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A SAFETY AND SECURITY ANDROID BASED APPLICATION FOR WOMEN

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Abstract: ***To provide people with quick support in an emergency condition, a safety system called Voice Enabled Active Helpline with Safe Zone Detection is been developed. Instead of requiring manual input, users can request help by speaking into the system's voice recognition technology. The system incorporates a safe zone detection feature. This feature recognizes whether the user is in a location that has been designated as a safe zone, like a police station or hospital. This function notifies the appropriate authorities that immediate assistance is needed. The system will offer emergency response choices, such as phoning the police, sending an SOS message to emergency contacts, or offering emergency instructions. if the user is not in a safe zone. The voice-enabled active helpline is intended to be user-friendly and available to everyone, particularly for people who might find it challenging to use conventional emergency response systems. Additionally, the device features real- time tracking, which enables first responders to find the user quickly and help. Finally, the "Voice Enabled Active Helpline with Safe Zone Detection" provides a state-of-the-art method for individuals to request assistance in an emergency while enhancing safety and peace of mind.***

Keywords*: state-of-the-art,Voice Enabled Active Helpline.*

1 INTRODUCTION

In today's culture, people's safety and well being are the highest priority. Anytime an emergency arises, it is essential to have a accessible system in place to offer fast assistance. This requirement is addressed by the "Voice Enabled Active Helpline with Safe Zone Detection," which offers a convenient and creative way for people to get assistance in urgent situations. This system makes use of the most recent developments in voice recognition technology. It incorporates a safe zone detection capability, enabling users to request assistance with a straightforward voice command. The technology offers real-time tracking and emergency response choices in the event that the user is not in a safe area, enabling emergency services to quickly locate and assist them. An essential step forward in improving personal safety and peace of mind is this voice-enabled active helpline. It provides a comprehensive solution for emergency response and ensures that help is always accessible thanks to its accessibility and user-friendly design. The "Speech Enabled Active Helpline with Safe Zone Detection" is a full-service emergency response system that combines safe zone detection with the most recent developments in voice recognition technology.

Without the need for manual inputs, voice recognition technology enables people to request assistance with a straightforward spoken command. People who might find it challenging to use conventional emergency response systems can particularly benefit from this feature. The device also includes a safe zone recognition tool that recognizes automatically if the user is in a designated safe area, like a police station or hospital, and alerts the appropriate authorities for urgent aid. The system offers a variety of emergency response choices in case the user is not in a safe area. These include calling the police, sending an SOS message to emergency contacts, or

offering emergency guidance. Because of the system's tracking feature, emergency personnel may quickly find the user and provide assistance. This function is essential for ensuring that assistance arrives as soon as possible, increasing the likelihood of a successful outcome in urgent situations. Overall, the "Voice Enabled Active Helpline with Safe Zone Detection" offers a complete emergency response solution that is easily accessible, approachable, and trustworthy. It promotes safety and well-being for people by ensuring that help is always accessible and offering peace of mind thanks to its cutting-edge features.

2 LITERATURE SURVEY

[1] A safety and security Android app for women called "Go Fearless" An Android safety application for women has been attempted to design in this research study. Three tasks make up the majority of this programme. We have a user with a smartphone that has GPS enabled, allowing us to retrieve the user's current location. If the setting is turned on, the following module will press the panic button. Sending the location and contents to the saved contacts would be the third and last task.

[2]A Women's Safety Solution Women today experience a lot of sexual harassment, which is alarmingly increasing daily thanks to smart bands and the CWS app. An IoT device and an Android app in this project to make women's movement safer. By pressing the emergency switch on the apparatus, women can receive immediate and exceptional safety support. In the event of an issue, the user's location can be tracked in real-time by the gadget and sent to the volunteer police station nearby. By using this device, the user can also find the position of the closest safe zone. Furthermore, this device works both online and offline. The user can still utilize the gadget to access the closest police station and volunteer assistance if there is no internet connection. The gadget has an Arduino Nano, GPS, GSM, Bluetooth, and other components. This device is both inexpensive and simple to use thanks to the sum of all these components.

[3] Kundan Shingade, Sagar Pawar, Vipul Jadhav, and Krunal Kadam are IOT-based women's safety jacket developers. The jacket is a garment with hidden electric conducting nodes that, when fully charged, deliver an electric shock of about 2400V and a current of 5–6 milliamperes. Every time the jacket is touched, the shock circuit, which is powered by a 4V lead acid battery, shocks the attacker. The interior of the jacket is adequately insulated to reduce bodily shock in the wearer. When the emergency switch is depressed, the emergency bell on the jacket is also activated, and the GPS-GSM module additionally uses a Google maps link to convey the user's current location to family members. The jacket contains two easily accessible switches to turn on the shock circuit and one for the GPS and GSM module as a safety precaution.

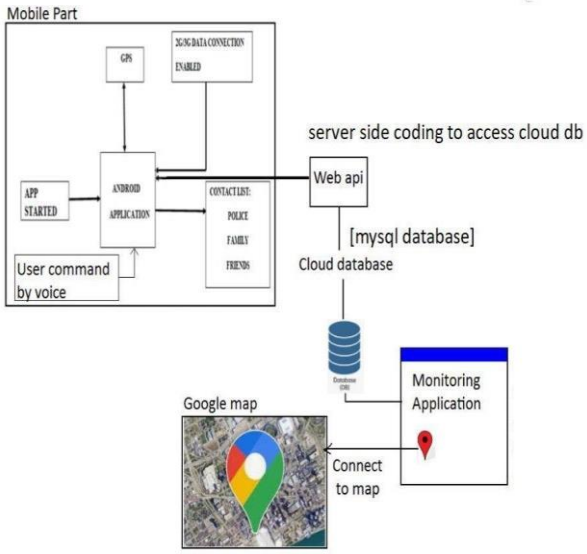
[4] H. Li, Y. Li, and Y. Liu, "Voice-enabled emergency response system based on Internet of Things," proposed a voice-activated emergency response system that leverages IoT devices to provide quick and efficient emergency response services. The system is triggered by voice commands, which are then transmitted to the emergency response center for further action. The focus of the paper is on the technical aspects of the system, including the design of the voice recognition algorithms and the integration of IoT devices into the system. The authors also discussed the potential benefits and challenges of implementing a voice-enabled emergency response system based on IoT technology.

[5] J. Kim, S. Lee, and K. Kim, "A voice-based emergency response system using cloud computing,"An emergency response system that can be activated using speech commands is presented.The system outlined in the paper was created as a voice-activated solution that would allow users to report incidents and make assistance request quickly and efficiently without the need for manual input. concentrates on the technical features of the system and its design, including the cloud- based system's architecture and components as well as the voice recognition algorithms used to triggerthe emergency response.

[6]. A. Al-Rawashdeh, J. R. Al-Wabil, and S. J. Al-Qudah, presents Voice commands and mobile devices to deliver emergency response services. makes use of the capabilities of mobile devices to deliver prompt and effective emergency response services. Voice instructions can activate the mechanism described in the article, which then sends the commands to the emergency response center for further action. The design and execution of the voice-enabled emergency response system, as well as the technological difficulties and constraints, are the primary topics of this study.

[7] Y. Zhang, Y. Lu, and X. Guo, "A voice-enabled emergency response system for the elderly," Provides a suggested system for voice commands to deliver emergency response services specifically for elderly people.Voice instructions can trigger the mechanism described in the article, which then sends the commands to the emergency response center for further action. The paper's main topic is the creation and use of a voice-activated emergency response system for seniors, as well as the difficulties and restrictions posed by the application of voice recognition technology in such a system. The possible advantages and effects of such a system on emergency response services for the senior population were also covered by the authors.

[8]R. Jain, R. K. Tiwari, and A. D. Arora, "Safe zone detection for voice-enabled active helpline using GPS," proposed system for providing emergency response



services via voice commands with a focus on applying GPS technology to determine the user's location in order to provide more precise and effective emergency response services. The design and execution of the voice-enabled emergency response system, as well as the technical difficulties and constraints of utilizing GPS technology in such a system, are the primary topics of this article. The possible advantages and effects of such a system on emergency response services were also covered by the authors, particularly when GPS

3.SYSTEM ARCHITECTURE

Fig1 shows the Helpline System Architecture

The architecture of a voice-enabled active helpline system with a mobile application and desktop application can be divided into four main components: the mobile application, the cloud server, the desktop application, and the customer service representative interface. Here's how each of these components might be designed:

Mobile Application: The mobile application would be installed on the user's smartphone and would include a voice recognition feature that recognizes the phrase "help help." When the user activates this feature, the mobile application converts the user's voice into text and sends it to the cloud server along with the user's location data.

Cloud Server: The cloud server is the central component of the system that receives help requests from the mobile application and forwards them to the desktop application. The cloud server would also be responsible for storing user data and location information.

Desktop Application: The desktop application would be used by customer service representatives or support team members to manage help requests and respond to users. When a help request is received from the cloud server, the desktop application displays the user's location on a map and allows the customer service representative to communicate with the user through the mobile application or by phone.

Customer Service Representative Interface: The customer service representative interface is the user interface that is used by customer service representatives or support team members to manage help requests and communicate with users. The interface may include features such as a queue of pending requests, user profiles, and messaging or communication tools

IMPLEMENTATION

Our project includes two modules, first one is the Mobile application for the users and a desktop application for the monitoring. The mobile application in the voice-enabled active helpline system is a crucial component that enables users to initiate a distress call easily. It uses advanced voice recognition technology to detect distress calls and retrieve the user's location data using the device's GPS system. The location data is encrypted and transmitted securely to the cloud server for processing.

The mobile application provides a user-friendly interface that allows users to initiate distress calls quickly and may include emergency contact information to access help fast. The application must be reliable and accurate to ensure successful distress calls, making it a life-saving tool in emergency situations.

The voice-enabled active helpline system has the potential to save lives and provide a sense of security to users, especially in emergency situations where quick and efficient assistance is critical. The system's accuracy depends on the reliability of the voice recognition software, which must be able to detect the user's voice accurately, even in noisy environments.

Additionally, the system must have access to accurate location data to provide emergency responders with the user's location. The integration of GPS technology within the mobile application can help pinpoint the user's location with high accuracy, but poor GPS reception in some areas may lead to

inaccurate location data. The cloud server and the desktop application play a crucial role in the system's functioning.

The cloud server receives the user'slocation data and stores it securely, while the desktop application is designed to receive and respond to help requests quickly and efficiently. The desktop application displays the user's location and other relevant information about the distress call, enabling emergency responders to access the information they need to help.

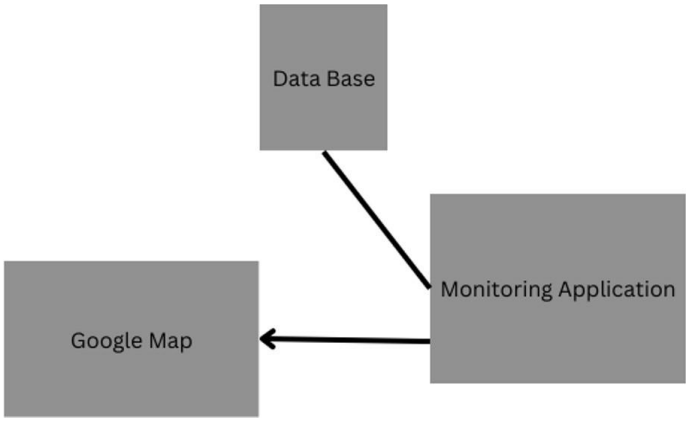


Fig 2: Monitoring System Architecture

The dataset is preprocessed which removes noise and broken data from the available dataset. Then CNN model is used for training purpose which predicts the emotion and sentiment of the picture. Later GUI is used to load a specific picture or capture a live image on trained model which will predict the emotion depicted by the picture

- ✓ Real-time monitoring of the user's location, including location history and alerts when the user's location changes.
- ✓ User management for adding, removing, and granting/restricting permissions to access location data.
- ✓ Scalability to handle large volumes of location data and user activity without performance issues.
- ✓ Communication module to receive location data from the mobile app in real-time.
- ✓ Data processing module to process the location data received from the mobile app and take appropriate action.
- ✓ Integration with other systems, such as emergency services or third-party monitoring tools.

Customization options to tailor the application to specific needs.

RESULTS AND ANALYSIS

Even though in recent times with a lot of advancements in technologies and applications, there is no proper model in place now for immediate safety and emergency SOL situations. We hope to try to give back something to society regarding this issue. We being people learning technologies wish to introduce this application which would be capable of preventing crimes against isolated people.

At the end of our venture, we first understood scope, objectives and the potential functionalities that are to be achieved in this project and indulged in surveying a lot of similar applications and their limitations. We have also made efforts in implementing the basic interfaces for the application. Quick and easy access to emergency assistance: Users will be able to access emergency assistance through simple voice commands, making it faster and more convenient for them to get help in emergency situations. Improved user-friendliness:

The system's user-friendly interface and real-time capabilities will make it easy for users to access help and convey important information to family, friends, and police authorities. Increased safety, the safe zone detection system will alert users when they are in a potentially unsafe location, allowing them to take appropriate action and also notifying their emergency contacts and the authorities of their location and potential danger.

Comprehensive emergency assistance: The integration of the helpline system and safe zone detection system will provide users with a comprehensive solution for threat or personal safety emergency assistance. Increased accessibility, the integration of voice commands makes the system more accessible, especially for users who may not be able to interact via text-based interfaces. The product can incorporate systems which disable unethical use of the product, for example harming an innocent civilian.

Better accuracy and efficiency: The system can be integrated with various other technologies such as AI, NLP, and text-to-speech for better accuracy and efficiency. Instant help from emergency services: The system can be connected to the emergency services such as the police, fire department, and ambulance services for instant help in case of emergency. More safety for women and Accident death will be reduced.

Real-time location tracking is another benefit of voice-activated active helpline systems. This implies that in an emergency, first responders can be rapidly sent to the precise

position of the person in need of assistance. Additionally, by enabling the user to per-define safe regions or locations where they feel secure, the incorporation of safe zone detection improves the user's overall sense of security. The technology can notify the emergency services of the user's location in real time. It can also transmit a distress signal if they are in an unsafe area, assuring a quick response.

Another safety feature of the system is the panic button, which enables users to contact for assistance with a single touch. With only one press, you can summon assistance, thus strengthening the system's security. Forthose who have trouble with vocal instructions, such as the elderly, young children, or people with impairments, this feature can be extremely helpful. A comprehensive emergency response solution that can deliver real-time updates and status messages to the user, emergency responders, and the user's designated emergency contacts is made possible by the voice-enabled active helpline system's ability to be integrated with other smart devices. Voice-enabled active helpline systems are a reliableand efficient solution for emergency response and public safety thanks to all these capabilities

Application

The application in the voice-enabled active helpline system is a critical component that request help from the mobile application. It processes the encrypted location data and provides emergency responders with the user's location. Overall, the desktop application is essential in emergency situations, providing a centralized system for emergency responders to manage distress calls efficiently.

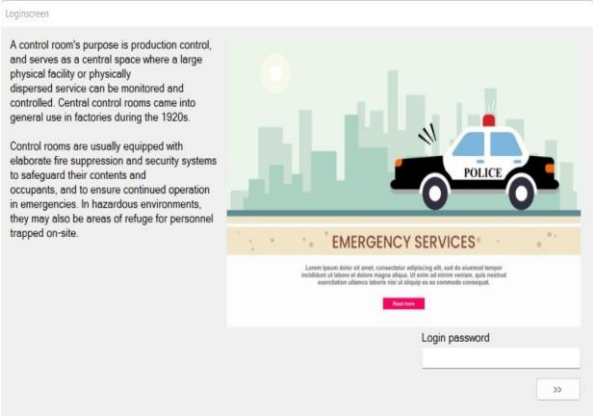


Fig : Login Page

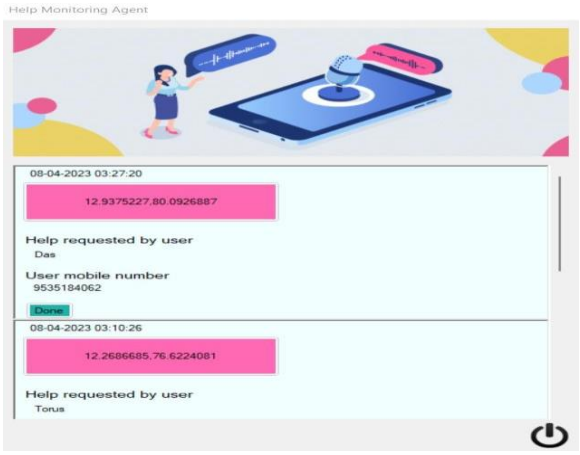


Figure : Home Page

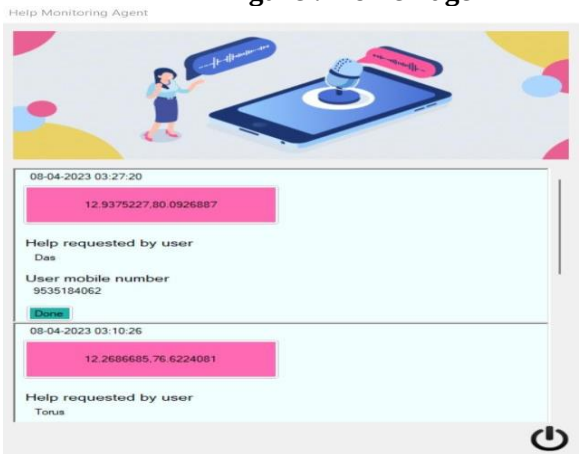


Figure: Alert Notification

5.CONCLUSION

The voice-enabled active helpline system's mobile application is a critical tool that can potentially save lives in emergency situations. The system works by using advanced voice recognition technology to detect distress calls and retrieve the user's location data using the device's GPS system. Once the distress call is detected, the mobile application encrypts the user's location data and sends it to the cloud server using a secure connection. This enables emergency responders to quickly locate the user in distress and provide the necessary assistance.

Furthermore, families and loved ones of old, disabled, or vulnerable people may feel more at ease thanks to the system's capacity to identify a user's safe zone. This will enable the system to send out alerts if they depart the defined region. In situations when these people might stray from home or get lost, this added feature can give an extra degree of security and protection. n addition, calling for

assistance may be made simpler for users of the system thanks to the usage of voice-enabled technology, regardless of their physical or mental capabilities. This is crucial for people who might have trouble with manual input or navigating complicated interfaces. In conclusion, the implementation of a voice-activated active helpline system with safe zone detection can provide numerous benefits to both individuals and communities. From increased accessibility, improved response times, and peace of mind, to cost-effectiveness and increased efficiency, this system has the potential to make a significant impact on emergency response and community safety.

Voice-enabled technologies can also help to simplify the emergency response procedure and lighten the load on first responders. Responders can be freed up to concentrate on more significant aspects of the emergency response by automating some activities, such as obtaining location data and giving real-time updates. This may result in more effective emergency responses, lowering the possibility of harm coming to those who are in need of assistance.

FUTURE ENHANCEMENT

We have made the maximum utilization of our potential and zest in developing this project. But gaining knowledge is a continuous process and so is this new technology. Therefore, in this section we present some of the ideas which can be used to enhance the functionalities of our project to widen its applications.

Add and Update contacts: Once the user is logged in, they have to add some emergency contacts who are intended to be the recipients of the location and message details, also they can be updated later on.

View Contacts: The added contacts are stored in the database and they are also shown in a particular interface where he is giving the option to update it.

Database interface: All the contacts added must be stored in database and must be queried as per the user instructions to add, update or delete contacts from the database just on the click of those respective buttons. The figure below shows the code for add contact.

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