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RESEARCH ARTICLE

A novel approach for rescue through wireless emergency alert message

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ABSTRACT

This application can be used in any type of emergency to protect anyone using a double click. It sends an alert by way of an SMS, to the selected or trusted contact list. This application can also be used to trace the location of the user using Global Positioning System (GPS).Another advantage of the proposed system is to repeat the same process of message sending after 5mins to the saved contact.

Keywords: alert message, emergency, lost location, wireless, women care etc

INTRODUCTION

An emergency is a situation that creates an instant danger to health or life, during the time a need arise for urgent intervention to stop a dramatic situation [1].Emergency Alert is the system used by emergency services to send text messages to mobile phones to known individuals i.e. trusted contacts. The emergencies can be categorized as women care, accident, and health, lost location. Women safety is a growing concern across the world. At every stage of life, women and teenage girls are at risk and there is the possibility of gender-based violence. Emergency care is rarely available to them. The proposed system may be the solution to the women safety. A health emergency is a situation when unusual like illness to anyone. The health emergencies can be needed at times of: Fits, Loss of consciousness, Poisoning, Breathing difficulties. At the time of this type of difficulties the person can send alert emergency message to the trusted person's .This application should be helpful for the old people and sick people also. An accident is an unexpected or unintentional circumstance and has a negative outcome. Many accidents are happening around us every day. The proposed system gives a solution for this. At the time of the accident the victim can send the information to the family members or to the trusted contacts through the proposed system i.e. emergency alarm messages. By knowing the information the family members can come there and help to the victim or at least they can know the information about the accident or the situation. The lost location emergency may occur during camp activities who find themselves in an emergency situation in a remote area. By using the proposed system application the person can reach to their areas by alerting the trusted persons.

RELATED WORK

"**An android-based emergency alarm and healthcare management system**" [2]-The proposed system provides emergency help to people who are sick and responds by the doctor's prescription online. The proposed system also reminds user to take the medicine on time. The proposed system supports people who fall into the critical situation when they comes out of home or goes in unknown areas.

"**Child Safety & Tracking Management System By using GPS, Geo-Fencing & Android Application: An Analysis**" [3]- The authors proposed a system to locate the missing child through smart phones. In this system the children who are at risk can send SMS about their position and location to their parents. Parents can view their child location on goggle maps by using the GPS services.

"**Android Based Health Care System for Aged Diabetic Patients**" [4]- the authors proposed a system for aged Diabetic patients. The proposed system prevents the affliction of Diabetic patients by enabling them to self-manage their health.

"**Easy Tracker: An Android application for capturing mobility behavior**" [5]-The proposed system visualizes the route of the map to the mobile users. This system also protects the users by defining the sensitive areas.

"**Implementation of Children Tracking System on Android Mobile Terminals**" [6]-The proposed

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system focuses on very sensitive data. When the child cries the proposed system sends the text message to their parents by comparing the student data with the school data.

PROPOSED SYSTEM

- Attacks on women are at an all time high and even highly secured cities aren't safe anymore.
- At any such unfortunate time, you're smart phone can be your best friend and protector.
- If anything goes wrong (like accidents or any health issues or lost location), this app will be very useful by sending the information to the chosen people about the victim.
- This app tracks the location of the user and also sends a danger alarm saying that they are in danger in repeated intervals of time.
- Another innovation is like sending a message to parents and persons who you are trust.

ADVANTAGES

- When you are in immediate trouble or get separated from your friends during a night out and don't know how to get home, using this app on your phone, risk can be reduced.
- When old people and sick people are in trouble they inform their current position to the relatives by using this app easily.
- It also directs you to your destination and brings assistance when you need it.

TEST CASES

Test case1

1.	**Test case ID**	**Login**
2.	Precondition	• Enter name • Enter phone number • Enter password and confirm password
3.	Description	If phone number consists of 10 digits, password and confirm password matches, then the application settings Page has to be displayed.
4.	Test Steps	**1.** Enter name **2.** Enter phone number **3.** Enter Password and confirm password **4.** Click "Save" button
5.	Expected Output	Settings Page of the application has to be displayed.
6.	Actual Output	Settings Page of the application has to be displayed.
7.	Status	**Pass**

Testcase2

1.	**Test case ID**	**Vigilance status on/off**
2.	Precondition	• Status on • Status off
3.	Description	If the status is turned on/off it asks for a password showing a dialog box. If the password entered matches with the saved password then the background service gets activated else it fails.
4.	Test Steps	**1.** Turn status on/off **2.** Enter Password **3.** Click "OK" button
5.	Expected Output	Service will start and Notification will be displayed.
6.	Actual Output	Displays a notification saying "Give signal to send alert"
7.	Status	**Pass**

Testcase3

1.	**Test case ID**	**Clicking power button twice**
2.	**Precondition**	• Click the power button twice
3.	**Description**	Observe the time between the first and second click of the power button. Activate the location tracking service only if the time between the two clicks is less than 2 seconds else it doesn't activate.
4.	**Test Steps**	• Click the power button twice
5.	**Expected Output**	Service will start and Notification will be displayed.
6.	**Actual Output**	Displays a notification saying "Give signal to send alert"
7.	**Status**	**Pass**

Testcase4

1.	**Test case ID**	**Bluetooth signal recognition**
2.	**Precondition**	• Turning the Service on • Turning the bluetooth headset on
3.	**Description**	Whenever the bluetooth headset is turned on, the application recognizes the headset and if the name of the headset matches with the pre-saved name in database, Location service will be activated else it will not activate
4.	**Test Steps**	• Turn on the bluetooth headset
5.	**Expected Output**	Location service will start to send Alert messages
6.	**Actual Output**	Sends messages to the pre-configured phone numbers
7.	**Status**	**Pass**

RESULTS

Fig 1: Emergency Message app

Fig 2: Emergency alerts screen

Fig 3: Menu of services

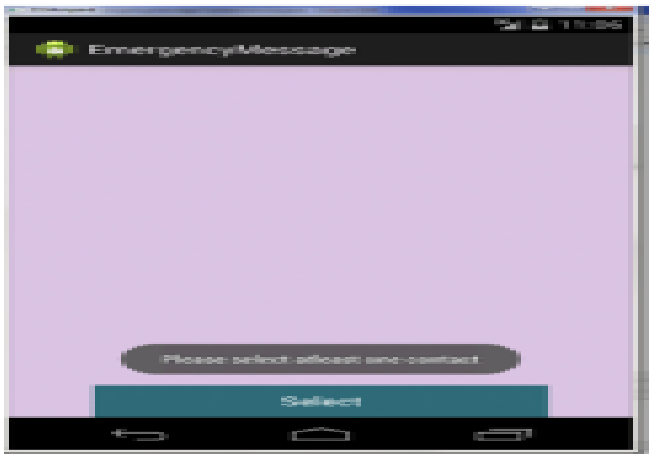

Fig 4: Sending the text message to the selected contact

CONCLUSION

This paper proposes an application that will empower women when they feel harassed and will assist in threatening situations. The proposed system supports the following:

1. User can enter registration table values at the time of installation and registration details can't be changed once registered.
2. Settings can be modified whenever required.
3. Can initiate the application by using either physical button (power button on the mobile) or external Bluetooth headset.
4. Can track the location and send SMS with or without using the GPRS facility.

It is the on-going real-time project. This Vigilance application is useful to provide security to the people in lonely and dangerous situations. The Future scope of this project is empowering the services of Emergency application by implementing the server to maintain the data of the registered users and alerts. This application can be extended to smart watches, so that no need to maintain the phone to do any action. Simply by wearing the accessories we can defend ourselves.

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