

# A Study of City Tour Guide System

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**Abstract**—City tour guide system is application for android and desktop .The city tour guide system can give the information about hotel, restaurant, traffic, hospitals etc. In this system firstly we find GPS location of user in terms of latitude and longitude and provide information of requested city. Depending on the user requirements we provide the information and map according to GPS location. We also provide distance between two cities that user have been requested. It is useful for all the users but for the tourist it is efficient because when tourist is on the move then he/she get information quickly.

**Keywords**— *Android, Spreadsheet, three-layer structure, Global Positioning System (GPS)*

## I. INTRODUCTION

In the tourism industry, tourist information is obtained mainly through newspaper, magazines, radio, and other simple ways those are available. But problem is that, tourist are not able to get information timely when they are on the move.

In this paper, we proposed the software architecture based on web services. This framework introduces three layer architecture, in which it contains user interface layer, business logic layer and server layer. Based on three layer architecture city tour guide system is developed. The purpose of application to develop detail text pictures, and other guidance information are provided and people can better understand tourist attractions and make decision objectively.

This paper consists of following sections: Section II consist of architecture of our system .Section III consist of System Implementation. Section IV consist of Android Architecture Section V contains developing environment and section VI conclude paper.

## II. SYSTEM ARCHITECTURE

The system architecture mainly consists of following components:

- A. Hardware and Software Requirement
- B. Applications
- C. Google Spreadsheet

### A. Hardware and Software Requirement

The application is developed completely on software and hardware specification. The hardware specification describes physical characteristics of each interface between the software

product and hardware components of the system. For desktop application we use PC and for android application we use Android smart phone which contains GPS, GPRS and android OS. The software specifications consist of Windows 7, JDK for Java programming language, Eclipse which is the editor and android OS.

### B. Applications

#### 1. Location Tracker

The location tracker i.e. GPS is used to find location of particular user according to his/her position. For that purpose it uses reverse geocoding techniques in which address is being retrieved by using latitude and longitude returned by GPS device.

#### 2. Map Placer

Google map API is one of most important API in our application. It provides map with located place. In addition, it helps to find the nearest POIs to current location of tourist. It also used to navigate certain place and find distance between two places.

#### 4. Free Communicator

Free communicator is facility provided by system in which users who are registered in desktop application can communicate freely

#### 5. Logger for Application

By using this application, detailed log of all the users is maintained by Google spreadsheet.

#### 6 .Google Drive Handler

Google drive store all information required by the user for both desktop and android application.

### C. Google Spreadsheet

The advantages of using a spreadsheet application are that when data is changed, formulas are automatically recalculated so it saves the time. Google Spreadsheets is a Web-based application that allows users to create, update

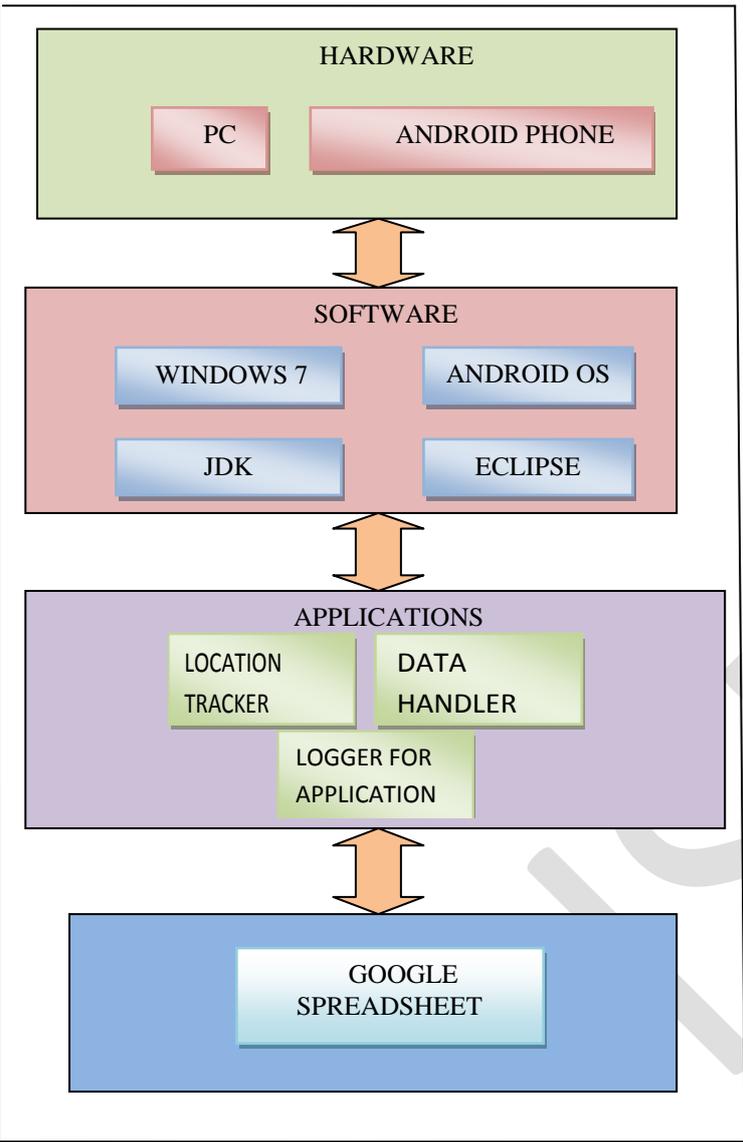


Figure 1. System Architecture

and modify spreadsheets and share the data live online. The Ajax-based program is compatible with Microsoft Excel and CSV (comma-separated values) files. Spreadsheets can also be saved as HTML. Google’s product offers typical spreadsheet features, such as the ability to add, delete and sort rows and columns. The application also enables multiple, geographically dispersed users to collaborate on a spreadsheet in real time and chat through a built-in instant messaging program. Users can upload spreadsheets directly from their computers.

Use a spreadsheet:

1. If you want to perform automatic calculations.

2. If you want to track a list of data.
3. If you want to easily create charts and graphs of your data.
4. If you want to create "What-if" scenarios.

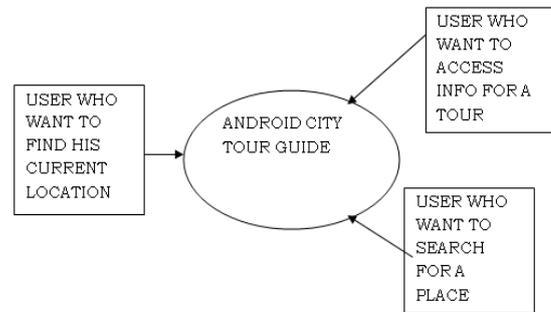


Figure 2. DFD Level 0

1. User can request for search place to the Tourist guide application.
2. User can request to find current user location from this application.
3. User can request to display the information for tour.

**III. IMPLEMENTATION**

**A. Data Management Layer**

Server layer which is spreadsheet is responsible for data storage. For large amounts of data in the spreadsheet, according to the user’s different sensitivity of these different data, the query probability of data are different. To do this, the usually used data can be created as a file which is very small in contrast to the database. So the usually used query can be implemented on the file.

**B. Business Logic Layer**

Business logic part is important part which integrates the client with server. Business logic part is responsible for data processing. The independent design of the data processing make separation between data storage and data display which is benefit for the management and maintain to the system.

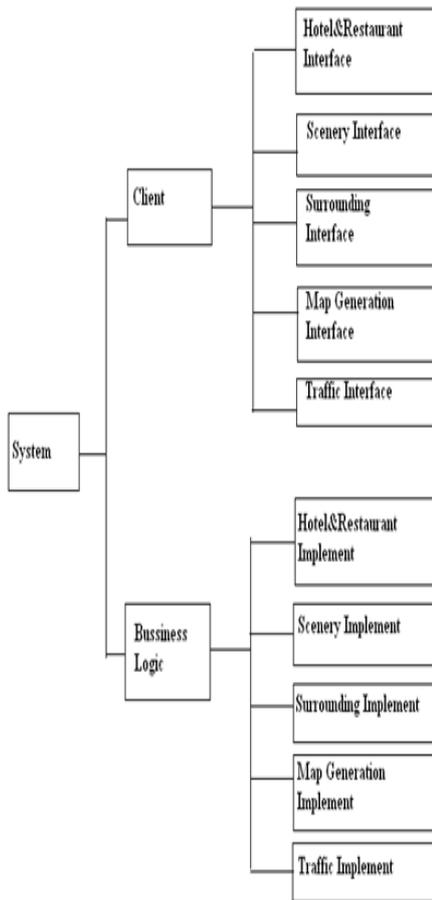


Figure3.System Structure

C. The Client Layer

Client is responsible for providing the interface for input and result output which is used by the users on desktop and Android based smart phones. Users of smart phones can provide input to the input interface to query information, and then connect to the server, and finally display the required data on the client. City tour guide system allows users to easily connect and access information from the server through smart mobile to achieve access to data and information services. Fig.2 shows the interface for scenery, surrounding, traffic, map generation etc, through GPS position functionality.

IV ANDROID ARCHITECTURE

Android will ship with a set of core applications including an email client, SMS program, calendar, maps, browser, contacts, and others. All applications are written using the Java programming language. By providing an open development platform, Android offers developers the ability to build extremely rich and innovative applications. Developers are free to take advantage of the device hardware, access location

information, run background services, add notifications to the status bar, and much more.



Fig. Android Architecture

The application architecture is designed to simplify the reuse of components. Android includes a set of core libraries that provides most of the functionality available in the core libraries of the Java programming language. Every Android application runs in its own process, with its own instance of the Dalvik virtual machine. Dalvik has been written so that a device can run multiple VMs efficiently. The Dalvik VM executes files in the Dalvik Executable (.dex) format which is optimized for minimal memory footprint.

The goal of Android is to deploy the mobile phone sector, including smart phones and flip phone. However, Android comprehensive computing services and rich functional support have the ability to fully extend beyond the mobile phone market. Android can also be used other platforms and application. Android system uses a layered architecture, from the top to the lower which speed up the Configurability, memory, security, data retention and write endurance. The conception of the Android platform is attracting more and more programmers in mobile fields. Android is a package of software for mobile devices, including an operating system, middleware and core applications.

The Android SDK provides powerful tools and APIs necessary to develop applications on the Android platform using the Java programming language. Android platform is of open system architecture, with versatile development but also supports a variety of scalable user experience, which has optimized graphics systems, rich media support.

## V. DEVELOPING ENVIRONMENT

In our system, all the application is written in Java programming language which is used for android platform based APIs with JDK version 1.6. Netbeans with version 6.9 is used for desktop application. For android application; Indigo Eclipse is the editor environment. We also used SDK Android tools to provide Android requirement libraries to develop Android application. Finally, we deal with some APIs. The Google Map API is one of the most important APIs in our application. It provides to create and map with located spots. In addition, it helps to show tourist current location via GPS on the map and helps to find the nearest spots or POIs to current location of tourist.

## VI. RESULT

In this paper we developed application for city tour guide system. In that we provide information about city like hotels, parks restaurant temples etc. also provide map for particular city. Speech interfacing, Free communicator provide in city tour guide system.

## VII. CONCLUSION

In the paper, we present the implementation of city tour guide system. The system provides information about the hotel, scenery, restaurant, traffic, hospitals and so on. The system is a combination of smart phone and Internet services and will facilitate tourist life. The system is integration of desktop and Smartphone with a communication medium as cloud which store all information required by user.

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