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**Technical Report**

**for**

**EmergencyApp**

**Prepared by**

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## Abstract

Every human once or more often faces situations of trouble or have seen someone in their vicinity in trouble like a vehicle accident, fire outbreak and thought of the easiest way to contact the nearest rescue service to handle the situation. Emergency application helps an individual to immediately contact the nearest police station, hospital, ambulance service, fire stations by acting appropriately and getting contact details. For cases of emergency situations that involve loss of blood we have incorporated a “Blood Bank” feature which enables a user to send a message to all his or her contacts regarding the place where they are located and of the blood type that may be required.

The main idea behind this project was to create an android application that could be of great use in times of an emergency by setting official guidelines to assist emergency response teams in their efforts to save lives and time in the event of an emergency. There are also functionalities that allow quick access to all relevant information that is required at times of an emergency and is of great importance to people with speech disorders. The application will help a great deal during situations such as ones below;

- i. Car crash or Vehicle accident
- ii. Fire breakout
- iii. Harassment
- iv. Massacre
- v. Robbery
- vi. Domestic abuse
- vii. kidnapping

## 1 Introduction

This report describes the technical aspects of the emergency application and different functionalities incorporated to provide assistance to individuals in emergency situations to reach rescue teams, find emergency service providers as well contact their emergency contacts.

### 1.1 User Challenge

Emergency situations require swiftness and quick time delivery of service, anything other than this can lead to loss of lives. Response time and availability of emergency information are a big challenge during such a time, our application solves these by providing a server less SQLite database within the application that stores a device owner's emergency information and is easily retrieved and a functionality that can be used to contact ambulance, fire station, police station hotline contacts and also source out nearest Hospitals, police stations, ambulance services and fire stations closest to an individual's location and provide directions thus saving time and life

### 1.2 Project Goals

Emergency application is built to provide easy access of emergency functionalities to individuals with smart phones and android tablets. It has an inbuilt SQLite database, which is server less and zero configuration, stores information locally within the device and can easily be retrieved in times of need. The information is captured during first installation as registration is mandatory; an individual must provide name, contact number, emergency contact name and emergency contact number.

An option to update details is provided in the application under the "settings" option, feature to contact emergency contact is provided under the "Help" option, contacting rescue hotlines is provide under "SOS", option to send request for blood group by sending messages to all contacts which includes the current location of user, blood group required is possible with the "Blood Bank" functionality. Nearest hospitals, ambulance services, fire stations and police stations available can be searched using options on our application.

The maps module on the application also uses Google maps API to locate the coordinates of the nearest service points and then retrieve location from the Google maps server and use them to provide related information to the user with respect to the service the user has requested saving a great deal of time. The Google maps API is obtained from the Google API console and is updated in the manifest.xml to be able to access the maps. Relevant permissions are also set in the manifest file.

### 1.3 Definitions, Acronyms and Abbreviations

**Android:** A mobile operating system developed by Google, designed primarily for touchscreen mobile devices such as smartphones and tablets.

**API:** Application Programming Interface is a set of routines, protocols, and tools for building software applications.

**Database:** A database is an organized collection of data. It is a collection of schemas, tables, queries, reports, views, and other objects.

**Github:** A version control system that allows project collaboration.

**JSON:** JavaScript Object Notation is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate.

**MYSQL:** An open-source relational database management system (RDBMS) owned by Oracle Corporation.

**OCR:** Optical Character Recognition.

**PHP:** A server-side programming language used for the efficient delivery of dynamic web pages and services.

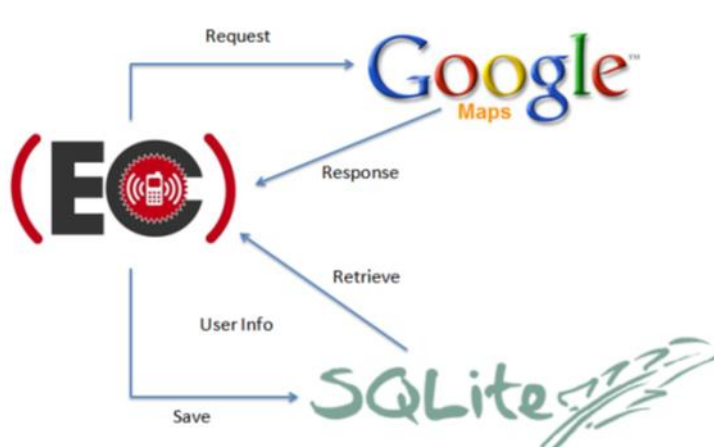
Repository:

## 2 Project Results

### 2.1 Product Design

Upon installation, emergency application requires a user to register their details of name, blood group, home phone and their emergency contact details of name and emergency contact number. After which the home page is displayed.

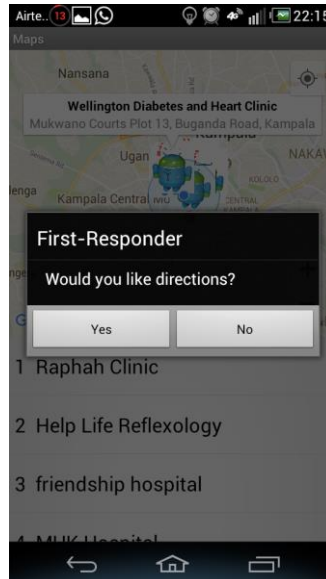
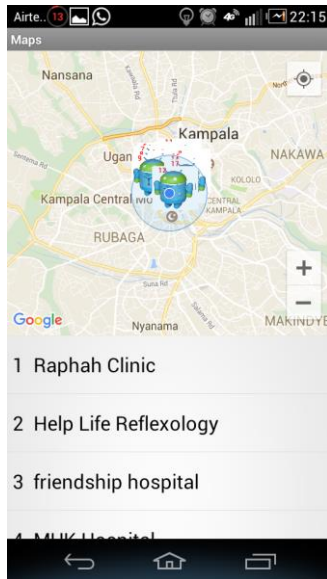
The details are stored in the SQLite database and are retrieved with ease when required, the application uses the maps module through the Google maps API to retrieve coordinates to provide locations of service points.



## 2.2 Product Functionality and Screenshots

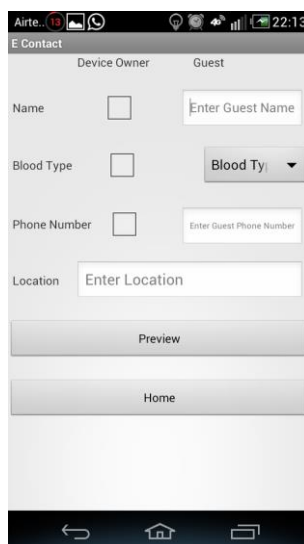
- Hospital**

This feature outsources all nearest hospitals to an individual's location and with a single click on a specific hospital acquires directions to that specific hospital.



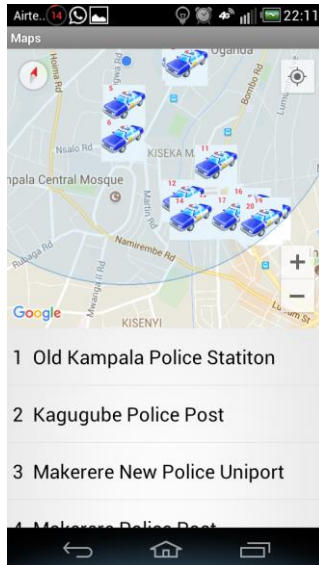
- Blood Bank**

This feature sends messages to contacts in a device identifying the sender's location and blood group required, it also provides an option to a guest user to send a message to all contacts in a device.



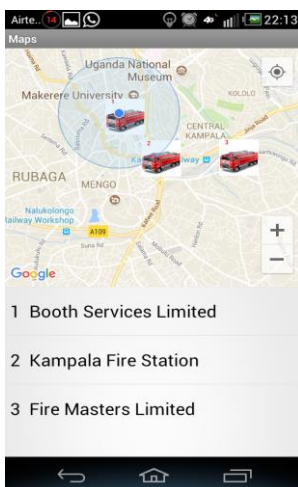
- Police

This feature outsources all nearest police stations to an individual's location and with a single click on a specific police station acquires directions to that specific station.



- Fire station

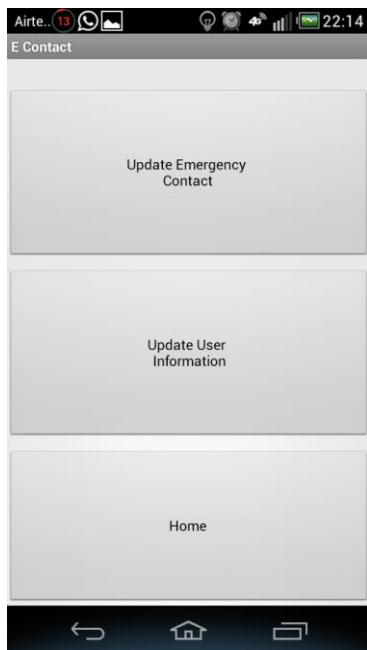
This feature outsources all nearest fire stations to an individual's location and with a single click on a specific fire station acquires directions to that specific station.



- Ambulance

This feature outsources all nearest ambulance service providers to an individual's location and with a single click on a specific ambulance selection acquires directions to that place.

- **Settings**  
This functionality allows a user to update their details, emergency contact details and an option to get back to the home screen.



- Emergency Contact and Home feature allows users to make audio calls to the emergency contact and home phone respectively.
- **SOS**  
This functionality has hotline contacts to call different rescue services.



### **3 Limitations and Next Steps**

#### **3.1 Limitations**

- The developers have no options of minimizing the costs for the user to be able to send messages to all contacts except the user experiencing deductions on his or her SIM card's credit.
- The application will require the user to have data in terms of MBs so as to access the Google map feature embedded in the app and the developers have no short cut to this drawback.
- Also the user device must have an upgraded version of android that's to say version 2.0 and beyond so as to use this application.

#### **3.2 Next Steps**

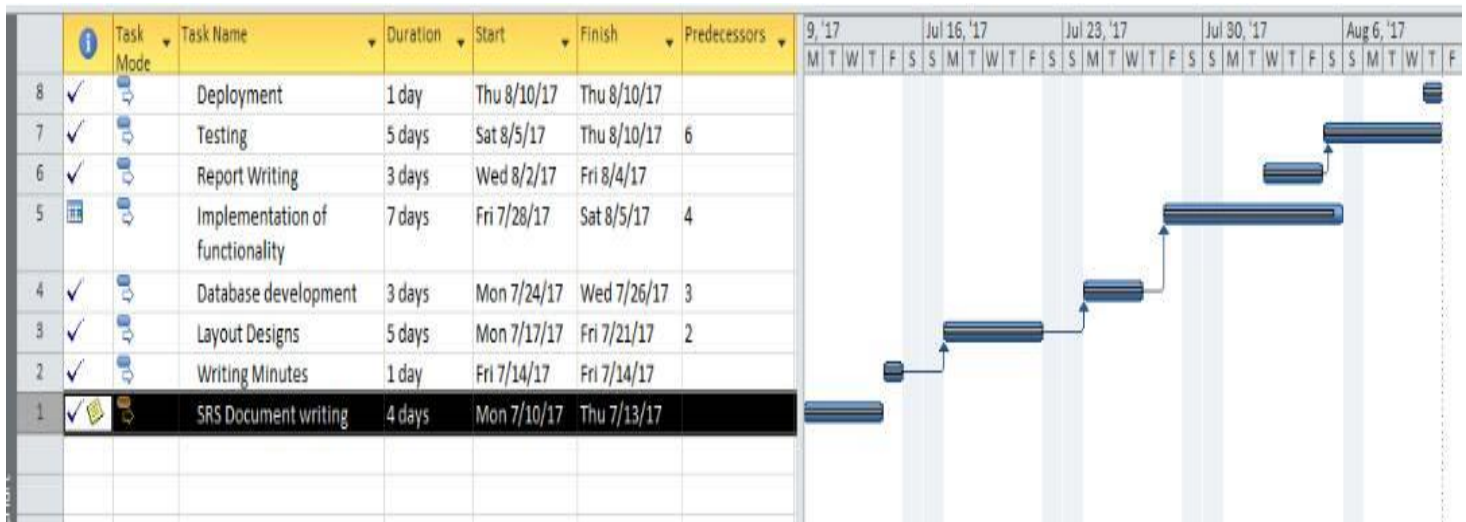
- The application will be designed further so as to categorically require the type/case of emergency so to fetch corresponding data according to the case/emergency.
- The app will be developed further to source the GPS of the device and the send the location coordinates to the emergency contacts so that the victim is urgently identified and rescued as soon as possible
- This app can be further developed to be able to track and direct the rescuer to the exact GPS location of the patient/victim.

#### **References**

[1] Google, "Understand Text using OCR with Mobile Vision Text API for Android", [Online]. Available <https://codelabs.developers.google.com/codelabs/mobile-vision-ocr/#0> [Accessed July 17, 2017].

[2] Belal Khan, "Retrieve Data From MySQL Database in Android using Volley,", [Online]. Available <https://www.simplifiedcoding.net/retrieve-data-from-mysql-database-in-android-using-volley/> [Accessed August 01, 2017].

#### 4 Appendix A – Project Work plan





**Appendix B – Contribution by Team Members**

<b>No.</b>	<b>Team Member</b>	<b>Contribution</b>
1.	Wambogo Brian	<ul style="list-style-type: none"><li>• Design</li><li>• Implementation</li><li>• Reporting</li></ul>
2.	Okoth James	<ul style="list-style-type: none"><li>• Idea</li><li>• Design</li><li>• Implementation</li><li>• Reporting</li></ul>
3	Kakooza Williams	<ul style="list-style-type: none"><li>• Design</li><li>• Implementation</li><li>• Reporting</li></ul>
4	Ndagano Robert	<ul style="list-style-type: none"><li>• Design</li><li>• Implementation</li><li>• Reporting</li></ul>