Milestone 1

Team Name: Bluetooth-Assisted Device Aid & Search Service (BADASS)

Members:

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Vision Statement: We want to create an application that enables users to communicate during disasters without having to rely on cellular towers or wi-fi.

Motivation: Oftentimes natural disasters are destructive to the point at which cellular and communications networks are overloaded or taken out, and this application would solve that problem by using communication directly between devices in order to coordinate rescue services and provide cellular services without the cellular infrastructure.

Description:

By installing our application, users will be able to communicate even in disaster situations when cell service and wi-fi are unavailable. We want to implement multiple features - the most important is the messaging system, which will enable users to inform others around them about their situation as well as send messages to rescue teams. When composing a message, a user will be able to choose between directing it to anyone in the vicinity (within 10-20 meters) and directing it specifically to a first responder or other rescue worker. The app will only be enabled when the user is in a disaster zone and/or there is no cell or wifi network available. The user will receive a push message asking them to enable the app if this occurs - even if they themselves are not in danger, their app needs to be enabled so they can relay and receive messages from others who might need help.

Our messaging system is going to be implemented via bluetooth chaining. All phones with the app running will be detecting messages, and depending on the type of message they will either display the message or simply continue to forward it until it reaches a phone that is marked as belonging to a “responder.” We will also need some sort of database for users that monitors whether or not users are in disaster zones.

Some potential options for extra features would be a way to mark messages as higher priority if someone is in immediate danger and an implementation that efficiently enables exchanges between rescuers and people who need help. Once we have a working product, if we have extra time these are possibilities that we would like to explore.

Risks:

Steep learning curve
Time management
Midterms for other classes; Computer Systems labs

Difficulty accessing satellites to send GPS data

Risk Mitigation:
We will be using tutorials to learn as quickly as possible for completion of the project. To help mitigate time management we will use Slack to keep open communication as well as reaching out for help.
Two slack scrums and a meeting per week, minimum.
May not be able to send GPS and need to rely more on bluetooth (which can also send details of the person's status but has a short range).

Version Control:
Github

Development Method:
Agile/Scrum

Collaboration Tool:
Slack

Proposed Architecture:
Java
Android SDK
Bluetooth implementation
SQL