-Navigation destination change: This feature is for when the user needs to suddenly go to a different room (e.g, room/building change due to renovation).

Team Roles

Christopher Young: Team lead / Developer

Cole Trinh: Developer

Taryn Burns: Developer

Sean Luchessa: Developer

Anne Lin: Developer

Why Choose Our App?

- **No additional time needed** to train dog or yourself on the paths to different classrooms.
- **Emergency help is instantaneous** and emergency contacts can receive your exactly location and activity.
- **Detects objects** in order to avoid collisions in real time.
- Is able to **correctly and safely guide** the user to their desired location.
- Can let the user **change destinations mid-navigation** if they want to.
- When you fall, you can end up dropping the cane several feet away, whereas the **app can send help instantaneously**.
- **Does not require additional hardware** since user most likely has a phone already instead of needing to purchase a dog or cane.
- **It is very compact** making it portable and convenient
- **No maintenance cost**. Updates automatically.
- **Cost effective**. Don't need to spend extra money due to everyone having phones. Don't need to spend money on a dog or cane.