Enabling Mobile Location Based Services for Emergency Cases by Using GPS

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ABSTRACT

This paper presents an innovative mobile emergency services application leveraging geolocation for command centers. the application amalgamates mobile functionality to swiftly respond to emergency demands within specific regions or cities. through geolocation, the mobile app identifies the user's precise location and transmits pertinent information—such as the user's name, mobile number, and current location—to a web-based application housed in a command center. this seamless process facilitates the efficient dispatching of emergency units, ensuring timely and effective responses to critical situations. Its aims to alleviate the challenges encountered by law enforcement and emergency responders in obtaining precise information while patrolling high-risk areas. The typical difficulties faced by these professionals include the duration taken and the accuracy of data retrieval. It's essential for them to receive timely and accurate information on their communication devices. Our proposal involves utilizing RSS as the web services to furnish updates for the smartphone application. Notifications regarding crimes or emergencies within users' proximity are delivered either upon retrieval or based on their location. The application is developed using the Eclipse IDE platform and evaluated on an HTC Magic device running Android OS. The application workflow commences with location retrieval, followed by the display of emergency information sorted by date. The conceptual blueprint and architecture are tailored for Pull and Push Location Based Services.

Keywords: Emergency Notification, Application, APP Inventor, GPS, Map, Location-based Services, Tracking Services, Information Services.

INTRODUCTION

Emergency notification systems serve as essential tools for ensuring personal security and safety, providing individuals with a means to quickly summon assistance during critical situations. Traditional systems often involve wearable devices or specialized phones equipped with dedicated emergency buttons. However, a common limitation of these systems is the lack of integrated GPS functionality, which can hinder the accuracy and clarity of location information provided during emergencies.

To address this issue, ongoing efforts are being made to develop more advanced emergency notification solutions. One promising approach involves the creation of mobile applications specifically designed for emergency situations. These applications leverage the widespread adoption of smartphones and tablets, offering users a convenient and accessible means of requesting help when needed.

One notable example is the use of Freeware tools like APP Inventor to create custom emergency notification applications. These apps typically incorporate GPS functionality to accurately pinpoint the user's location and provide emergency responders with essential information. Additionally, they feature user-friendly interfaces that enable individuals to quickly send emergency messages or place calls to designated contacts or emergency services.

As mobile devices continue to proliferate and evolve, the role of emergency notification applications is expected to become increasingly prominent. These applications not only provide individuals with a sense of security and peace of mind but also empower emergency responders with the information they need to deliver timely and effective assistance.

Emergency notification systems are vital for personal safety. Common types include wearable buttons and single-function phones with SOS buttons. However, these lack GPS integration, leading to unclear information during emergencies. To address this, an emergency notification app for mobile devices is being developed using Freeware called APP Inventor. This app includes GPS functionality and an intuitive interface for sending emergency messages or calls. With advancements in information and telecommunication technologies, mobile devices play crucial roles in various sectors like banking, government services, and education. Integration of technologies such as GIS and GPS aids in location determination. Recent developments like ultra-wideband radio technology enhance location accuracy, particularly indoors. The past decade has witnessed significant growth in wireless network technologies and the proliferation of portable devices like smartphones and tablets. Mobile network advancements have revolutionized internet access, leading to new ways consumers use mobile services. As mobile devices become more widespread and advanced, the importance of emergency notification applications continues to rise

LITERATURE SURVEY

Pooja Baviskar, Rupali Aher, Payal Chaudhari, Mukta Mahale 2.1 The paper "Emergency Notification Services Application Design for Mobile Devices " introduces Emergency notification system is an important tool for personal security and safety. Recently, there are two kinds of common emergency notification systems. One is designed to allow the user wearing a designed button with a connection to the device host at home. A specialized single-purpose phone, tailored for seniors, featuring an SOS button on its rear. When unexpected something happen, users just need to push the button to secure, systems could send a message to some specific institutions or people Potential methods of strategic location-based service

2.2 Kasra Madadipouya this paper examines potential methods of strategic location-based service applications on mobile networks and devices.With the swift evolution of information and communication technologies embedded in gadgets, pinpointing the whereabouts of mobile devices has gained significant relevance.Mobile devices are used in various areas like m-banking, m-government and also m-learning Several technologies with various accuracy and cost such as Geographical Information Systems(GIS), Global Positioning Systems

2.3 Kalyani Pendke, Sakshi Shegokar, Rutika Malghade, Sakshi Datir, Rakshita Adhau, Poonam Thakre. This mobile application for emergency services reference paper presents a Mobile Emergency Services Application utilizing Geolocation for Command Centers. It integrates a mobile app for responding to emergency calls for ambulance, fire truck, and police from individuals within a specific area or city. The mobile app detects the user's current location through geolocation and sends their name, age, mobile number, and location to a web application deployed in a command center. This facilitates the efficient dispatching of emergency units.

EXISTING SYSTEM

The drawbacks of existing system 108/100 include reliance on verbal communication for gathering essential details such as caller identification, location, and the nature of the emergency. In urban areas, the average response time from nearby police stations is approximately 30 minutes, contributing to delays in assistance. India employs separate emergency numbers: system 100 for police, system 102 for medical assistance, and system 101 for fire emergencies, resulting in a lack of a unified approach. These systems exhibit notably low response times and efficiency. Moreover, emergencies occurring in different Indian states may encounter challenges such as language barriers and unfamiliar terrain for victims. Additionally, GPS technology is not integrated into these systems. Regarding UbAlert-Disaster Alert, its limitations include the unnecessary reliance on social networking platforms during emergencies. Posting videos and pictures on these platforms can consume valuable time and hinder prompt rescue operations, thus compromising the primary objective of saving lives.

3.1 Project Description

The main functionalities of the application Searching, Locating, and Emergency Contact.

Searching Function: Designed to enhance user accessibility, this function automatically scans for nearby hospitals or police offices and promptly provides contact information. It streamlines the process of reaching out for assistance in urgent scenarios.

Locating Function: Leveraging advanced technologies like GPS or network services, this feature furnishes precise position

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information to users. Additionally, users can effortlessly transmit preset short messages alongwith their current location, facilitating efficient communication during emergencies.

Emergency Contact: In times of crisis, this feature serves as a lifeline. Users can initiate immediate assistance by simply tapping on a designated photo, swiftly connecting them to emergency services.

3.1.1 Software Requirnments

Programming Language : kotlin, XML
Software : Android Studio
Operating System : Windows 10(64 Bit)

3.1.2 Hardware Requirements :

RAM : 8 GB
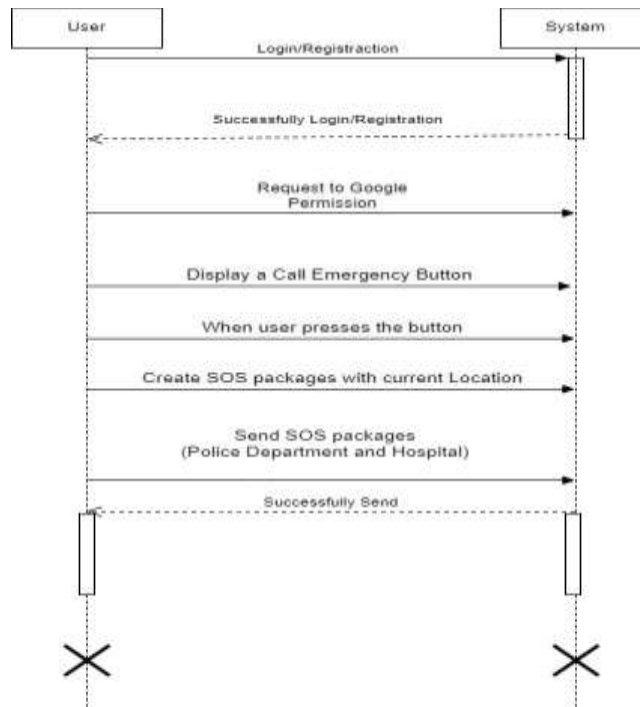Hard Disk : 500GB

System Architecture

Fig.2.4.1 System Architecture

ALGORITHM

4.1 KNN:-

KNN Algorithm:-The KNN algorithm, also known as lazy learner algorithm KNN is a simple but important way computers learn to group things. It's like a tool that helps computers recognize patterns and make decisions. It's used a lot in different areas like spotting intruders in computer systems or identifying things in pictures.

One cool thing about KNN is that it doesn't need to know much about the data it's working with beforehand. It just looks at how close things are to each other. So, it's really handy for all sorts of real-life situations.

RESULT

5.1 Login page

5.2 Registration page

5.3 User Interface

CONCLUSION

The Emergency Location Finder app relies on web services to provide up-to-date information. These services gather data from the GPS and update it regularly. When you use the app, it gives you the most relevant info based on where you are. This is all made possible by Pull and Push Location Based Service, which ensures you get help when you need it most.

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