

An Extended Emergency Call for Android Devices (E++)

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ABSTRACT

This paper discusses the concept of extended emergency call for android devices. The idea of this paper is that we have a handful of android as well as iOS applications for making an emergency call but non to detect whether the incoming call is emergency or not. So, the concept of E++ is completely new. This application lets the user to know that the incoming call is an emergency call and should not be ignored in any circumstances.

KEYWORDS: Emergency, Android, iOS, Applications

I. INTRODUCTION

Now a days safety and security of an individual has become a major issue in this society. At situations of emergency several applications comes into action as rescue, the victim uses current applications like bsafe-personal safety app, guardly, etc. to make a call to intimate the persons listed as emergency contacts about the situation, but what if the person being called is busy and ignores the call. All the purpose of emergency calls goes in vain. But, here comes E++ to eradicate this problem. E++ is an application developed in android studio which intimates the receiver that the call is an emergency call and must be attended in any case.

Through E++ users get options to choose between intense vibration or colour change of their home-screen. Which helps them to identify the call easily.

II. LITERATURE SURVEY

Though there are many apps present in the market for emergency calling system, there are none to detect an incoming emergency call. Some of the apps having related to this topic are thus discussed below to get a better understanding of our proposed application. These applications are available for free on various platforms such as Google Play Store, Apple store etc.

BSAFE-PERSONAL SAFETY APP is the app was developed by Bipper Incorporation on 6th March 2015. It provided the user with many new features such as; the user can create a "social safety network" of individuals who are notified in case of emergencies, the user can send location info, initiate a fake call, send an alarm to friends. There is no limit on a number of contacts the user wants to add on the network. The app's motto is "Never Walk Alone". This app helps the user to create a gang of 'Guardians' and SOS message will be received by them when the user is in trouble. Also, another good feature of this app is one of the guardians will also be called. The SOS message also includes the location of the user via GPS. The user can also enable the GPS tracker and let the friends know location at any time. The app offers an audible alarm and immediately starts broadcasting video captured by the user's phone and GPS location.

KITESTRING application is not similar to the other most commonly occurring apps. It is basically a website that helps in checking in and sending alerts to pre-selected contacts if the user fails to respond to the issued check-in. These check-ins are sent in form of traditional text messages and thus even works with feature phones. The user can customize their SOS messages according to them and activate an SMS broadcast that will be sent out in 30 minutes, 2 hours, 5 hours or 12 hours. Once the set time is up, the user will get a check-in text message and if for some reason he/she fails to respond within 5 minutes, the site will inform the registered contacts.

BUGLE was created with the help in form of input from Search and Rescue Professionals. This app is available to iPhone users and was created predominantly for hikers, runners, cyclists and other adventurers who don't want to take their phone with them when they are out on an excursion. Users, generally having an idea about how long they will be gone set a time period about how long they will be gone and where they are going to be. If due to some reason they fail to check in within that time limit, the emergency contacts listed in their app will be alerted by email and text. This app can also be used by another category of people who know their time-table beforehand. One of the best features of the app is that with the help of mobile phone tracking, it enables the user to leave behind a digital breadcrumb whenever they have cell service.

ICE Standard app was designed to work like a digital emergency card of the user that the emergency responders can check in case the person is unconscious or is not in a condition to explain the situation. ICE Standard, "The official in case of emergency standard card app", displays the user's health information on the lock screen of the phone so that emergency responders can know the necessary information at a glance. It also has a feature which sends the details displayed on the screen to the emergency call operators.

GUARDLY app was specifically designed with the security of a person in mind. During the setup process, after downloading the app, the user can select the emergency contacts in the list. When in distress, if the user opens the app it will start a countdown and send out an emergency alert to friends and family on the emergency contact list. Apart from its main feature it also helps the user to connect with emergency services, provide real-time location tracking and allows sounding an emergency beacon in the form of a loud whistling noise. The app can be downloaded for free but to access more of its prominent features, the user has to pay a specific amount.

III.EXISTING SYSTEM

According to the literature survey, there are many apps in market dedicated for emergency calls and text messages but none for detecting. Even phones have emergency call feature on their lock screen. But the receivers of emergency calls have no idea that someone calling them is making an emergency call. Thus, this project idea of detecting an emergency call in a market where everyone is focused on making emergency call is entirely new. Recently many apps have been developed which records and sends the details regarding the incident to all the registered contacts. These apps or devices are free for everyone to download and use. Most of the app contains the police phone directory, emergency help buttons and location tracking system to aid the bearer of the device or app. The most obvious limitations or shortcomings that these apps or devices experience is that nobody will download it as the technology doesn't have regular use and is thus not useful for many peoples. It uses phone memory which the user can utilise in some other way.

IV.PROPOSED SYSTEM

Initially the app will be developed just to detect an emergency call. But in future works, focus on shortcomings of many other apps will be done. In the proposed app, the user will have to download the app and register on the app by providing the necessary details. Then afterwards, after logging in and changing the necessary settings, the user is prepared to receive emergency calls. The settings include, the screen colour when any emergency call is received, which will be different than other normal calls and sound mode, which means that even if the phone is in strict silence mode and it detects an emergency call it will vibrate or sound a shrill tune. Thus, these settings will help the user to decide which mode is he/she likely to detect automatically in seconds in case of emergency.

V.SYSTEM ARCHITECTURE

The system architecture will contain the entire modules required to develop the application called E++. The architecture consist of four interfaces namely the User Interface, the Hardware Interface, the Software Interface and the Communication Interface.

V.I. User Interface

Application user interface is everything that the user can see and interact with. Android provides a variety of pre-built user interface components such as structured layout objects and user interface controls that allow you to build the graphical user interface for your app. Android also provides other user interface modules for special interfaces such as dialogs, notifications, and menus.

V.II. Customizing the Action Bar

By using the Action Bar in your Honeycomb-targeted apps, it will give your users a familiar way to interact with your application.

V.I.II. Horizontal View Swiping with ViewPager

This will provide user to swipe the pages .

V.I.III. Implementing Effective Navigation

This class shows you how to plan out the high-level screen hierarchy for your application and then choose appropriate forms of navigation to allow users to effectively and intuitively traverse your content.

V.I.IV. Designing for Multiple Screens

The android system powers a number of device types with several different screen sizes, ranging from small phones to large TV sets. This class shows you how to implement a user interface that's optimized for several screen configurations.

V.II. Hardware Interface

The android devices have multiple different types of hardware that are built in and accessible to developers. Sensors, such as a camera, accelerometer, magnetometer, pressure sensor, temperature sensor, and proximity sensor, are available on most devices. Various wireless connections such as Telephony, Bluetooth, and other connections are also accessible to the developer in some way.

V.III. Software Interface

The software interface design is the practice of conceiving and creating user interface designs for various types of software. The design can include the creation of mock ups of software applications that show the basic layout, information architecture and navigation of a software interface. Many people create software interface designs as part of a team of experts from different fields in a collaborative process.

V.IV. Communication Interface

V.IV.I. Sockets

The Socket interface is the most widely used so far. All major operating systems provide support for Sockets; the Internet and all the services it provides relies upon it. The popularity of BSD Sockets can be attributed to: Simple API, Robustness, Implicit buffering.

V.IV.II. MPI

In the High Performance Computing (HPC) arena, MPI is the dominant interface for inter-process communication. Designed for maximum scalability, MPI has a richer, but much more complicated API than Sockets. MPI provides point-to-point, collective, and one-sided operations. For point to-point communication, MPI provides a variety of modes including blocking and non-blocking.

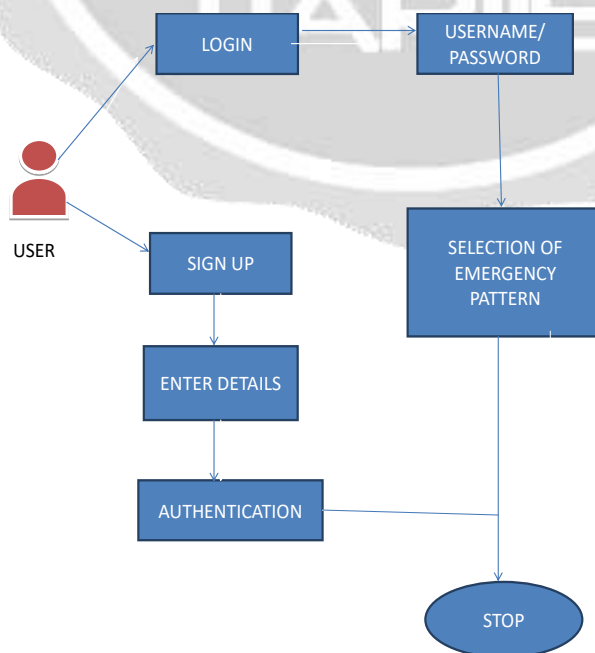


FIGURE 1: WORKFLOW OF APPLICATION

V.V. Description
V.V.I. Request by user

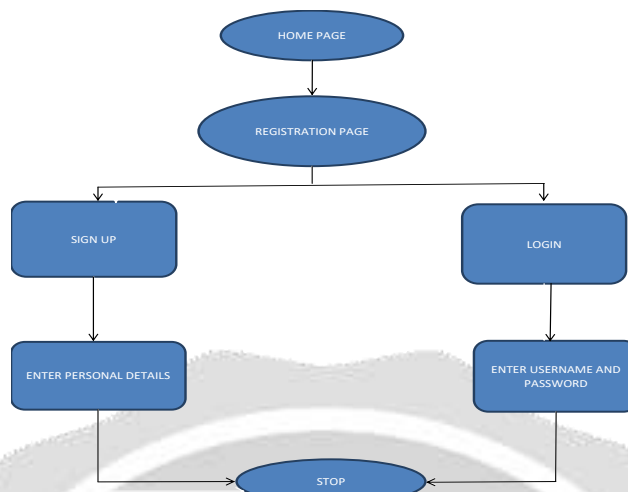


FIGURE 2:WORKFLOW OF REGISTRATION PAGE

In this step the user registers itself to the application by providing the necessary details like name, email id, etc. This step helps in creating the user account with option to sign in.

V.V.II. User authentication

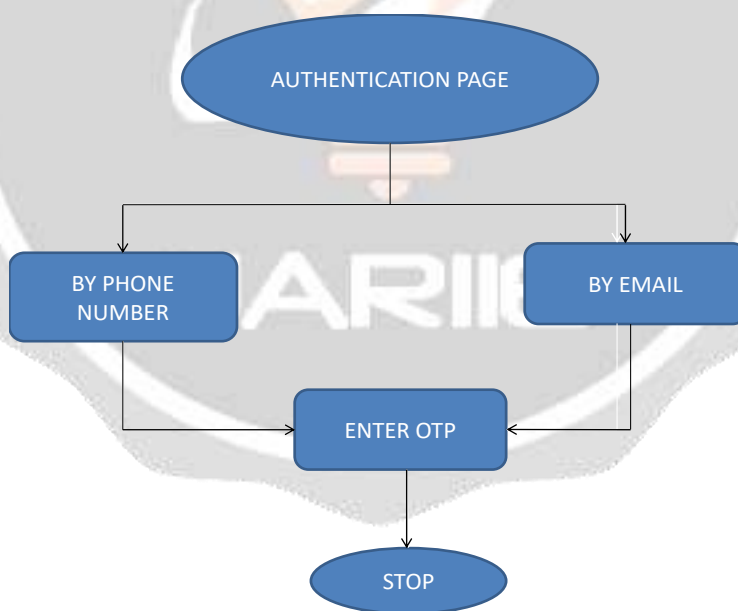


FIGURE 3:WORKFLOW OF AUTHENTICATION PAGE

In this step the information provided by the user is verified. Mainly the authentication of mobile number and email id by sending an One Time Password.

V.V.III. Selection of alert pattern

The user gets an option to select the pattern of getting the alert of an emergency call i.e., the can choose either red colour screen or fast vibration along with beep sound from the provided list.

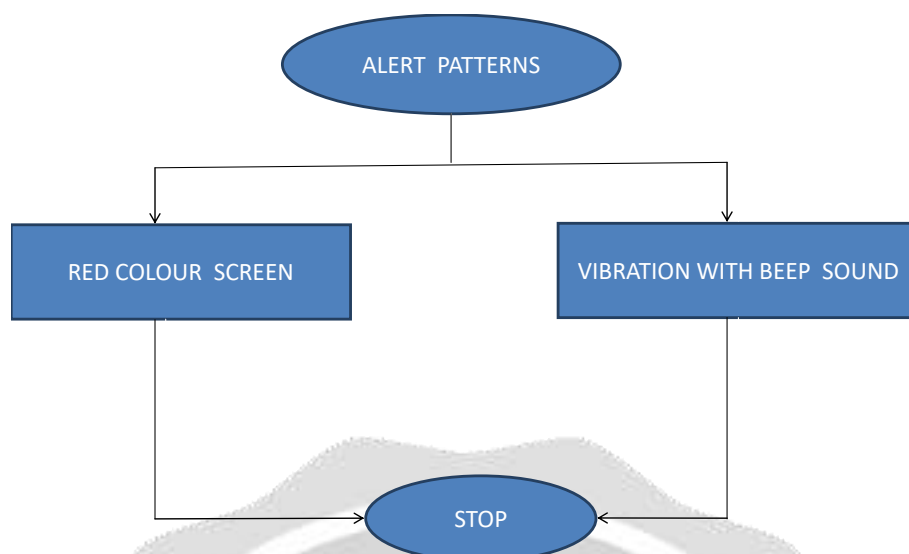


FIGURE 4: WORKFLOW OF ALERT PATTERN PAGE

V.V.IV. Acknowledgement to user

In this step the acknowledgement is sent to the user regarding the success or failure of the entire process, with an option to try again in case of failure.

V.VI. System Requirements

V.VI.I. Hardware Requirements

Hard disk: 20GB or more

RAM: 2GB or more

Processor: Qualcomm Snapdragon

V.VI.II. Software Requirements

Languages used: XML, HTML, Java

Operating System: Android 2.3(Gingerbread)

VI.CONCLUSION

This E++ Application for Android with Enhanced Functionality is immensely useful for the people who fall into the critical situation and trying to contact for help. Nowadays lots of unwanted crimes have been occurring, which can be avoided just by the immediate response by the receiver. This application will help in such kind of situations. This application is user-friendly and triggers in less time. This application is freely available for Android handsets. Thus it increases the importance of mobile phones by identifying the emergency call.

REFERENCES

- [1] Dhrubajyoti Gogoi, Rupam Kumar Sharma, "Android Based Emergency Alert Button", IJITEE, ISSN: 2278-3075, Volume-2, Issue4, March 2013.
- [2] L.Hariprasath, R.Dhivya, S.Adithya, "Emergency Alert System using Android", IJREAT International Journal of Research in Engineering & Advanced Technology, Volume 1, Issue 1, March, 2013.
- [3] Andrzej Podziewski, Kamil Litwiniuk, JarosławLegierski,"Emergency Button – a Telco 2.0 application in the e-health environment", 978-83-60810-48-4/\$25.00 c 2012 IEEE.
- [4] Mohammad Shirali-Shahreza, "Emergency SMS", 89-950038-5-5 98560/06/\$10 © 2006 ICASE.