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# Flash Alert Notification System using Android

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**Abstract**: This project aims in developing an application for daily use having easy operation and easy to use. Usually when people are in meeting or any discussion where they have to put their mobile phones on silent mode on which their mobile phones don't even vibrate or else they are far from their mobile at that time. At that time when they get a call on their mobile phones, they sometimes don't even know that they are getting a call or someone is calling them. Flash Alert is an app from which whenever you'll get a call, your mobile phone's flash will start blinking and you will get to know that you are getting a call on your mobile phone. Also, this app has another functionality of acting as a torch light. It has a button which adds a functionality of torch light. Whenever you will click on that button, flashlight will get on.

**Keywords**: Android, Genymotion, APK, ADT.

## I. INTRODUCTION

Android is an open source and Linux-based Operating System for mobile devices such as smart phones 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 only develop 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 where as 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.It is developed by Google and later the OHA (Open Handset Alliance). Java language is mainly used to write the android code even though other languages can be used. The goal of android project is to create a successful real-world product that improves the mobile experience for end users. There are many code names of android such as Lollipop, Kitkat, Jelly Bean, Ice cream Sandwich, Éclair, Donut etc

- **Background of Project**

Flash Alert is an application which focuses on developing a computerized system to give alerts for all notifications. In everyday life, there is so much work to do that we intentionally or unintentionally miss our calls, flash alert solves this problem as blinking of flash light is there whenever there is a call. Also if we are unable to find our phone then also this application is useful in this situation. This application is a simple, advertisement free development designed for the ease of user, so that they never miss a call

- **Problem Recognition**

The main problem here is that, there are many applications in market which provide these services but either they work only when user is connected to internet or there is separate application for flash alert or blinker. Moreover when connected to internet there are lots of advertisements which causes delay, as a result user gets irritated with the application. One more important factor is size of the application; all applications available are of sizes that take lots of space in storage, so this has to be eliminated. A solution has to be developed which will provide facilities for user of both alerts and blinker in a single application.

- **Objectives**

The objectives that will be achieved after completion of this project are discussed in this subchapter. The objectives are as follows:

• Application having alert system for all incoming calls
• A convenient switch on/off light
• A simple ad free application that is less in size

## II. RELATED STUDY

There are many applications available for same purpose. But they fail to give efficient result. There is a great problem of size of the application as most of the applications have bigger size and it creates problem for the user to store.

There is no application that has facility of both blinker and flash light. There was a great problem for the older age groups to learn about downloading mobile applications or knowing about applications. Yet references have been taken from various other applications like flash

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alert 2[1] in existing environment for some guidance. We surveyed over many peoples who come across day to day problems with smartphones then we came on conclusion over all these suggestions and limitations to make such an application that provides a fast and easy solution

## III. PROPOSED SOLUTION

Flash Alert is simple, free flash light application. Instantly turns on flash light of the device. On installing this app, whenever there is a call, flash light will blink and will notify the call. It is very useful whenever phone is on silent mode and we are away from the phone, we will be able to know from the flash .It has a convenient switch off/on light, just like a real flash light. Also blinking mode is supported during phone calls.

## IV. TOOLS AND TECHNOLOGIES USED

**1. Genymotion:**
For testing any android application, an emulator is used-Genymotion [2] which is great for testing application. I used Genymotion to test Flash Alert for each and every screen that was created. Genymotion comes with pre-configured. Genymotion is the new enhancement for testing of android application as it has several features like new player design, installer and many more. With this tool the testing of our system was very convenient and satisfying At present Genymotion is in beta version and can be used for operating systems like Linux, Windows and Mac OS X and requires Virtual Box.

**Some highlights of Genymotion are:**

- It can be easily download and run pre-configured virtual images
- Networking: Ethernet (emulates Wi-Fi connection)
- GPS (with configurable coordinates) and battery (with configurable battery levels) emulation widgets
- Display: OpenGL hardware acceleration, multiscreen, full screen display;
- Genymotion shell which allows you to interact with VM using a command line;
- ADB support;
- Eclipse and Android Studio plug-in;

**2. Eclipse**
Another platform that was used for Flash Alert is Eclipse truly designed for building integrated web and application development tooling. By design, the platform does not provide facility of end user functionality by itself. The value of the platform encourages: rapid development of integrated features based on a plug-in [4] model.
Eclipse provides a platform for common user interface (UI) model for working with tools. It is developed to run on multiple operating systems also providing robust integration with each OS. Plug-ins can program to the Eclipse portable APIs and run unchanged on any of the supporting OS.
At the base of Eclipse is architecture for dynamic discovery, loading, and running of plug-ins. The platform UI provides a standard user navigation model. Each plug-in can then focus on doing a small number of tasks like Defining, testing, animating, publishing, compiling, debugging, diagramming etc.

**Android Development Tools for Eclipse:**
Android Development Tools (ADT) [3] is a plug-in for the Eclipse IDE that is designed to give a powerful, integrated environment in to build an Android applications.ADT extends the capabilities of Eclipse to quickly set up new Android projects, create an application UI, add packages based on the Android Framework API, debug applications using the Android SDK tools, and even export signed (or unsigned) .apk files in order to distribute application.
Integration, custom XML editors, and debug output pane, ADT gives boost in developing Android applications

## V. TESTING OF APPLICATION

Android tests are based on JUnit, and we can run them either as local unit tests on the JVM or as instrumented tests on an Android device.

**Test Types:**
Android Studio was used to write tests, the test code was into one of two different code directories (source sets). For each module in this project, Android Studio includes both source sets, corresponding to the following test types:

**Local unit tests**
Located at module-name/src/test/java/.These tests run on the local JVM and do not have access to functional Android framework APIs.

**Instrumented tests**
Located at module-name/src/androidTest/java/.
These are all tests that must run on an Android hardware device or an Android emulator.
Instrumented tests are built into an APK that runs on the device alongside your app under test. The system runs test APK and application under tests in the same process, so tests can invoke methods and modify fields in the app, and automate user interaction with application.

**Test APIs**
The following are common APIs used for testing apps on Android.

**JUnit**
Unit or integration test class is written as a JUnit 4 test class. As the framework offers a convenient way to perform common setup, teardown, and assertion operations in test. A basic JUnit 4 test class is a Java class that contains one or more test methods. A test method begins with the @Test annotation and contains the code to exercise and verify a single functionality (that is, a logical unit) in the component that we wanted to test.

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**Android Testing Support Library**

The Android Testing Support Library provides a set of APIs that allow you to quickly build and run test code for apps, including JUnit 4 and functional UI tests.

## VI. RESULTS

After doing overall implementation of this system I came to following result after doing testing on Android mobile phones I found some results which satisfies mentioned objective, requirements and parameters.

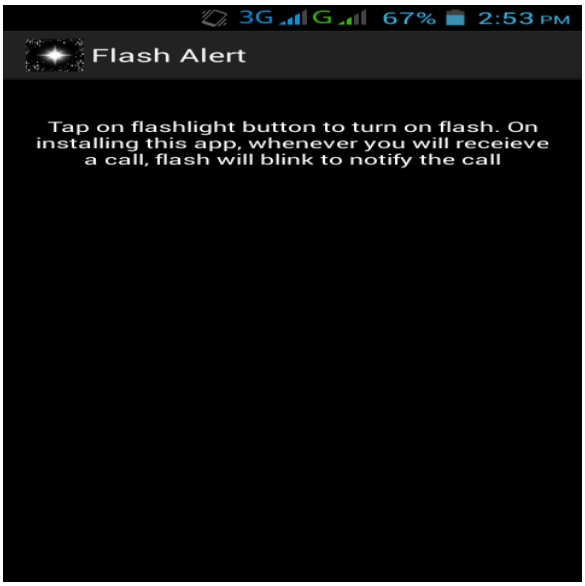


Fig.1 Flash Alert Main Activity Screen installed on users mobile

Here is our main activity screen in fig.1 showing flash alert [5] .Tap on flashlight button to turn on flash. On installing this application whenever there is a call, flash will blink to notify the call.


Fig.2 Flash Alert opening screen when flashlight is off

This fig.2 shows a simple flashlight button in off state. User has to tap on flashlight to activate it.


Fig.3 Flash Alert opening screen when flashlight is on

This fig.3.shows screen when flashlight is on, now whenever there is a call, flash light will blink and user gets to know about the call

## VII. CONCLUSION AND FUTURE WORK

"Flash Alert - Notification System using Android" is developed for Android mobile phones. The main objective of this system is to make users comfortable by assuring them that will never miss a call. As due to hectic lifestyle and work pressure we most of the time are unable to reach to phone while working, as a result we sometimes don't get the emergency calls also, this creates problems for us in both professional and personal life, flash alert is designed to solve this problem as after installing this application from playstore, users only have to on the flashlight switch and that's all ,they will never miss a call as every time there is call ,flashlight will blink and they will know about the call, the convenient use and easy user interface makes this system efficient for users.

Future enhancements of this system will contain features like users can set the blinking rate according to their choice. At present this system is only developed to notify about the call, in future this system will be enhanced for customized applications like messaging, e-mails, social sites, reminders for events etc. It is socially beneficial.

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## BIOGRAPHY

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