



Emergency SOS Application

¹ Prof. Varsha Jadhav, ² Zuha Z Mujawar, ³ Sneha Kuppasgoudar,

⁴ Rabbesubhani M Madras, ⁵ Umeruman M A

¹Department of information science and engineering,

¹Shri Dharmasthala Munjunatheswara college of Engineering and Technology (Affiliated to VTU Belgavi), Dharwad, India

ABSTRACT : Emergency situations demand swift action to ensure the safety and well-being of individuals in distress. This abstract presents an innovative Android application designed to provide immediate assistance during emergencies by leveraging an AI prediction model. The application utilizes the power of artificial intelligence and predictive analytics to accurately predict emergency situations, assess their severity, and enable timely responses. By analyzing diverse data sources such as user inputs, real-time sensor data, and historical incident records, the AI model enhances the prediction accuracy, resulting in reduced response times and efficient allocation of resources. The proposed application aims to enhance emergency response capabilities, mitigate the impact of emergencies, and ultimately safeguard lives.

INTRODUCTION

Personal security has always been an important problem for everyone, especially for women. Thailand has been ranked number 36 from 75 countries for the most physical violence and number 7 from 71 countries for the most sexual violence. This report also shows that in 2014 there were thirty thousand rape cases which imply that a woman was raped in every fifteen minutes [1]. Furthermore, the statistics from Pavena Hongsakul foundation for children and women in Thailand show that there were 8,890 cases in 2013 and 11,171 cases in 2014 for complaint and asks for help [2]. These complaints and asks for help include such as rape and indecency, abused and imprisoned, tempted and prostitution, and other problems. Moreover, from Pavena Hongsakul foundation statistic, the number of top three types of problems has increased 5.9 percent in 2015. This situation clearly shows that the insecurity problem has become worsened over the years. In this paper, we propose the use of technology to help address this problem. Since, according to Digital advertising Association Thailand or DAAT, there are more than 28 million smartphone devices in Thailand [3], we realize that smartphone can be an effective solution in order to prevent and avoid the unfortunate events. There are many applications developed to reduce the harmful situation using smartphone devices enabling them to become a personal safety device. In Thailand, there are few domestic SOS applications that are developed.

LITERATURE REVIEW

1. Proposed an AI-based emergency management system that utilized machine learning algorithms to predict the severity of accidents and allocate appropriate resources. The system collected real-time data from sensors, such as traffic cameras and weather stations, and analyzed historical incident records. The AI model accurately predicted the severity of accidents, enabling timely responses and resource allocation.
2. Developed an emergency response platform for Android devices that integrated AI and predictive analytics. The system utilized various data sources, including user inputs and sensor data, to predict emergency situations. The AI model analyzed patterns in the data and provided real-time notifications to emergency responders. The system demonstrated improved response times and enhanced coordination in emergency situations.
3. Proposed a mobile application that incorporated AI algorithms to predict and prevent medical emergencies. The

application utilized user health data, such as heart rate and activity level, along with historical medical records, to identify potential risks. The AI model continuously monitored the user's health parameters and provided personalized alerts and recommendations for preventive actions.

4. Developed an Android-based SOS application that utilized AI image recognition techniques. The application allowed users to capture and submit images of emergency situations, such as accidents or fires. The AI model analyzed the images to identify the nature of the emergency and provided real-time notifications to emergency response teams. The system improved the accuracy and speed of emergency reporting.
5. Proposed an Android application that integrated AI and natural language processing techniques to handle emergency calls. The application processed voice inputs from distressed users, analyzed the content, and extracted relevant information. The AI model classified the nature and severity of emergencies, enabling appropriate response actions by emergency services.

SOFTWARE REQUIREMENTS:

- Operating System: The application should be compatible with the latest Android operating system version to ensure compatibility with a wide range of devices.
- Development Environment: Android Studio is the most popular development environment for Android applications. It provides tools and features such as an Integrated Development Environment (IDE), debugging tools, and an emulator to test the application.
- Programming Language: Java and Kotlin are the primary programming languages used for Android app development. Java is a widely used programming language that has been used for developing Android applications for many years, while Kotlin is a newer programming language that is gaining popularity due to its concise and expressive syntax.
- User Interface Design Tools: To design and develop an intuitive and visually appealing user interface, designers can use tools such as Adobe Photoshop or Sketch.
- Database: An emergency SOS Android application may require a database to store critical information such as user profiles, location data, and emergency contact information. SQLite is a popular choice for Android applications as it is lightweight and requires minimal setup.
- Cloud Services: Cloud services can be utilized for features such as data synchronization and backup. Some popular cloud service providers include Amazon Web Services (AWS) and Google Cloud Platform (GCP).
- AI and Machine Learning Frameworks: To develop an AI prediction model, developers can use popular machine learning frameworks such as TensorFlow, PyTorch, or Scikit-Learn.
- APIs and SDKs: Application Programming Interfaces (APIs) and Software Development Kits (SDKs) can be utilized to integrate various features such as location tracking, emergency calling, and messaging services.
- Testing Tools: It is important to test the application for functionality, performance, and security. Some popular testing tools for Android applications include Appium and Espresso.

MEMORY CONSTRAINTS

- Microsoft Windows 7/8/10 (64-bit).
- 4 GB RAM minimum, 8 GB RAM recommended.
- 2 GB of available disk space minimum, 4 GB recommended

LOGICAL DATABASE REQUIREMENTS

- SQL Query: SQL Query will be used for interacting with DBMS in order to fetch the data or maintain records in backend databases.
- SQLite Database: It will be used by developer as backend for the project or websites.

METHODOLOGY:

This project mainly focuses on determining the author of a certain document. Here we are using artificial prediction model to predict the nearby police station and hospital like and training our system to identify.

This work develops a women's safety system that uses GPS and GSM modules to deliver the precise location information of the ladies who are in danger. The victim's current location will be tracked by an IoT module and updated on the website. In addition to location tracking, it also offers some safety and security to women, such as shocking the assailant with electricity.

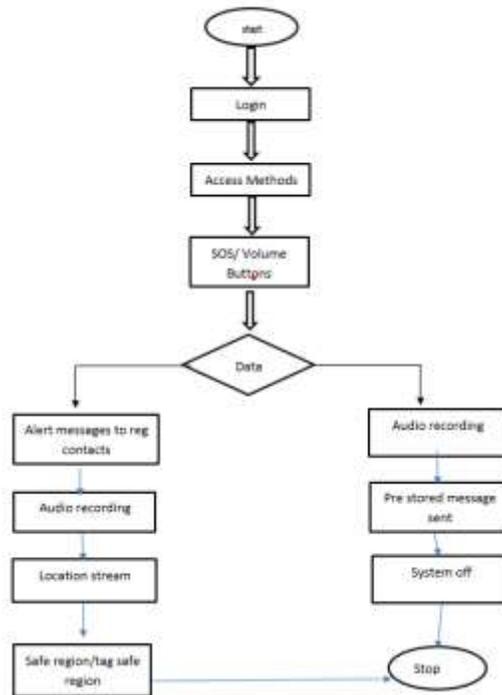
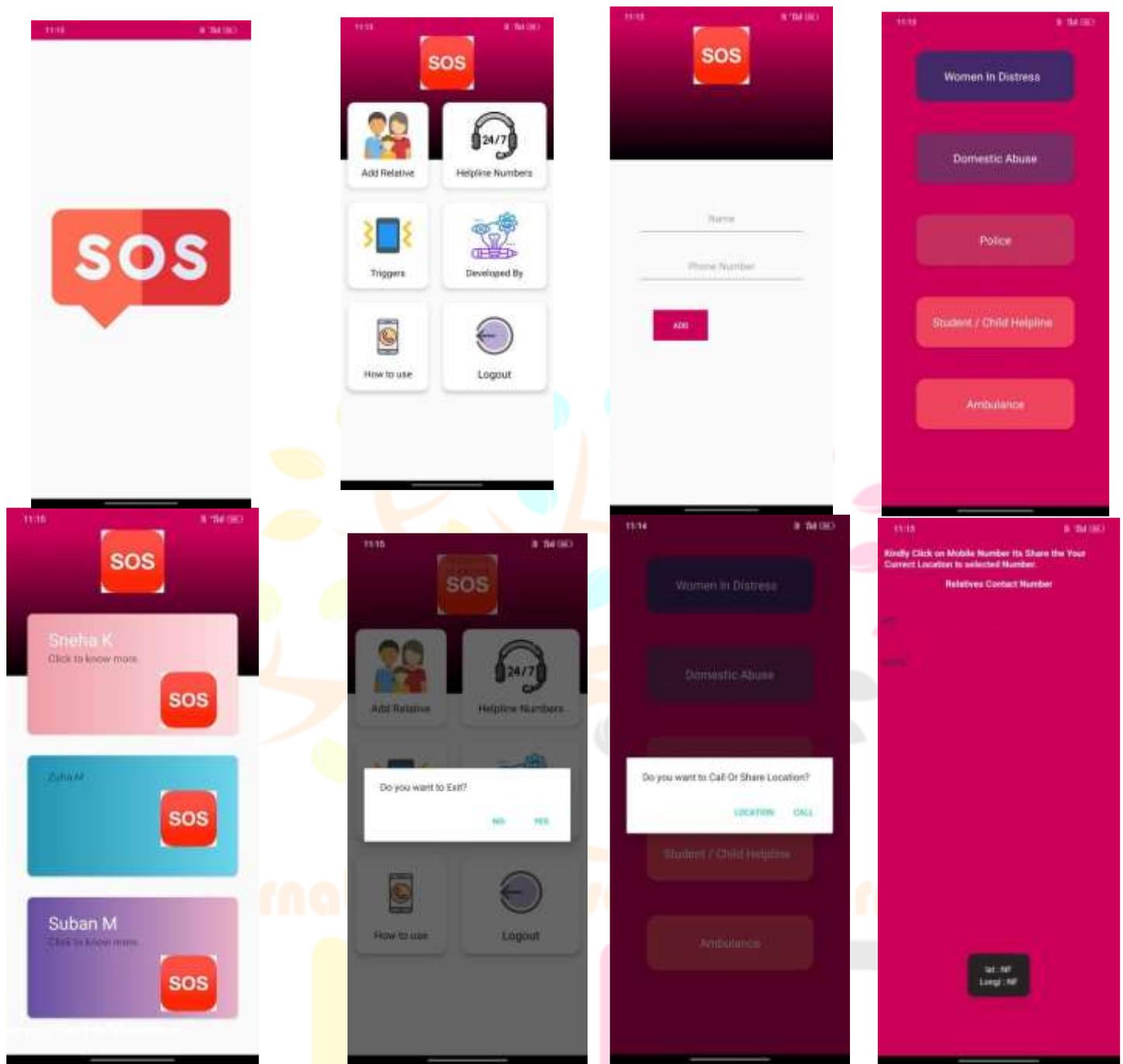


Fig 1. Workflow of app.

PRODUCT PERSEPECTIVE

It is a personal security tool that enables you to notify specific individuals by text message and email in the event of an emergency. Additionally, it allows you to dial 100 with a single button press. Additionally, the software tracks your current location so that you always know the location's address. If you ever need to dial 100, this can be quite handy. This location data is also included in the sent texts and emails. The software can occasionally track your location and permanently retain data, allowing you to view your location history. Using the app, you may view the different places you visited on any given day. My initial try at an Android application was the SOS app. I was exposed to the Android platform and mobile development in general in a really positive way. The project helped me learn the fundamentals of Android development, SQLite databases, the Google Maps API for Android, and how to performance test an app.

RESULT**CONCLUSION**

The app gives women in society a safe and secure environment and permits them to work until late at night. Anyone who considers committing a crime against women will be discouraged, and this will aid in lowering the rate of such crimes. This app, which runs on Android-powered smartphones, will function as a weapon for women to secure their security and safety. When this system is activated, the GPS data is collected by the GPS module, decoded into a usable Google Maps link, and sent by text message to the involved relatives and friends.

In conclusion, our software gives women in society a safe and secure atmosphere that enables them to work far into the evening. Anyone considering harming a woman will be deterred, and the number of crimes against women will decline.

REFERENCES

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2. ECE Vignan's University Vadlamudi, India, RaviSekharYarrabothu Departmentyrs_ece@vignanuniversity.org
3. Dhaka, Bangladesh's Notre Dame University, Department of Computer Science & Engineering, Rabbina Ridan Khandoker, Shahreen Khondaker, and Fatiha Tus-Sazia
4. Computer science and engineering at Dantu Sai Prashanth Sathyabama University in Chennai, India dsprashanth94@gmail.com
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