

Mobile Location-Based Tour guide System

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Abstract—Mobile phones are the most commonly used communication tools. Using mobile phones to obtain information is not only quick, but also more convenient short cut to improve people's lives. In the paper, we propose the software development architecture based on Web services. This framework introduces the three-layer architecture of Web development into mobile phone software development. Based on the three-layer architecture, the android based city tour guide system is developed. This application to identify the places in video wise. We are using the Android Mobile Phone and 2.3 android version supporting mobiles.

Keywords- *Android Service, Tour Video Guide, Three-layer architecture.*

1. INTRODUCTION

Android has a growing selection of third party applications, which can be acquired by users either through an Appstore such as Google Play or the Amazon Appstore, or by downloading and installing the application's APK file from a third-party site. The Play Store application allows users to browse, download and update apps published by Google and third-party developers, and is pre-installed on devices that comply with Google's compatibility requirements. The app filters the list of available applications to those that are compatible with the user's device, and developers may restrict their applications to particular carriers or countries for business reasons. Purchases of unwanted applications can be refunded within 15 minutes of the time of download and some carriers offer direct carrier billing for Google Play application purchases, where the cost of the application is added to the user's monthly bill. As of September 2012, there were more

than 675,000 apps available for Android, and the estimated number of applications downloaded from the Play Store was 25 billion.

Applications are developed in the Java language using the Android software development kit (SDK). The SDK includes a comprehensive set of development tools including a debugger, software libraries, a handset emulator based on QEMU, documentation, sample code, and tutorials. The officially supported integrated development environment (IDE) is Eclipse using the Android Development Tools (ADT) plugin. Other development tools are available, including a Native Development Kit for applications or extensions in C or C++, Google App Inventor, a visual environment for novice programmers, and various cross platform mobile web applications frameworks.

We design and implement Android based city guide system which can provide user with the information of hotel, attractions, restaurant etc. in city. Suppose you are travelling in a famous city which you are not familiar, it is difficult to find a hotel, scenery, traffic or featured restaurant for a stranger. At this scenario, you can resort to your smart phone which you bring in your pocket. Android is based on Linux ® V2.6 kernel of the open-source mobile phone operating system announced by Google in November 2007. Initially, Android's goal is to deploy the mobile phone sector, including smart phones and cheaper 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 platform is very bright.



Fig 1: Android Mobile

II. ANDROID LINUX

Android's Linux kernel has further architecture changes by Google outside the typical Linux kernel development cycle. Android does not have a native Window by default nor does it support the full set of standard GNU libraries, and this makes it difficult to port existing Linux applications or libraries to Android. Support for simple C and SDL applications is possible by injection of a small Java shim and usage of the JNI like, for example, in the Jagged Alliance 2 port for Android.

Certain features that Google contributed back to the Linux kernel, notably a power management feature called wakelocks, were rejected by mainline kernel developers, partly because kernel maintainers felt that Google did not show any intent to maintain their own code. Google announced in April 2010 that they would hire two employees to work with the Linux kernel community, but Greg Kroah-Hartman, the current Linux kernel maintainer for the stable branch, said in December 2010 that he was concerned that Google was no longer trying to get their code changes included in mainstream Linux. Some Google

Android developers hinted that "the Android team was getting fed up with the process," because they were a small team and had more urgent work to do on Android.

III. ANDROID SYSTEM ARCHITECTURE

Fig 3 explain about Android system uses a layered architecture, from the top to the lower are the application layer,

application framework layer, the system run time library and kernel layer.

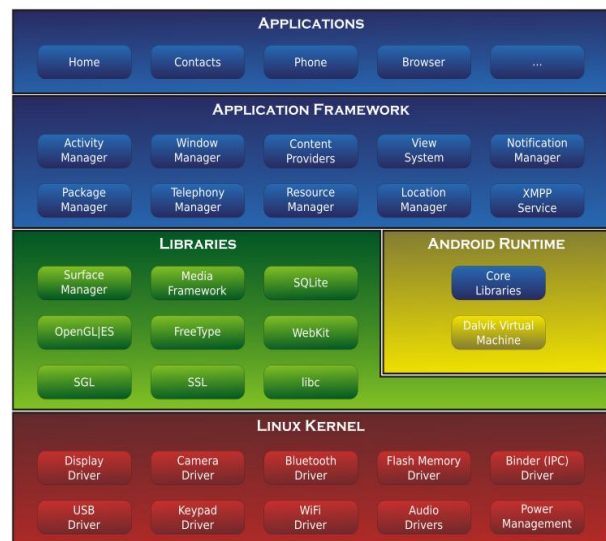


Fig 2: Android Architecture

Application layer provides a wealth of core applications, including email client, SMS short message programs, calendar, maps, browser, etc. All applications are written using the JAVA language. Application framework layer simplifies the reuse of components; any application can publish or use other applications released block. System runtime library contains a set of core runtime libraries and the Dalvik virtual machine. Linux core layer which use of YAFFS2 file system is used to provide services underlying systems, and it locates between hardware and other software layers.

IV. SYSTEM ARCHITECTURE

Fig 4. The system adapts three-layer architecture which is borrowed from Internet application development. The common used three-tier architecture in Internet application development consists of the Browser layer, Business logic layer and Server layer. In this paper, we introduce User interface layer instead of Browser layer. User interface layer which is deployed on Android based smart phone is responsible for display of the system interface and data required by user. It also provides the connection to the Internet through GSM/3G technology. Business logic layer is mainly responsible for data processing and provides the communication between User interface layer and Server layer. It is the most important part in the system and is deployed on Tomcat. Business logic layer receives the query request from the User interface layer, processes the request and sends the query result from Server layer to User interface layer to display. The data in

Database on the Server generally are very big, so Business logic layer introduce the Lucene engineering which is used to construct index for data in order to improve the process efficiency. We also use Lucene to implement Chinese segmentation functionality in order to improve the accuracy of the result. Web Service Axis2 is used to service distribution for the query result. Server layer is responsible for database storage and access operations.

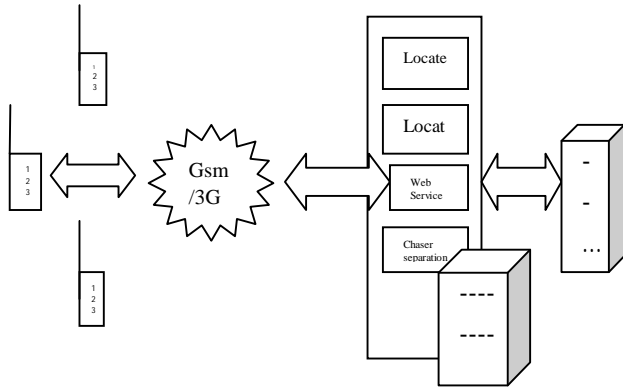


Fig 3: System Architecture

V. TRAVEL GUIDE FUNCTION

A. Video Search

This module is responsible to do video search using Google’s search engine. The result of this search is a list of videos related to the user’s current location. The selection of the most relevant features allows us to increase the performance and reduce the amount of data to be transmitted.

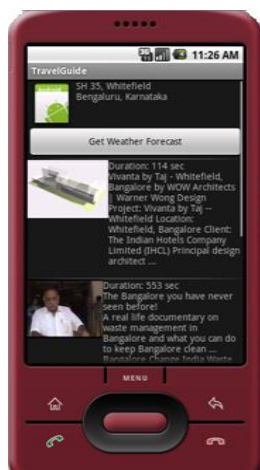


Fig 4: video search

B. Travel Guide Player

This module is responsible to play the video which user selects. Playing video in Android from a file or from a stream over the network is relatively simple. The supported core video formats are,

- MP4 (MPEG-4)
- H.263
- H.264 (AVC)

Though particular devices may support additional formats. The Android multimedia framework includes support for playing variety of common media types, so that you can easily integrate audio, video and images into your applications. You can play audio or video from media files stored in your application's resources (raw resources), from standalone files in the file system, or from a data stream arriving over a network connection, all using Media Player APIs.

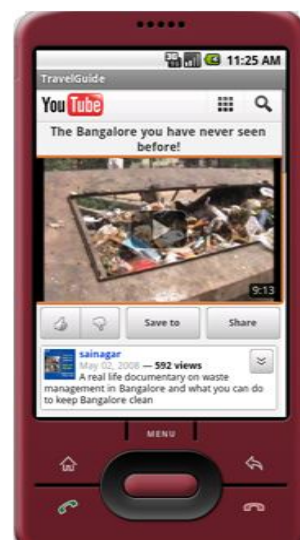


Fig 5: Video Player

C. Android Support Version

1) Android 2.3 (All Versions)

Android 2.3 includes an NFC stack and framework API that lets developers read NDEF tags that are discovered as a user touches an NFC-enabled device to tag elements embedded in stickers, smart posters, and even other devices. The platform provides the underlying NFC services that work with the device hardware to discover tags when they come into range. On discovering a tag, the platform notifies applications by broadcasting Intent, appending the tag's NDEF messages to

the Intent as extras. Applications can create Intent filters to recognize and handle targeted tags and messages. For example, after receiving a tag by Intent, applications extract the NDEF messages, store them, alert the user, or handle them in other

VI.GEOCODING

This module allows user to set some settings for the applications. Geocoding is the process of transforming a street address or other description of a location into a (latitude, longitude) coordinates. Reverse geocoding is the process of transforming a (latitude, longitude) coordinate into a (partial) address. The amount of detail in a reverse geocoded location description may vary, for example one might contain the full street address of the closest building, while another might contain only a city name and postal code. The Geo coder class requires a backend service that is not included in the core android framework. The Geo coder query methods will return an empty list if there no backend service in the platform. Use the is Present () method to determine whether a Geo coder implementation exists.

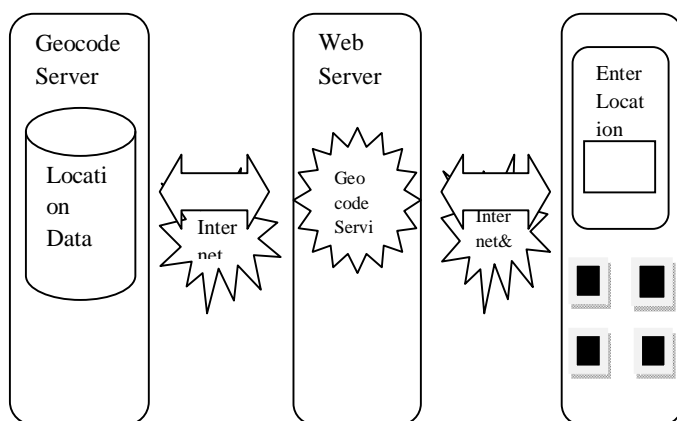


Fig 6: Geocode communication



VII.CONCLUSION

We present the design and implementation of the Android based city tour guide system. The system is based on Web Service technology and adapts three-layer architecture. Lucene is used to create index for the usually used data in order to implement efficient query. The system provides information query of the hotel, scenery, restaurant, all videos wise displayed in your Android mobile phone side. The system is a combination of smart phone and Internet services and will facilitate tour and life for user.

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