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All-in-One Rescue/Women Safety App - RAKSHAK

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ALL-IN-ONE RESCUE/WOMEN SAFETY APP - RAKSHAK Dr. Siddhartha Choubey1,
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ABSTRACT

The Safety of women in this ever urbanizing country is a very critical issue, whose need to be addressed keeps increasing as time passes. This research describes an android app that is made specifically for the purpose of allowing it's user to call out in distress whenever they feel in danger. Our belief in making this application is to help reduce harm to women as much as possible and this is our contribution towards it. Whenever need arises this app is capable of being activated by a single command. The key features of this app are a scream alarm meant to deter/distract any harmful parties as well as an emergency button that sends the distressed user's location to their saved contacts via SMS as well as contacting the emergency services. Our system provides a cost effective and robust solution to problem detection and prevention. This is not only capable of preventing crimes against women but also potentially saving people who are victims of a natural disaster by notifying the emergency services. We want to make this app the best friend any person in distress can have. This app was made using Android Studio, Java, SQLite, Adobe XD.

KEY WORDS

**Android App, Emergency Alert System,
Emergency Services, Tracking System, Women
Safety.**

INTRODUCTION

It is a terrible shame that sexual assault, harassment and other forms of sexual violence have become an everyday occurrence for women and girls in public spaces, both in urban and rural

settings in every country around the world. A very grim picture is indeed painted for our future if we are incapable of eradicating this terrible evil from our societies.

An ever sadder reality is the fact that if proper steps are not taken, it is possible for this evil to stay and proliferate more even in a modern landscape as more women enter the corporate workspaces typically in urban settings which might require them to travel late at night as well as in general have

The best in humanity only comes when each part is working towards the same goal, but half the population being subjected to this terrible predicament only just causes an understandable yet unfortunate reluctance, hesitation and fear that they have to live with every single day. This app is our humble effort to help curb this problem via utilizing the Digital Revolution that has made it possible for most people in the world to have a smartphone in their hands.²

These smartphones can act as a wonder invention in our process of eradicating this evil.

Since most if not all women in a modern workspace have their own smartphone that they carry with them almost all the time. It gives them the power to Alarm, Alert and avert any dangerous situation they might find themselves into.³ It allows them to send a distress signal with their location to their emergency contacts using the app itself or by triggering predetermined gestures (e.g shaking the phone for more than 3 seconds).

Rakshak - Overview

The main objective of Rakshak is to help safeguard any person against potential dangers, especially of women. This app helps notify one's family members or any of your close friends that have been registered by you as an emergency contact that you are in danger and/or need immediate help, just by shaking your phone your emergency contact will get a message with your current location.

Your registered contact will get a link with a proper coordinates to get the exact location where exactly you are and if your phone gets switched off, even then it will show the last active location. The user just has to click a button or use a gesture toggle and a pre-written message with all the relevant info will be sent to their contacts. Along with this, they are capable of using a scream alarm to attract attention of any passerby as well as an emergency service alarm that they use to contact any emergency services such as police, fire department or an ambulance.

Proposed System (Methods, Modules and Procedures)

In this section, the key features of the App are listed below, which provides an overview of the system. The system is divided into modules for ease of understanding. These modules are:

Sign-in and maintain (Module 0)

- 1 This is for the first time users, they have to register to the app by entering the basic details of the user like Name, Phone no, Email Id, etc in the Signup Page.
- 2 An OTP (One Time Pin) will be sent to the user's email-account. The user will then have to enter the verification code in order to complete the registration process. Then, a message will be sent to the user's mobile number for completing the registration successfully. The user can now access the main features of the app.
3. Users will be able to manage their Emergency Contacts using the Add Emergency Contacts option.
4. For ease of access there is a guest mode that they can use without signing where their emergency contacts are only saved locally on their phone.

In Emergency Situations

Module 1: There is an Alarm Button. On pressing the alarm button, a shrill and loud noise will be activated which will get the attention of nearby people.

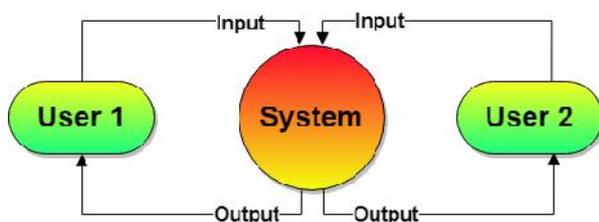
Module 2: There is an Emergency Call Button. On pressing that button an emergency number will be autodialed.

Module 3: There is a Panic Button. On pressing that button once, an alert message will be sent to the emergency contacts along with their current location. In case, the user does not have an internet connection then only alert messages will be sent.

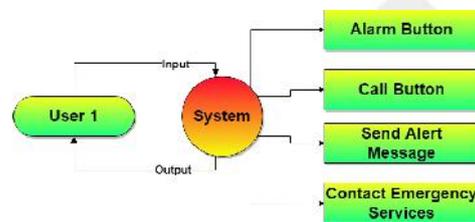
Module 4: There is an Emergency Service Button. On pressing that button, there will be two modes available, like offline mode and online mode.

If the user is offline it will use the GSM services to give the nearest emergency service locations otherwise it will use the GPS information if the user is online to provide the contact info of the nearest emergency services.

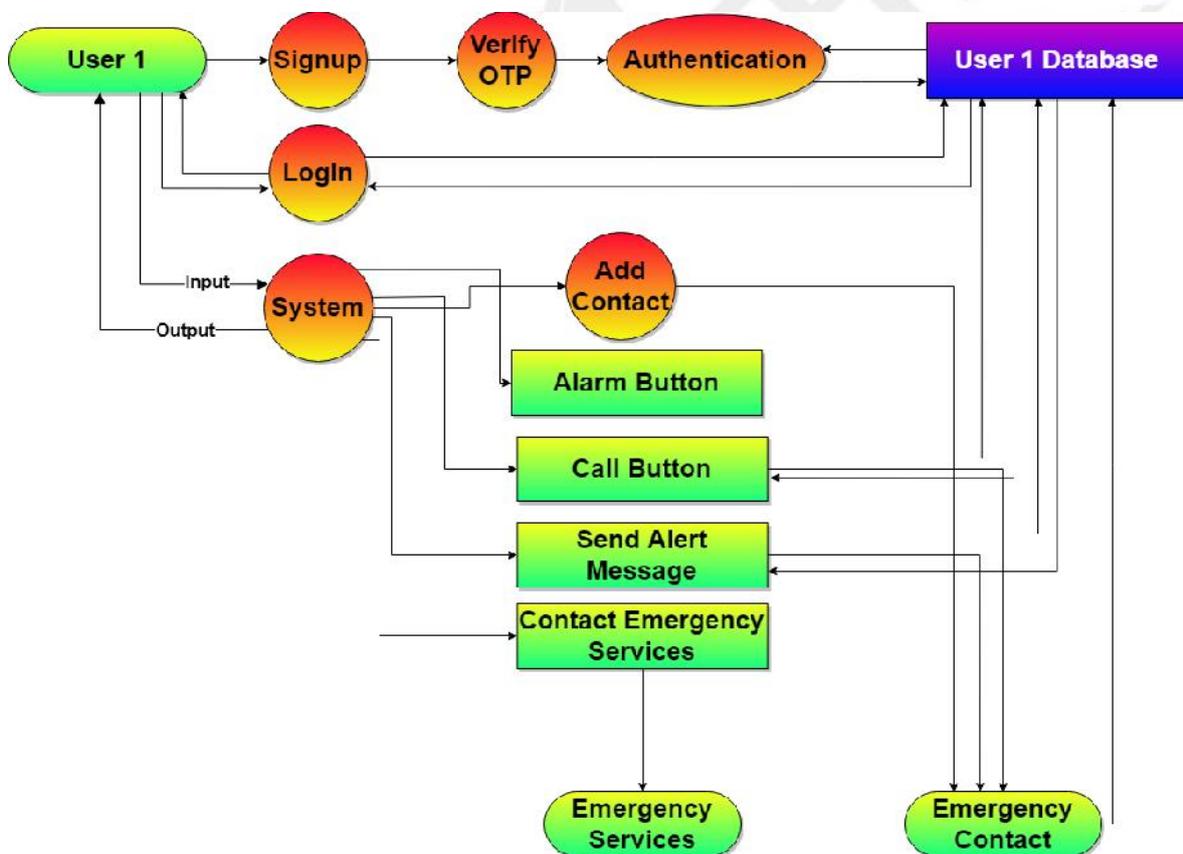
Data Flow Diagram Level 0 (Fig. 1)



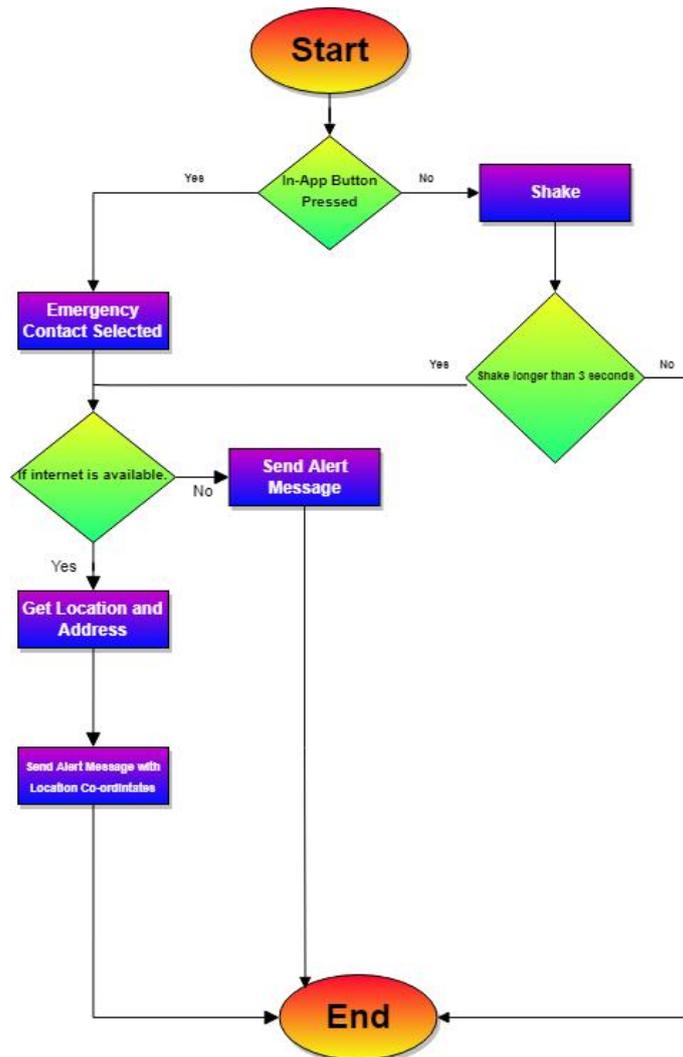
Data Flow Diagram Level 1 (Fig. 2)



Data Flow Diagram Level 2 (Fig. 3)



Flow Chart of Shake Function :Send Alert Message (Fig. 4)



System configuration: Processor: Pentium 4 CPU & above 1.80 GHz,

Operating System: Android 4.1(Jelly Bean) or above Memory RAM: 1GB & above, Hard Disk: 50 GB & above

Tools : Android Studio, Java, XML, SQLite , Adobe XD

User Interface



Splash Screen (Fig. 5)



User login page.(Fig. 6)



Add Contact Dialog Box(Fig. 7)



Main Menu(Fig. 8)

Future Scope

With further Research and Development, our aim is for this app to be seamlessly compatible with small wearable devices such as smartwatches, Fitness Trackers, e.t.c. A significant development goal for the team is to implement an Emergency warning system about certain events (missing/kidnapped persons, natural disasters, Radiation Leaks, Terrorist attacks, e.t.c) that sends a message to everyone who has installed the app (preferably everyone) in the affected region, analogous to the Amber Alert system in the U.S.A. Making Rakshak the only safety/rescue app you'll need for any situation.



Emergency Alert Popup(Fig.9)

CONCLUSION

Unfortunately even in this modern society the safety of women is in danger, Six percent of women report they have been subjected to sexual violence from someone other than their husband or partner⁴ and until law enforcement strengthens itself, The effort sadly will have to fall on the hands of the women themselves. So we are trying to contribute little effort of our own towards women safety. This mobile application is supposed to be helpful for everyone in dire need. In this application first the user will add five people called mediators. As the technology emerges, it is possible to upgrade the system and can be adaptable to the desired environment (wearable devices such as smartwatches, Fitness Trackers, e.t.c.). Because it is based on object oriented design and has a modular structure with every part working as independently as possible, any further changes can be easily added. Thus ensuring that our App provides a safe and secure environment for the women regardless of their location, and allows them to work late nights without any fear. This will not only work for crime prevention but for crime deterrence as well since any mal-doers will think twice before acting knowing that apps like these exist.

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