Software Engineering
Project Backlog
CS 307

Team 13(Snoxy)

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1 Problem Statement

Every year, new students and visitors have trouble finding restrooms, water fountains, classrooms, etc. We are going to write a mobile app that will give directions indoors by scanning QR codes put on walls throughout a building. The app will direct them towards their destination from where they are.

2 Background Information

When we went to the first CS30700 class, we all had to explore a new building, Lynn hall. It took everyone a while to find out how to get to this classroom with all the twists and turns that Lynn has. Because of the confusing layout, we thought that if we could get directions to the classroom with our mobile device, we would save time and confusion. We are planning to design a mobile app targeting students at Purdue university who are either new to the campus or unfamiliar with some of the buildings. This application will help these students find their classrooms or rest rooms until they are used to getting to their destination without the aid of this application. While this program will provide directions and maps like a google map, we plan on making it work without a connection to the internet. However GPS cant provide the navigation that requires higher accuracy, so GPS can not satisfy user needs. There is an indoor navigation system on the market called WifiSLAM which Apple is spending $20 million to buy it. It requires wifi installation on the floor and it is too expensive. We will do this by having all the map data stored in the app as a graph with nodes marking special locations on each floor. The reason for not using the internet is because sometimes in the lower floors, the internet services are slow beyond belief. In order to get our location, we will have QR codes placed around the floors which can be scanned to locate you with more precision than a GPS can provide. One limitation that we will face is getting all the map data even if there is a provided map on the floor. We can use measurements of hallways to draw a map for ourselves is there is no provided map on the floor.

3 Requirements

After grabbing the background information, our team decides to design a mobile application which is able to offer precise navigation. In order to know more details of users need and where needs to be designed carefully before build up our application better, we apply a list to show all functional and nonfunctional requirements.

Functional Requirements		
Theme, As a _____	I would like to	Need to add “if time follows”
User(Student)	have a visual guide with photos for navigating me to destination. For instance, I want to have real photos or camera view for the path I walk through .	No
User(Student)	go to my lecture rooms and the professors’ offices when I don’t know where they are	No
User(Student and visitor)	have a navigator to show me the closest restrooms and water fountains	No
User(Student and visitor)	be able to locate myself easily inside a building when I can’t find any indoor maps	No
User(Student and visitor)	be able to navigate myself even when I don’t have access to the internet.	No
User(Student and visitor)	be able to navigate myself in real time with least effort with an easy to follow UI.	No
User(Student and visitor)	be able to rely on the navigation even if I go the wrong way	No
User(Student)	have several popular destinations for quicker access (for example, room 224 for CL50 building).	No
Administrator (Building Owner)	be able to add my building map into an app and specify important destinations at ease.	No

Administrator (Building Owner)	know the optimal places to place the QR codes inside the building	Yes
User(Student and visitor)	be able to communicate with people (or friends) who are currently inside the building.	Yes
Non-Functional Requirements		
Type	Details	Need to add “if time follows”
Response Time	The response time after user starts walking should not be more than 1 second	No
Scalability	The app should work with any building with basic structure.	No
Reliability	The app should lead the user to the destination as quickly and precisely as possible.	No
Size	The size of the app should be small (i.e. the user should be able to download it in less than 2 minutes).	No
Supportability	The app should work without having the developers add the map and checkpoints manually.	Yes
Security	(For knowing friends’ location part) ,strangers can not access any information of users, including the chatting contents and friends list.	Yes