

# Android Mobile Widget for Proximity Hospital Locator

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**Abstract:** The aim of this project is to develop an Android application for helping people to getting nearest hospitals in emergency situation. Google's Android platform for mobile devices has quickly developed into a serious open source alternative. We explored the Android Operating System (OS) and software development environment and evaluated several of its capabilities by constructing a working application. This application collected current location information from the Global Positioning System (GPS) receiver, used the Google Maps Application Programming Interface (API) to determine the location of nearby hospitals, and gives call to nearest hospital, if a person need a help. The platform proved capable of supporting a melding of different services, and we believe such smart phones have broad applicability to public safety problems.

**Keywords:** Android, Emergency, GPS, Google Map, Smartphone.

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## Introduction

Emergency Hospital Locator is an Android application that helps the users to find the hospitals in emergency situation. The main aim of the project is to provide the users an easy way to use application that helps them to find the nearest hospital that can be located using GPS during the time of emergency like accidents. The GPS shows the top 5 nearest hospital present in the current city and also the route to those hospitals. The location and details of the nearest hospital including the address and phone number can be notified through text message in mobile phone. There is a button which is clicked to make a call to the nearest hospital. On receiving the call the hospital sends the ambulance to the requester's location.

## Problem Statement

The world has entered into the "all mobile" era, where mobile phones do it all. Mobile technology solutions allow businesses to connect with the consumer like never before. The Mobile device is being positioned to become the world's leading media solution. GPS tracking technology has been applied to many of today's problems in innovative fashions, including as an aid to health services. By keeping this in view, it has been driven by the motive to provide the users an easy way to find the nearest hospital in a region/place in case the users are not familiar with the corresponding region/place. The efficacy of this project will be the users are provided with an application named 'Proximity Hospital Locator' in their android mobile through which the nearest hospital can be located using GPS during the time of emergency like accidents.

## Algorithm

In this project we are calculating the path between the troubled user and nearest hospital using the two attributes Longitude and Latitude. To calculate this path we used the Haversine Formula. This uses the 'haversine' formula to calculate great-circle distances between the two points – that is, the shortest distance over the earth's surface – giving an 'as-the-crow-flies' distance between the points .

### A. Haversine formula

- $R$  = earth's radius (mean radius = 6,371km)
- $\Delta lat = lat2 - lat1$
- $\Delta long = long2 - long1$
- $a = \sin^2(\Delta lat/2) + \cos(lat1) \cdot \cos(lat2) \cdot \sin^2(\Delta long/2)$
- $c = 2 \cdot \text{atan2}(\sqrt{a}, \sqrt{1-a})$
- $d = R \cdot c$

### System Architecture

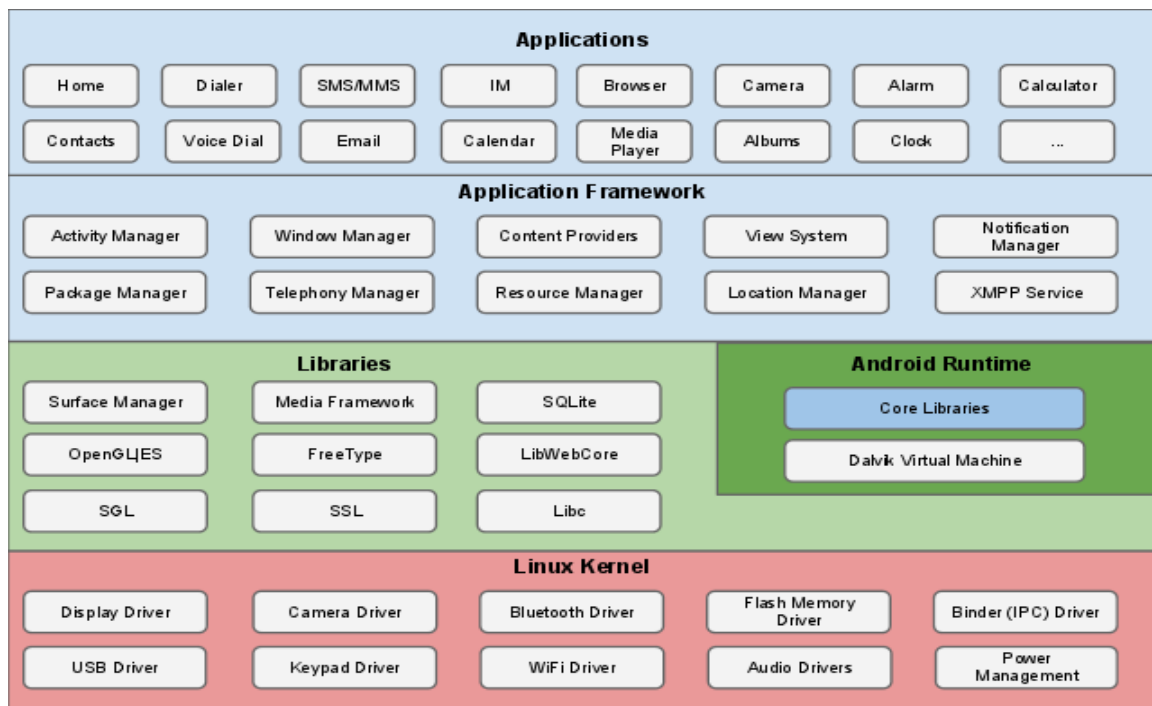


Fig. 1: System Architecture

### Modules

#### A. Design part

- Emergency Button
- Hospitals list
- Make a CallF

In this module we create a button called “Emergency” Once the user click this button then the hospitals list will be shows in the screen. The user can select any one hospital then the call button will be shows in the screen. We can make a call to hospital. The output screen may similar to the following screen.



Fig. 2: Final output template

#### B. Development

- Phase 1
  - Button Click function

Here we show the emergency button.

- Check Internet connection and enable GPS

Here we check the GPS and internet connection if not then we will show the corresponding error popup messages like “enable GPS in your mobile device”

- Send request to Google server

Get the current location and send request to google server with Google API.

- Getting nearest hospitals list using Google API

Getting response from Google server and display hospital list or no data found message in the screen.

b) Phase 2

- Display hospital list (dynamically) with map icon, more details about hospitals

Here we will show the hospital name, address, phone, Place/Route in Google Map.

- Show Hospitals on Google MAP

Place many flag icons in Google map based on hospital locations.

- Display Route map for particular hospital from current location

Display route map from current location to particular hospital.

- Call from Phone

We can make a call to particular hospital.

### Acknowledgment

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### Conclusion

Thus “Android Mobile Widget for proximity Hospital Locator” is important application based on mobile, which is used to provide facility to the customer who suffers from the accident. We can more implement this application using android operating system. This is a new system which enables users to communicate with hospitals in case of emergency as soon as possible. This is first experience who to perform such a professional work. Developing such system was really very exciting, a wealth of information and a very good opportunity to learn process, System analysis, and designing. Finally, conclude your paper at the end of the paper. Discuss all the results you have obtained in concise or detail whatever you want as to show originality and exactness of your manuscript.

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