Michigan Technological University

College of Computing

Computer Science Department

CS3141 Team Software Project

Spring 2022

Team Software Project proposal

Section: R01

Team #: 1

Role#	Student name	position
5	Brayden Coyer	Scrum master
3	Vincent Barfield	Developer
2	Nat Anderson	Developer
4	Conner Bodell	Developer
1	Wes Alberg	Developer

Project name/title: Elevator Down?

Instructor name: Serein AL-Ratrout

Project introduction and description:

One issue we are trying to solve on campus is the awareness of elevators being down and the effect that it has on people's daily schedules. Students might potentially waste time waiting for an elevator that is out of order, or having to find a different way to class if an elevator is their only option. Our app aims to make everyone's day-to-day life more streamlined by providing a map and list view of elevators that are currently down(not working) on campus. It will also alert maintenance when a user flags an elevator as down.

Problem statement

When our team first started talking we realized that several of our team members have all had a similar inconvenience regarding elevators. Many of us have experienced walking up to an elevator that was "out of order" without any notification. Whether this was in the dorms or in some other buildings on campus, you were forced to change your route. This is the problem that we hope to solve with our app, by providing information on the current operational status of all elevators on campus. This could also help people that are wheelchair-bound or have other disabilities that prevent them from using the stairs effectively to be able to plan their trip around the elevators.

Proposed solution:

Users will interact with our product in a couple of different ways within the app. Users will use their phone's camera to scan QR codes that are posted on elevators around campus. Once scanned, the user is prompted via mobile app to report whether or not the elevator is down. Then flags will be issued within a database to keep track of how many reports for a particular elevator there have been–each elevator will have a 'flag count' that is unique to said elevator. We will then have an interactive google map where all the elevators will be marked with green, yellow, or red bubbles. A green bubble means there have been no reports, a yellow will be less than 5 reports that it is down and a red is 10 or more reports and a checkmark means it has been verified down by maintenance. We will also have a list function where you can see the see name of the elevator and the amount of the reports. These user reports can be accessed by the maintenance team on campus. The maintenance team can also officially mark an elevator as down or working and reset the count when they fix it–this will be visible to users.

Tools:

For this project we plan on using Android Studio to develop the application for both Android and Apple phones. The only hardware that is necessary to the user will be a phone with an internet connection. Within the app, we plan to use a google API to help users locate the elevators.

Constraints and challenges:

Some of us will be working with new technologies which will take time to learn. This app relies on user input and this could allow people to spam the app. We also need to locate every elevator on campus.

The expertise of the Team Members

All of our team members have some sort of background knowledge of a coding language which will be very helpful for this project. Most of us know Java or C++ which will also be helpful while we design the application. We are all interested in streamlining people's daily lives and making sure that people are not wasting time.

References

References

[1] Ookla, “Downdetector,” Available: https://downdetector.com/. Accessed 9/19/2022

[2] Ian Sommerville, Software Engineering 10th Edition, Pearson, 2015.

[3] Android Inc., “Android Studio,” Available: https://developer.android.com/studio/. Accessed 9/19/2022