Spot

Software Requirements Specification

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1. Introduction

1.1 Purpose of System

The purpose of the system is to make search parties much more effective by having clearer communication on where people have searched and the recency of their paths. Users can enter a lobby that shares each others' locations and are able to send notifications to the rest of the team to indicate that a missing person has been found.

1.2 Context

Search parties currently do not have a very effective system for coordinating where people have searched, how long it has been since an area has been scanned, etc. At best, people would have to rely on texts or voice communications, which can be inconsistent and slow for a dire matter where time and clear communication is most important.

2. Overall System Description

2.1 Type of Product

The product is a mobile application that is able to show multiple people's' GPS locations in real time. Location services will be required for this program to function correctly.

2.2 Functionality

App will allow users to:
1. Share their location with others in a lobby
2. View other users' locations on a map
3. Display trails that show how recently a user has been at a location
4. Send notifications to indicate a missing person has been found

3. Functional Requirements

3.1 Main Functions

3.1.1 **Lobby functionality** - The lobby functionality allows users to view a list of search parties to join. These lobbies have the option to be password protected for the sake of privacies or unwanted members joining. Lobby admins have the ability to kick members from the party.

3.1.2 **Location sharing** - Location of each user in a party will be shared with the rest of the group. Location is updated in real time for each member.

3.1.3 **Success notification** - Users are able to send notifications to the rest of their team to be able to indicate that the missing person has been found.

4. Non-functional Requirements

4.1 Design/Implementation

1. User friendly
2. Simple, clean, color-coded interface

4.2 Usability

1. Easy to use
2. Fast access to buttons and joining lobbies
3. Fast location updates

5. UI Examples

Figure 5.1 - Landing Page

This is the page that the user sees when the application is first launched.
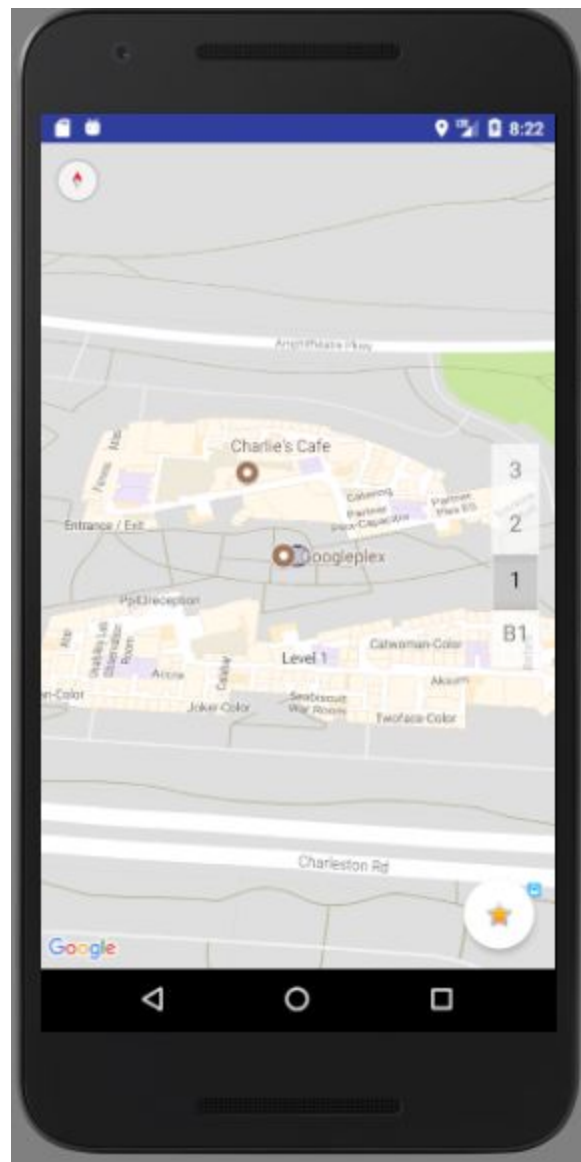
Figure 5.2 - Map Screen

This is the screen that will track the movements of everyone else in the group.

6. Future Requirements

6.1 Chat Client

Sometimes, users will need to send information to the team that cannot be communicated with only their location or a preset notification. Users will have a tab that displays a group chat to give more concise information.

6.2 Adjustable Vision Circles

To show quickly what areas have been scanned, users will be able to set a circle that shows how wide their vision radius is. This makes searches more efficient and reduces any redundant searches.

6.3 Heat Trails

Each party member shows a trail on the map that indicates the path a user has taken. This trail shows a strong hue at first to show that a location has been very recently scanned, but slowly fades as time passes to indicate that some time has passed before the area has been monitored.

6.4 Expanded connection range

The current application only allows for users to connect to others within 100 feet of each other given our peer-to-peer technology. We would expand this connection range greatly by having a centralized server that clients are able to create a connection with.

7. Glossary

Term	Definition
Heat trail	While a user moves, a mark will be left by them on the map. This mark indicates that they have visited a location. Slowly over time, the mark at that location fades away.
Lobby	A group that users can join. Lobbies can be protected by a password so only select users are able to enter. Location services are only shared for people in the lobby.
Search party	Group of people trying to find something, usually a missing person.