Developing Mobile Application Using Android Platform

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ABSTRACT

This paper focusses on the creation of equipment of versatile world, the execution list is much higher than the genuine necessities of the product setup. Telephone's components more rely upon programming. As the Android working framework is getting more famous, the application in light of Android SDK pulls in a great deal more consideration. However, now, a percentage of the Android application interface is excessively lumbering, pop-up advertisements is overmuch and the capacity is excessively single, these cause some drawback, making it impossible to the clients. Three sorts of uses are created base on Java and Android SDK - video player and sound player.

Keywords— Android, Android SDK, Letters, Android SDT, Media Player , Audio Player.

1. INTRODUCTION

As of late, the rise of PDAs has changed the meaning of cellular telephones. Telephone is no more only a specialized apparatus, additionally a vital part of the general population's correspondence and everyday life. Different applications included boundless diversion for individuals' lives. It is sure that the eventual fate of the system will be the portable terminal.

Presently the Android framework in the gadgets business sector is turning out to be more prevalent, particularly in the cell phone market. On account of the open source, a portion of the advancement devices are free, so there are a lot of utilizations created. This extraordinarily motivated the general population totalizes the Android framework. What's more, it gives an exceptionally helpful equipment stage for designers with the goal that they can spend less push to understand their thoughts. This makes Android can get further advancement.

As the advanced cells and Android framework getting famous, the operations like listening to music, watching recordings, tweeting and a few others can be moved from the PC to a Telephone now. We use the Java dialect, the Eclipse stage, Android ADT and the Android SDK to add to these thee applications.

1.1 Android Architecture

We concentrated on the Android framework engineering. Android framework is a Linux-based framework. As appeared in Figure, the

Android design comprises of four layers: Linux part, Libraries and Android runtime, Application system and Applications.
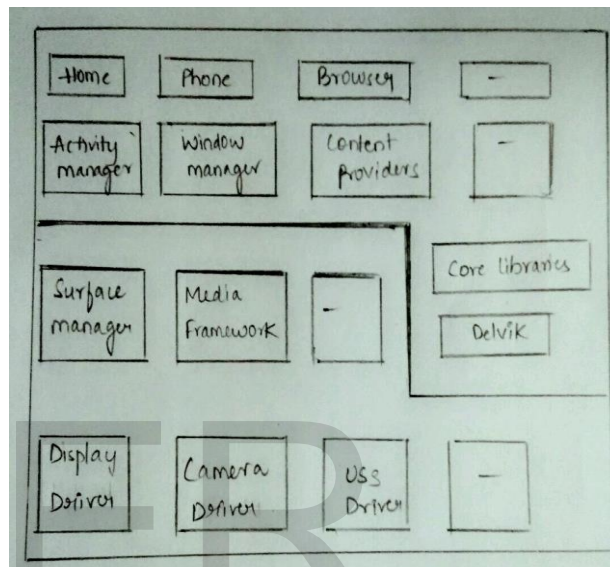

Fig 1: Android architecture

1.2 Applications

Maintaining the Integrity of the Specifications Android application will be transported with an arrangement of center applications including customer, SMS program, date-book, maps, program, contacts, and others. All these application projects are created in Java

1.3 Application Framework

The engineer is permitted to get to all the API system of the center projects. The application system streamlines the reuse of its parts. Whatever other application can discharge its useful segments and every other application can get to and utilize this segment (yet need to take after the security of the structure). Same as the clients can have the capacity to substitute the system segments with this reuse component.

Thus the functioning of framework is explained clearly here using various strategies.

1.4 Libraries and Android Runtime

The library is isolated into two segments: Android Runtime and Android Library. Android Runtime is comprised of a Java Core

Library and Dalvik virtual machine. The Core Library furnishes Java center library with generally works. Dalvik virtual machine makes some particular upgrades for cell phone.

Android framework library is backing the application system; it is likewise a connection interfacing between application structure and Linux Kernel. This framework library is produced in C or C++ dialect.

1.5 Linux Kernel

The piece framework administration gave by Android inward atomic layer depends on Linux 2.6 part, Operations like inner stockpiling, process administration, web convention, base drive and other center administration are all taking into account Linux bit.

1.6 Services

The service provided is the Background process. There is no UI here the example for this can be a media player. The other service is that it can connect (bind) to a service which is currently running or by starting it.Once it is bound that can communicate through predefined interface. The example for this is Media Player: start, stop.

1.7 Intents

Contains the target object, the target method, and a URI of data to act on. It activates components. Aside from content providers. Intent can call startActivity, startService, sendBroadcast.

Android Activity Lifecycle is controlled by 7 methods of android.app.Activity class. The android Activity is the subclass of ContextThemeWrapper class.

An action is the single screen in android. It is like window or frame of Java.

By the help of activity, you can place all your UI components or widgets in a single screen.

The 7 lifecycle method of Activity describes how activity will behave at different states.

 Figure 3 illustrates the life-cycle of activity –function used in Mobile Application , which comprises of the following phases such as Activity Launched, Activity Running, Activity Process Killed, Activity Shut Down, that will be having numerous methods that are clearly visible in the figure.

Activity Launched consists of onCreate(),onStart(), onResume (),onRestart().Then we come across Activity running. IN Activity running consists of onPause(), onStop(), onDestroy(). After onStop() if there are any changes then we back to any activity killed and will go to onCreate().

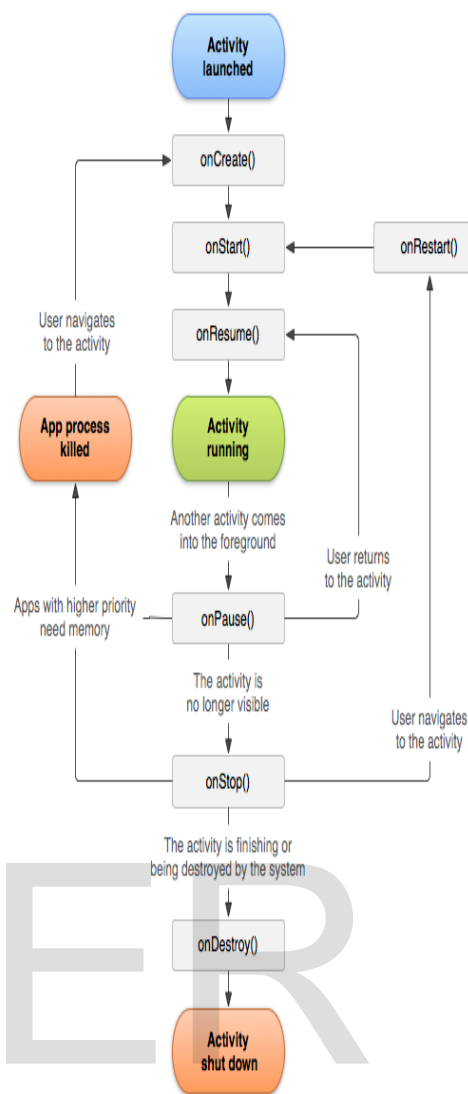If there is no fault then activity shutdown takes place.

Fig 2: Android Activity Lifecycle

2. BACKGROUND AND THE STATE OF THE ART

Android OS is an open source an Operating System for mobile devices such as smartphones and tablet computers. Android was developed by the Open Handset Alliance, led by Google, and other companies. Android offers a unified approach to application development for mobile devices which means developers need to develop only for Android, and their applications should be able to run on different devices powered by Android. The first beta version of the Android Software Development Kit (SDK) was released by Google in 2007, whereas the first commercial version, Android 1.0, was released in September 2008. On June 27, 2012, at the Google I/O conference, Google announced the next Android version, 4.1 Jelly Bean. Jelly Bean is an incremental update, with the primary aim of improving the user interface, both in terms of functionality and performance. The source code for Android is available under free and open source software licenses. Google publishes most of the code under the Apache License version 2.0 and the rest, Linux kernel changes, under the GNU General Public License version 2.

3. METHODOLOGY

3.1. Video Player

Video Player is accomplished through the Eclipse stage. Keeping in mind the end goal to create android application, we will introduce a module for Eclipse: Android Development Tools (ADT)[7]. Once introduced, download Android SDK, introduce and arrange the SDK, then we can add to a video player.

Our examination starts with the investigation of working component, Android stage media layer structure, xml adaptable interface, Content Providers.accomplishes record checking to get rundown of media documents. After that, we could add to an Android-based versatile video player.

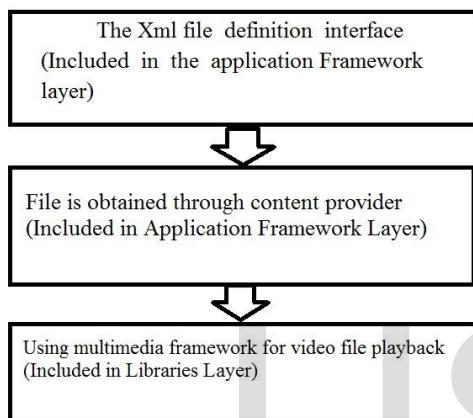Acknowledge media library, video player, document opening, sound, video, photos etc.

Fig 3: Framework graph or flowchart

3.2 Media Player

The applications of Android-Media Player are implemented by JAVA, realized logic processing. JAVA program realizes the playback of video file and online video by calling the underlying media library.

Media Player can be roughly divided into two parts at run time:

3.2.1 Client and Server.

They are running in two separated processes. Binder used between them to achieve IPC communication

In the Android media layer, the most vital class is Media Player. MediaPlayer class and many more.

JAVA program calls the hidden Media Player class to execute Media gushing. To start with, the Media Player class gets a name for media. Player administrations through IService _Manager getService interface. After that, every one of the operations is directed through this MediaPlayer player and the interface is IMediaPlayer. The product interface is straightforward, component rich, smooth operation furthermore by calling an outer project to accomplish sound and picture playback.

The sound player improvement instrument is the same as the one of video player. Framework structure and the procedure is the same as

the procedure of video player. Likewise characterizes the interface in the Application Framework layer, and after that procures music records through Content Resolver in the Android Framework layer. At long last, plays the music by utilizing the Service part calling the MediaPlayer class in the Libraries layer. The framework structure is appeared in Figure.
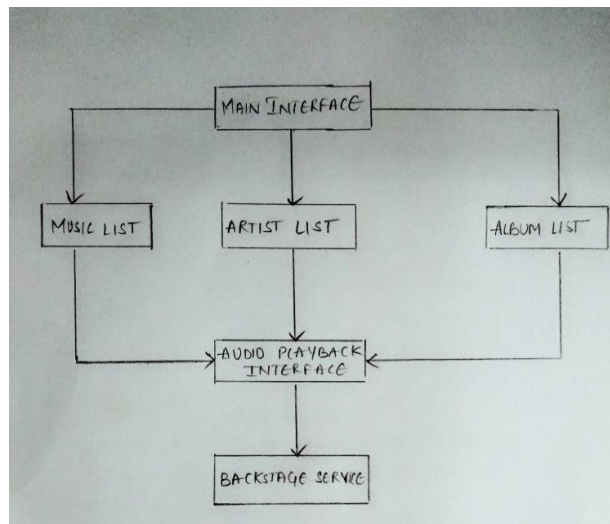

Fig 4: framework flowchart

The fundamental interface module is the passage of the application. Clients will see the primary interface modules subsequent to beginning the application. The module itself does not mirror any of the data to the client, simply call list module to show. Three records are illustrated: music list, collection rundown and craftsmen list. The primary interface module is acknowledged by calling MusicList Activity, AlbumListActivity and Artist List Activity module.

Music playback module gathers the plan sent from List module and broke down it, then calls the mood melodies administrations to play the sound document. The View parts gives player with some essential capacities, for example, play, stop, quick forward, quick rewind, single play, irregular play,

And so forth. This module will make the comparing intelligent investigation after the clients did operations to the segments. Fitting reaction and changes will be done by the outcomes examined.

4. ADVANTAGES

Multitasking – Yes, Android phones can run many applications, it means you can browse, Facebook while listened to the song.

Ease of Notification – Any SMS, Email, or even the latest articles from an RSS Reader, there will always be a notification on the Home Screen Android phone, do not miss the LED indicator is blinking, so you will not miss a single SMS, Email or even Miscalls.

Easy access to thousands of applications via the Google Android App Market – When you love to install applications or games, through Google's Android App Market, Again can download applications for free. There are many thousands of applications and games that are ready for download on Android phones.

Phone options are diverse – Talk Android phone, it will feel 'different' than the IOS, if the IOS is limited to the iPhone from Apple, then Android is available on mobile phones from manufacturers, rom SonyEricsson,Motorola HTC to Samsung. And each handset manufacturer also presents an Android phone in the

style of each, such as Motorola with its Motoblur, Sony Ericsson with its Timescape. So you can freely choose the Android phone in accordance with the 'brand' favorite .

Can install a modified ROM – not satisfied with the standard view of Android, do not worry there are many custom ROM that can be used in your mobile phones Android.

Widget – absolutely right, with the widgets on the home screen, you can easily access a variety of settings quickly and easily.

Google Maniac – If you are a loyal user of Google services ranging from Gmail to Google Reader Android phone has integrated with Google services, so you can quickly check e-mail from Gmail.

4. 1 Limitations

Continuous Internet connection – Yes, most Android phones require a simultaneous Internet connection alias continuously active. That means must be prepared to subscribe Again GPRS packet that suits your needs.

Advertising – Application in the Android phones can indeed be obtained easily and for free, but the consequences in each of these applications, will always be ads on display, either the top or bottom of the application.

5. FUTURE SCOPE

Future scope dealing with android applications takes more localized content. It also works on more mature business applications, applications for Tablet devices Applications utilizing location and maps Social Network aggregators Satellite Systems (SSTL), Software Development process for mobile applications.

With increase in the number and make of mobile phones, there comes a demand for better applications. And in turn, huge scope of android application development in India. Now this puts a light on why companies like Nokia, BlackBerry, Samsung, HTC, Motorola, Google and many others are going wild with their innovations-Increase in the need and use of Mobile applications.

As android is maintained as an open source code and licensing allows the developers and device manufacturers to modify the software according to their needs. Android platform has brought about cutting-edge technologies in app development.

6. RESULTS AND OBSERVATIONS

Fig.5 shows the display of the phone in which a video is running using video application.

The first part contains the already playing video and the second part consists of no video. Before the beginning of the video we are able to see only blank screen.as soon as we select a file and start playing then we are to see the video playing.

The image also show the contents present in the tool bar like start, pause, stop, volume etc.

Fig 5: Video Player

Fig 6: sound player

Fig.6 consists of image showing the functioning of sound player in an android phone.

The top 5 android applications observed are:-

Best file manager app for Android- Solid Explorer, Bestproductivity app for Android- Dashlane, Best job search app for Android-Indeed's, Best weather app for Android- MORECAST, Best launcher app for Android- Action Launcher .

7. CONCLUSION

From all the above mentioned strategies we can conclude that mobile application development using android as a platform is playing a major role now a day.

The frameworks played a major role in every aspect.one can create their own applications if they are aware of these frameworks. Even if we consider the limitations in factor everything as its own advantages and disadvantages. But considering this technology with other Technogym this technology is very useful.

Equipment, programming and system always play a major part in the entire processing. The equipment which we use, programming we did and system we take lets us to function efficiently with limited number of errors.

The test review includes three situations including equipment, programming and system.

The frameworks played a major role in every aspect.one can create their own applications if they are aware of these frameworks. Even if we consider the limitations in factor everything as its own advantages and disadvantages. But considering this technology with other Technogym this technology is very useful .

Test equipment environment is Lenovo Y460 portable PC and millet M1 telephone; programming environment is windows 7 and telephone framework environment is Android 4.0.3.

System environment is China Mobile which is 10M broadband, WIFI LAN and China Mobile GPRS system.GPRS architecture works on the same procedure like GSM network, but as additional elements that allow packet data transmission. This data network overlaps a second generation GSM network providing packet data transport at the rates from 9.6 to 171 kbps.

By testing every capacity on cell telephone and the PC test system, the outcome demonstrated that video player and sound player run well.This tells us that functioning of the sound player and video player of an android phone is far better than the previous software.

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