Published by :
http://www.ijert.org

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 11 Issue 02, February-2022

Hifazat: An Android based Solution for Human Safety

Muhammad Nadeem[1], Maimoona Niazi[2], Syed Muhammad Ahsan[3], Haneen Jamal[4]
[1]Assistant Professor, Department of Computer Science & IT, Sir Syed University of Engineering & Technology, Karachi, Pakistan
[2, 3, 4] Department of Computer Science & IT, Sir Syed University of Engineering & Technology, Karachi, Pakistan

***Abstract*:- In today's era, smartphones with tremendous features are used by every person. Almost every person in Pakistan uses smartphones with different applications such as Careem, Uber to travel from one place to another for work or any other household chores and hence, they are used for security and insurance purposes. There are many unfortunate incidents, happened all over the world that outraged the whole world which resulted in a new application being developed to provide a security system. This paper presents the human safety application i.e. HSafety App which provides a platform to send emergency notification to the nearest users or registered contacts with live location through GPS.**

Keywords: Human, Human Safety, Women Safety, Harassment.

1. INTRODUCTION

In this fast moving world, safety is a basic issue in every country. There are many heinous incidents happened with children, boys, young girls, and woman and still happening all over the world with the increasing crime rates day by day especially harassment, molestation, eve teasing, rape, kidnapping and domestic violence. [1] There are some of the grim and relentless rape cases like a six year old Zainab murder and rape case which sparked outrage in Pakistan. These heinous incidents that outraged the entire nation have wakened us to go for the electrical safety issues and so a host of new apps have been developed to provide security systems to people via their phones. [2]

The rapid growth of smartphones has led to a renaissance for mobile services. Go-anywhere applications support a wide array of social, financial, and enterprise services for any user with a cellular data plan. [5] Numerous precautionary measures have been taken by the public authority to shut down hilarious mischief exercises yet at the same time has not impacted the development pace of these violations and has stayed unaffected. Due to these reasons, it was necessary to build such an application which may help out every human being who is in trouble. Hence we propose an Android application which includes several features such as Real Time GPS tracking, reporting ongoing crimes, accessing nearby resources. When any person experiences any misbehaving movement, the user can shake his/her mobile which sends a message to the emergency contact numbers with accurate location coordinates. Toll free numbers are given to call various numbers [1] and nearby safe resources feature is also provided to access petrol pumps or hospitals at a new place. False alarm message can be sent to the emergency contacts if any person mistakenly shakes his/her mobile.

2. CURRENT SYSTEM

There are many applications used for safety purposes. The main purpose of these applications is to send the alert messages to the saved contacts in which some of them also have a GPS tracking system to track the person. Here are some applications which are currently available.

2.1 UrSafe: UrSafe is committed to protecting your personal safety as well as the safety and security of your friends and family who have come together to build and promote next generation services and solutions that protect your personal safety and security – as well as your loved ones - to make a difference in this world [7]

2.2 Safety App for Silent Beacon: With the Silent Beacon Safety App you can alert emergency personnel or loved-ones and allow them to find your location when faced with an emergency situation. Alert, track, call and notify loved-ones or emergency services including 911 in emergency situations. [8]

2.3 My SOS Family: Incredibly Fast, Easy-to-use Alert App. You, your Family or Staff will never feel alone. Connected to your emergency support network anytime, anywhere. [9]

2.4 So Secure: So Secure now includes Location Sharing! Privately share location with family and friends, get alerts when they arrive and leave spots you frequent like home, school, or work. Make check-ins easier and have peace of mind knowing you're all safe. [10]

3. PROPOSED SYSTEM

The proposed system is implemented with the help of Android application. [3] The application requires a registration with a phone number, name, email address and password along with three emergency contacts. The application will send help messages to the emergency

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 11 Issue 02, February-2022

contacts of friends/family members saved by the user by shaking the mobile phone. Also shares the live location of a user via SMS if any trouble arises. This developed system will also show nearby resources like hospitals, petrol pumps, resturants, if need arises to locate these resources at a new place. This application will also propose a get help feature by just pressing the Get Help button to call an ambulance or police station to report any ongoing crime. It also has a false alarm feature where a user can be notified of false alert message .The user can update and maintain his/her profile and can add picture to it. The system is taken from the existing systems and modified to suit the needs of the proposed application. [1]

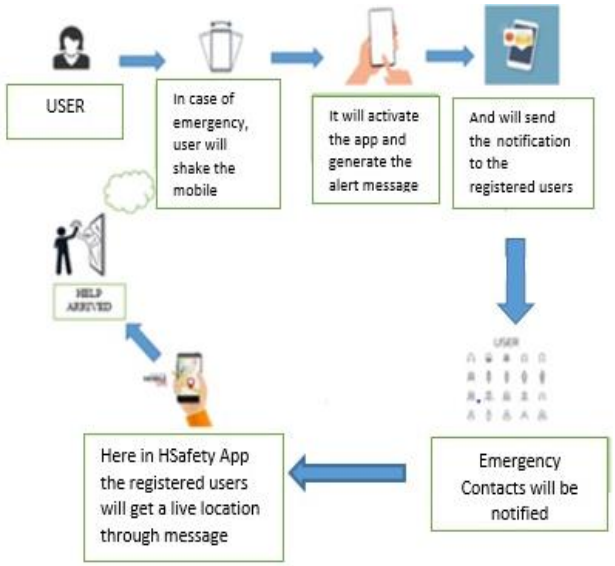

Figure 1: Architecture Design of the Human Safety App

The system will be implemented in two modules of application.

Sender Module (User1)

1. Here User1 app has to be installed in the mobile
2. Then User1 should enroll his/her phone number, Name, Email address and password to sign up
3. Click on Signup button
4. It will ask for a 6 digit verification code which would be received by a user through SMS.
5. Then it will display signed up successfully.
6. Then User1 has to add three emergency contact numbers
7. In case of any emergency, the user will shake the mobile after activating the shake button which will send a message to User2 with its location.

Receiver Module (User2)

1. Here User2 app has to be installed in the mobile
2. Then User2 should enroll his/her Phone number, Name, Email address and password to sign up
3. Click on Signup button
4. It will ask for a 6 digit verification code which would be received by a user through SMS.
5. Then it will display signed up successfully.
6. Then User1 has to add three emergency contact numbers
7. User2 will receive a live location's coordinates sent by User1 (Sender).

4. USE CASE MODEL

Figure 2: Use Case Model

A. The use case model consist of three modules

- User app which will be installed in a user mobile and initiated by giving mobile number, name, email address with three emergency contact numbers to alert them with emergency notification. User can report crime and find nearby resources if need arises and so by just touching the application from the mobile screen the options will appear and by choosing the particular options the appropriate function will take place [6]

- Friends/Family Member (User2) module which will be installed in a user mobile and initiated by providing the same information as for user app and where user2 will receive emergency messages with live location coordinates.

- New User will register himself to use all the features of this app

5. COMPARATIVE ANALYSIS

This analysis shows that application has three unique features as compare to other existing application as shown in (Table No.1)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 11 Issue 02, February-2022

Table No.1. Comparative Analysis

FEATURES	URSAFE	SAFETY APP FOR SILENT BEACON	MY SOS FAMILY	SO SECURE	HSAFETY APP
GPS TRACKING	✓	✓	✓	✓	✓
ALERT MESSAGE	✓	✓	✓	✓	✓
SUGGESTS NEARBY SAFE PLACES	✓	✓	✗	✗	✓
SHAKE TO ALERT EMERGENCY CONTACTS	✗	✗	✗	✗	✓
REPORT ANY INCIDENT/CRIME (CALL FOR HELP)	✗	✗	✗	✗	✓
FALSE ALERT NOTIFICATION	✗	✗	✗	✗	✓

6. RESULT

By comparing with other existing systems, our system gives more accurate security and provides more unique features for the users. Some of the snapshots are given below.

- **Sign Up Screen**

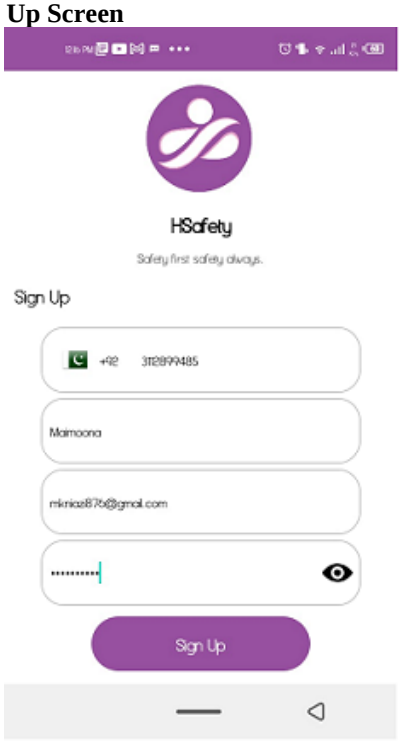

Figure 3: Sign Up Screen

- **Emergency Contacts Screen**

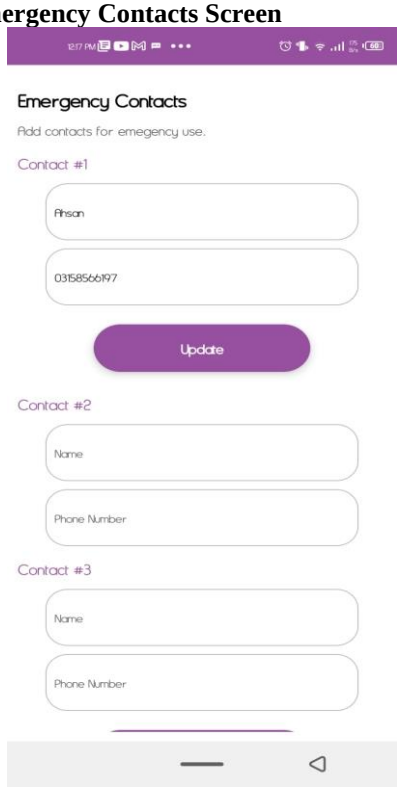

Figure 4: Emergency Contact Screen

- **Home Screen**

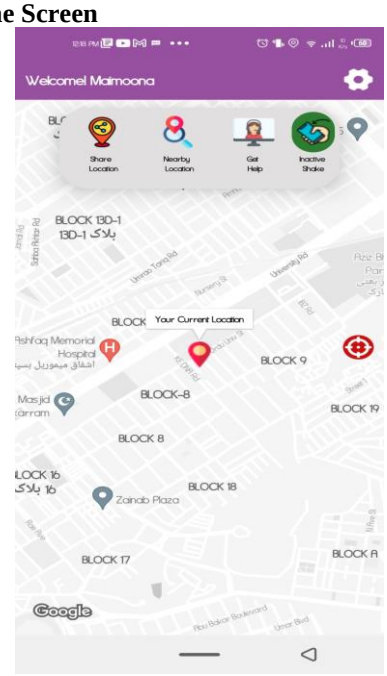

Figure 5: Home Screen

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 11 Issue 02, February-2022

- **Alert Message**

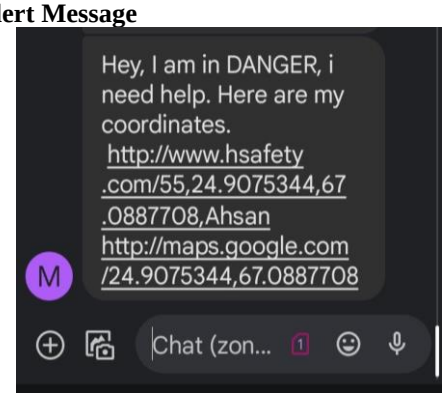

Figure 6: Alert Message

- **Get Help Screens**

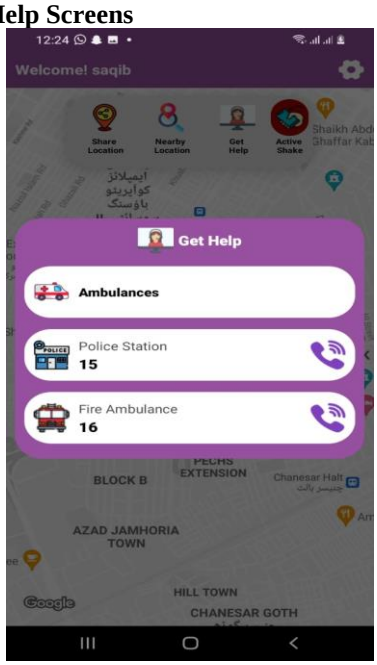

Figure 7: Help Screen 1

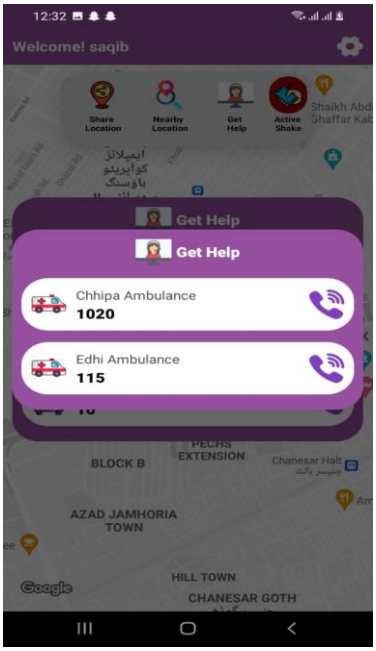

Figure 8: Help Screen 2

- **Nearby Location Screen**

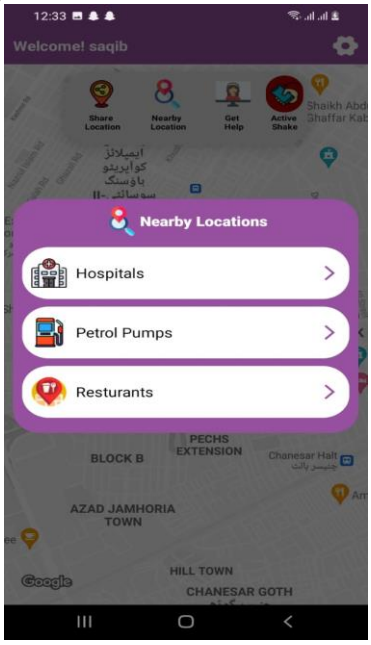

Figure 9: Nearby Location

- **False Alarm Screens**

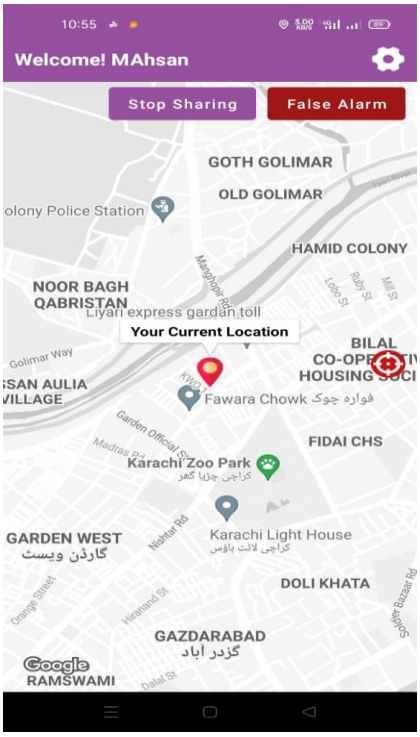

Figure 10: False Alarm 1

Figure 11: False Alarm 2

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 11 Issue 02, February-2022

7. SCOPE

With this application we will be able to help in providing safety to almost everyone. It will help in lowering the crime rate and thus it will ensure a safer environment. With this application, people will be able to get help, help someone and thus it would build a community of people that would help each other when it comes to providing safety or reporting a crime. The application will also suggest nearby safe places or resources that can be utilized when someone is in a hurry or stuck somewhere. The intention of this application is to provide you with the fastest and simplest way to contact your nearest help and build a community of people that would help each other in these conditions.

8. CONCLUSION

This is a "Human Safety Android Application" which helps every human being who is in trouble. It sends help messages to the emergency contact numbers to alert friends/family members. It also helps to suggest nearby safe places or resources and provides fastest help from security departments when need arises. This is a user-friendly application that can be accessed by anyone who has installed it in their smartphones. Our intention is to provide you with the fastest and simplest way to contact your nearest help. [4]

REFERENCES

[1] D. Prashanth, G. Patel, Dr. B.Bharathi," Research and development of a mobile based women safety application with real-time database and data-stream network,"*2017 International Conference Power And Computing Technologies [ICCPCT]*. Available :(https://ieeexplore.ieee.org/document/8074261). [Accessed November 24, 2021]

[2] Z. Ashish, S. Vishakha, A. Sanika, Y. A. Makandar, "Electrical Safety Android Application-MAHARAKSHA," vol 8,no 4,October, 2021. Available :(https://www.researchgate.net/publication/355369600_ELECTRICAL_SAFETY_ANDROID_APPLICATION_MAHASURAKSHA). [Accessed November 29, 2021]

[3] Prof. S. Mehta, S. Janawade, V. Kittur, S. Munnole, S. Basannavar," An Android Based Application for Women Security," *International Journal of Engineering Science and Computing, June 2017*,vol 7, no 6. Available :(https://ijesc.org/upload/4c1bdc0297527339c6423e7045879c94.An%20Android%20Based%20Application%20for%20Women%20Security.pdf). [Accessed November 24, 2021]

[4] "Android Women Safety App Project," *Nevon Projects.* Available :(https://nevonprojects.com/android-women-safety-app/). [Accessed December 6, 2021]

[5] W. Enck, D. Octeau, P. McDaniel, S. Chaudhuri, "A Study of Android Application Security," Available :(https://www.usenix.org/legacy/events/sec11/tech/full_papers/Enck.pdf). [Accessed November 25, 2021)

[6] Dr. S. Mandapati1, S. Pamidi, S. Ambati," A Mobile Based Women Safety Application (I Safe Apps)," *IOSR Journal of Computer Engineering (IOSR-JCE)*, Vol 17, No 1, Ver. I (Jan – Feb. 2015). Available :(Volume 17, Issue 1, Ver. I (Jan – Feb. 2015). [Accessed November 25, 2021]

[7] App Store.2021. UrSafe [online] Available at :< https://play.google.com/store/apps/details?id=com.ursafe&hl=en&gl=US>. [Accessed November 20, 2021]

[8] App Store.2021.Safety App for Silent Beacon. [Online] Available at :< https://silentbeacon.com/>. [Accessed November 20, 2021]

[9] App Store.2021. My SOS Family [online] Available at :< https://play.google.com/store/apps/details?id=com.mysosfamily&hl=en&gl=US>. [Accessed November 20, 2021]

[10] App Store. 2021. So Secure [online] Available at :< https://play.google.com/store/apps/details?id=com.adt.sosecure.android>. [Accessed November 20, 2021]