# Hospital Information Service On Android Mobile Devices

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## Abstract

*The purpose of this project is to give the details of the Hospitals on Maps and give name, address, image and phone call of each hospital. The existing information system did not give the hospitals accurate location and their details. So the solution to this problem is, to give the 100% accurate hospital information of one particular town i.e., Guntur from Andhra Pradesh.*

*Keywords*
*Android Mobile, Google Maps, Maps API Key, Latitude, Longitude*

## 1. Introduction

Android is an operating system for mobile devices such as smart phones and tablet computers. It is a complete and modern Operating System. It is the open platform for developers, users and industry. Android is a free and open for building applications.

Google Inc., Intel, T-Mobile, Sprint, HTC, Qualcomm, Motorola, Samsung, Sony, Dell and others have collaborated on the development of Android through the Open Handset Alliance, a multinational alliance of technology.

## 2. Android & Related Information

In this section, mainly it gives the android basic information. So that we understand the next sections easily.

*A. Android History*

July 2005
- Google acquired Android Inc.

6 Nov 2007
- Open Handset Alliance formed - it is a group of individual companies or organizations which have achieving a common goal i.e., to develop open standards for mobile devices.

13 Nov 2007
- OHA released a preview of the Android OHA

*B. Version History*

Each version is named, in alphabetical order.

- Android 1.0 - released on 23 Sep 2008
- Android 1.1 - On 9 February 2009
- 1.5 Cupcake - On 30 April 2009
- 1.6 Donut - On 15 September 2009,
- 2.0/2.1 Éclair - On 26 October 2009
- 2.2.x Froyo - On 20 May 2010
- 2.3.x Gingerbread -On 6 December 2010
- 3.x Honeycomb - On 22 February 2011
- 4.x Ice Cream Sandwich - 19 Oct 2011



Fig1: Android Versions With Graphical View

*C. Features of Android Mobile*

*Software Features*:

- Application framework enabling reuse and replacement of components

- Dalvik Virtual Machine (DVM) optimized for mobile devices

- Media support for common audio, video, and still image formats (MPEG4, MP3, AAC, AMR, JPG, PNG, and GIF).

*Hardware Features*:

- Cellular networking: GSM, EDGE, 3G (hardware dependent)
- LAN: Bluetooth, and Wi-Fi (hardware dependent)
- Camera, GPS and Compass (hardware dependent)
- Touch screen and accelerometer for motion sensing

### E. Android Mobile Applications

Android devices will ship with a set of core applications including
- An Email client,
- SMS program,
- Calendar,
- Maps, Places
- Market
- Browser, contacts, and others.



Phone, Email, SMS, Web, Gaming, Maps, Social Network

Fig2: Android Mobile Core Applications

### E. Android Market

- Google announced the Android Market on August 28, 2008, and made it available to users on 22 October 2008.

- Android Market is an online software store developed by Google for Android OS devices.

- Preinstalled on most Android devices, allows users to browse and download mobile apps published by third-party developers.

- Users can also search for and read detailed information about apps on the Android Market [1].

TABLE I
COMPARE ANDRIOD MARKET WITH OTHER STORES

| App Store | Percentage |
|---|---|
| Android Market | 67% |
| Windows Phone | 52% |
| Samsung Apps | 39% |
| Apple App Store | 37% |
| BlackBerry App World | 26% |
| Nokia Ovi Store | 26% |

## 3. Design And Implementation

In this section, we design an application and develop into a prototype, for Android mobile operating system.

### A. Prototype of Application

Here, we give the application model and its requirements. We need the following.

#### 1) Map_api_key:

The Google Maps API is free for commercial use, free of cost, accessible to public permitting 25,000 map requests a day.

#### 2) Google map(satellite/street view)

The user can choose either Street View or Satellite View of map . Google Map has developed the "Street View" service; users can view the street view on the street (such as bus stops or signs).

#### 3) Locating Markers(with lat & long)

Here we took the latitude and longitude for locating the exact positions of hospitals on map.

*Calculation:*

Int latitudeE6 =
(int)(Double.parseDouble(all.getString(n))* 1E6);
Int longitudeE6 =
(int)(Double.parseDouble(all.getString(n))* 1E6);

4) *Information Dialog on maps.*

This program gives the dialog box display information. The project displays hospital name, image, address and phone call.

5) *Call Going*

Finally call going facility is incorporated in the project as per our requirement. To take a advice or to fix appointment with doctors of the selected hospitals. Call charges are applicable for make calls.

B. *Functionalities of Application(project)*

In our application, we designed some functions as per our requirements.

1) *Search Function*

In menu of application, we placed search function. Here we physically type the required specialization (like EYE, E.N.T, etc) then we get the list of those hospitals.

2) *Map/Satellite View Function*

In this, user wants to move from street view to Satellite view or Vice Versa then use this functionality. Whenever we selected Map then Satellite view is OFF.

3) *About Help Function*

It gives the details about our application. And also give the help for users that use this application.

4) *Exit Function*

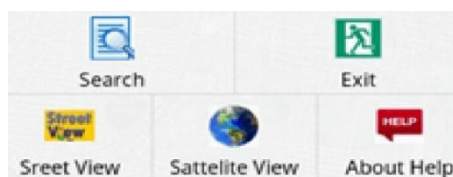It takes out from the application. And it shows the home screen of our mobile.



**Fig 3: Application Menu Design**

# 4. System Design

A. *The development of the program structure*

Android programming project file structure, whether it is generated using the Eclipse project, or use activity creator generate an Android programming project, its structure is as shown in Table II.

Androidmanifest.xml file defines the design application Process. It is function-oriented, and clearly describes the main functions of the application that deal with the information and the implementation of these actions, which are function-oriented. It consists the following four elements (not every program contains these four elements),

1) *Activity (activities)* –

use <Activity> tags In theAndroid mobile phone system, Activity applicationusually represents a display screen. For example:Email your contact list displays a screen that is an Activity, and edit the Address Book screen is anotherActivity.

2) *Intent and Broadcast Receiver (intentions and radio receiver)* –

the use of <receiver> tags Android phonesto operate any one application has its own purposes, such as: the use of FTP file transfer program to download or upload files, using a web browser page,This information obtained in the process ofprogramming in Android, it will call it Intent Receiver(intended receiver). When an application designed togenerate Intent, the aim is to receive the information coming from the other side, you must generate aBroadcast Receiver (radio receiver), and to deal with the information received.

3) *Service (service functions)* –

use <Service> tag when Android application does not require the display, but it should be a long run in the background when the Service is a service function with applications, such as:MP3 player.

4) *Content Provider (content provider)* –

using <Provider>label the actions carried out by the application is to enable users to store their information or documents, for example: a SQLite database program that is part of Content Provider functional programs.

TABLE II. PROGRAMMING PROJECT FILE STRUCTURE TABLE

| Project Directory | Project Subdirectory | Resource File | Archiving Purposes |
|---|---|---|---|
| Project/ | | | |
| | AndroidManifest.xml | | Application Profile |
| | src/ | *.java | Java resource File |
| | res/anim/ | *.xml | Animation Profile |
| | res/drawable/ | *.png,*.jpg,*.gif | Application Image |
| | res/layout | main.xml | Windows Layout |
| | res/values | array.xml | Array Profile |
| | | colors.xml | Draw Color Profile |
| | | dimens.xml | Dimension Profile |
| | | string.xml | String Resource |
| | | styles.xml | Style Profile |
| | res/xml | *.xml | Program the required xml files |
| | res/raw | *.raw | Program resources required to file such as: Audio File |

B.  *Android Applications Operation Model*

Application operation process, the first applications developed packaged into android package.apk application suite installed on Android system, it is called Task (work), that is, Application. when the application process is really the Underlying Linux Kernel implementation, is called a Process (stroke); one stroke under each allowed to have one or more of the Threads (threads) simultaneously, but it is recommended to keep the program developed by Signal Thread design concept of a single-threaded, applications, operating models such as Figure 4 shown.

Fig 4: Android Applications Operation Model
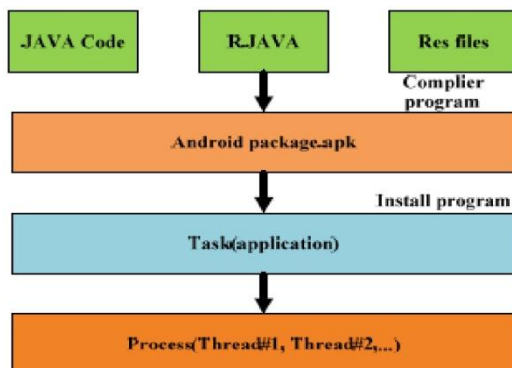


## 5. Results

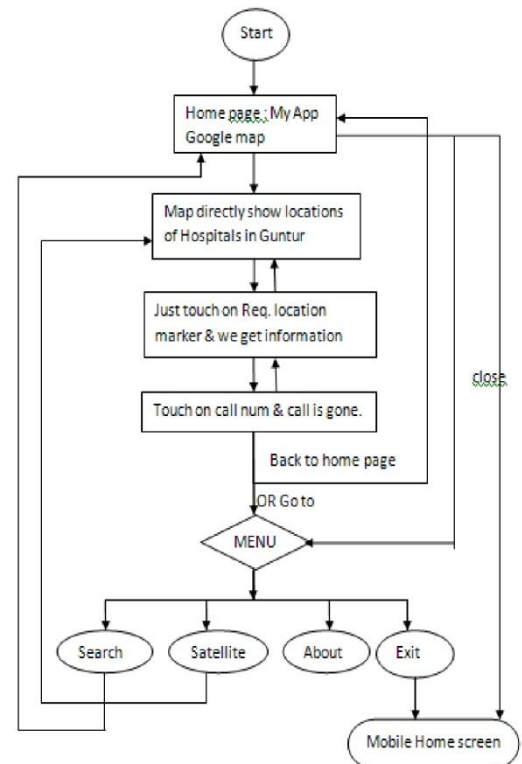Our research and application can achieve all the above Process and Functionalities, such as shown in Figure 5.



Fig 5: Functional Flow Chart For Application

1)  *Includes the following services:*

a)  Show hospital information
b)  Change the map display mode
c)  Accessing internet/Wi-Fi service
d)  Search the Required specialization hospitals
e)  Directly make the call to hospital as per user requirement.

2)  *Screen Shots*

Fig 6: Home Screen For Application And Hospital Information.



Fig 7: Satellite View For Application And Hospital Information.

## 6. Conclusion

User can access via cell phone to the basic Google map feature, readily available around that locality and show the major hospitals with 100 %

accuracy. So This Project gives more details and more accurate results compared to existing system.

We believe in the popularity of Android smart phones in the future and the people who use these service is expected to increase.

## 7. References

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[4]   Http://www.androidzoom.com/android_applications/india+maps

[5]   Http://en.wikipedia.org/wiki/android_market

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[9]    http://mobiforge.com/developing/story/using-google-maps-android

## 8. About Authors

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