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IOT Based Safety Technology

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Abstract

While most of the work has been done so far to put the Internet of Things (IoT) into practice, all the work focuses on resource restricted nodes, rather than connecting existing embedded systems to the network of Internet of Things (IoT). For elderly people, to develop a reliable surveillance system for the elderly, the Safety Alert System is used. This scheme proposes an improved safety alert scheme for the elderly with higher precision, sensitivity and tracking specificity. Elderly, in this job, we use the protease tool and use Raspberry Pi as a virtual microcontroller for GPS (Global Positioning System). We will use GSM (Global Mobile Communication System). Implemented a GSM and GPS module to monitor the place and the GSM module will send a signal to the families and the ambulance service. The parents can reach the user for emergency assistance, as well as the ambulance.

Keyword- *IoT, Microcontroller, GPS, GSM.*

I. INTRODUCTION

The Internet of Things (IoT) is a fundamental idea that results from the merged field of computer science and electronics. IoT describes how everyday objects communicate and communicate with other objects over the internet. In IoT objects are completely fitted microcontroller and sensor devices, as well as various software applications and the appropriate protocol stack allowing them to talk to other objects. IoT is communication all-to-everything. IoT can generally be described as a combination of sensors, connectivity and processes of individuals. IoT combines smart devices and intelligent services to generate composite applications such as intelligent transportation, smart cities, intelligent healthcare, smart home construction, digital agriculture, intelligent farming etcIoT delivers the demand of real-time services and assists in saving time, resources and even manpower. This literature review explores the impact of IoT technology in several fields. The essential idea of the Internet of Things (IoT) has been around for nearly two decades, By virtue of its considerable effect on the improvement of our daily life and society. When things like home appliances are linked to a network, they can operate together and deliver the ideal service in its entirety, not just as an independent worker Collection of devices. This is helpful in many of the applications and services in the true globe and, for instance, an intelligent residence window would be constructed in such a way that it can be opened for oxygen when the air conditioner is switched on or when the gas oven is switched on. The concept of IoT is particularly useful for individuals with disabilities because IoT technologies can promote human operations on a larger scale for example, building or society, because devices can work together to behave as a full system. A lot of job has also been performed to implement the IoT to date. Using a smart system, the scheme provides outdoor/indoor surveillance for the elderly system. This system is an important function that has the ability to increase the autonomy of the elderly while minimizing the risks of living alone, which can transmit information on unwanted events to a contact details register and family members at any time and from anywhere.

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II. RELATED WORK

Kiran Mensinkai et.al. proposed security is the greatest problem for an person in this suggested system's universe today. There is a growing number of harassments against females, elders and kids every day. The scheme consists of a surveillance device in this project, which is enabled when the unit is taped, then a text message is sent to the corresponding emergency contacts along with a speech alert message. The individual receiving the notifications can also locate and monitor the place at each and every function without the victim's application interaction [1].

Alexandru Eugen Popescu et.al. presented a costume effort to safeguard vulnerable individuals. The device that operates on costume inflation is based on an accelerometer and the Raspberry Pi Microcontroller processes all the information that Raspberry Pi IDE writes the code. The object of the costume is to Protect individuals who can harm themselves by falling on the floor (sick elderly or locomotive issues, children, etc.) [2].

Glenson Toney et.al. described the need for an sophisticated scheme occurs with growing atrocities against females and kids. To serve someone's objective of warning for assistance. Because of absence of proof, most instances stay mysterious or tweaked. The scenario is harmful and we are putting forward a scheme that It would assist victims not only to send out a panic and warning message, but also to collect proof in the form of images. We are suggesting a scheme initiated by human beings. It also enables the system to be activated with a Option to turn button and drop detector. The bracelet would work with a controller of the GSM / GPS kit. The band would also be interfaced with a wireless camera in order to gather pictures. A human act would initiate the scheme. On initiation, the video gathered is streamed live video to the control room. A warning message is sent in conjunction with a predefined mobile station Together with the place until the system is reset, the individual can be monitored as longitude and latitude changes are constantly being sent. The system is also intended to be used as an emergency medical warning scheme [3].

Q. Zhang et.al. elaborated study of enabled a trustworthy, secure and real-time home-based medical environment called the Home Healthcare Sentinel System (HONEY) to detect drops for elderly individuals in the home telecare setting.. The general idea of HONEY is a three-step threat detection system composed of multimodality signal sources, including an accelerometer sensor, audio, pictures and video clips, through on-demand speech recognition and video techniques [4].

Yu A. Rhuma et.al. proposed a novel computer vision based fall detection system for monitoringan elderly person in a home care application. Background subtraction is applied to extract the foreground human body and the result is improved by using certain post-processing. An ellipse fitting information and a projection histogram along the ellipse axes are used as characteristics to distinguish different human postures. These features are then fed into a DAGSVM (Directed Acyclic Graph Support Vector Machine) for posture classification, which results in combination with derived floor information to detect a fall. From a 15-person data set, We show that our fall detection system is capable of achieving a high fall detection rate (97.08 %) and a very low false detection rate (0.8) [5].

Annu Kumari et. al. designed a gadget that can act as a rescue device and prevent innocent individuals from being harassed. Our goal behind this project is to design and produce a gadget that is so compact in itself that it benefits from camouflage. Also included in the gadget are patient and critical care-health care systems required. In this document, they provide the main points of the gadget and its use in moment of risk. We also provide data about the difficulties experienced in this area now and in the near future [6].

El-Medany et.al. introduced a real-time monitoring scheme providing the tracked vehicle's precise places at low cost. The scheme is deployed using the cellular GM862's quad band module. A surveillance server and a graphical user interface were also introduced on a website using Microsoft SQL Server 2003 and ASP.net to view the present place of a vehicle on a particular map. The scheme offers data on the car status, such as velocity, mileage. The prototype was tested, analyzed and discussed the outcomes experimentally. The studies are performed in different fields of the Kingdom of Bahrain using Google maps [7].

Iman Azimi et.al. suggested IoT allowed older surveillance systems to categorize current methods from a fresh view and introduce an older, focused hierarchical surveillance model. We investigate the existing approaches by focusing on the needs of the elderly. Furthermore, the main goals and trends

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in IoT - based older monitoring systems to pave the way for future systems to improve the quality of the life of the elderly [8].

III. PROPOSED SYSTEM

We introduced GSM module in this work. GSM module will send the message to the parents and also to the Ambulance Service. The relatives and the Ambulance can reach for immediate assistance to the user. We interfaced with a GPS module to find the user's location at risk. The user's location will be communicated to the parents and ambulance service.

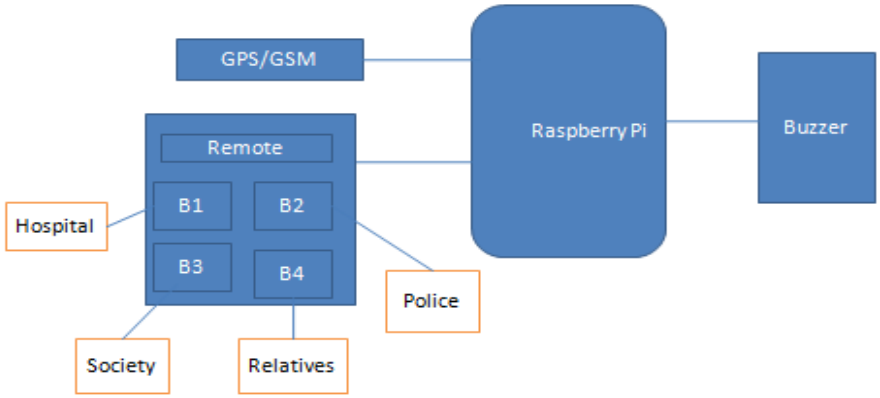

Fig 1. Proposed System

The relatives and the Ambulance reach the user so that they can help immediately by accessing the location (coordinates) on Google Maps. The device will be activated whenever the panic switch is pressed. Buzzer is provided in the device, the buzzer Produces elevated noise when the device is enabled in the surrounding region. So, individuals are able to hear the noise in the area and assist the user.

IV. RESULT

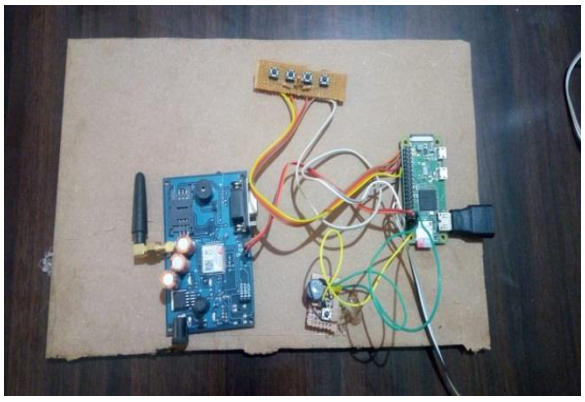

Fig 2. Final Output

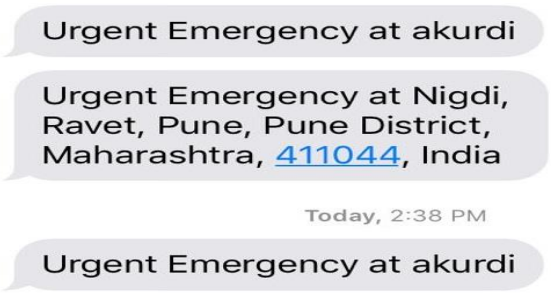

Fig 3. Emergency Message Delivered

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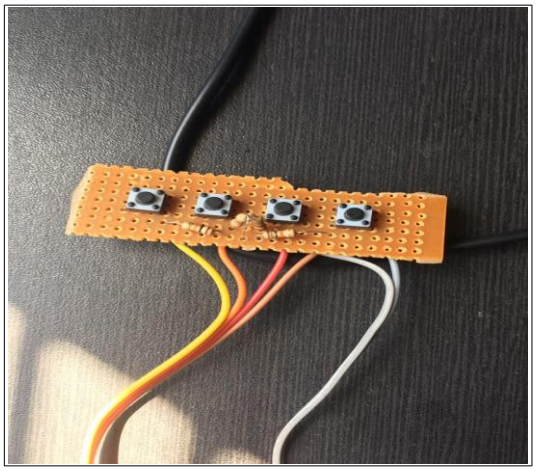

Fig 4. Remote

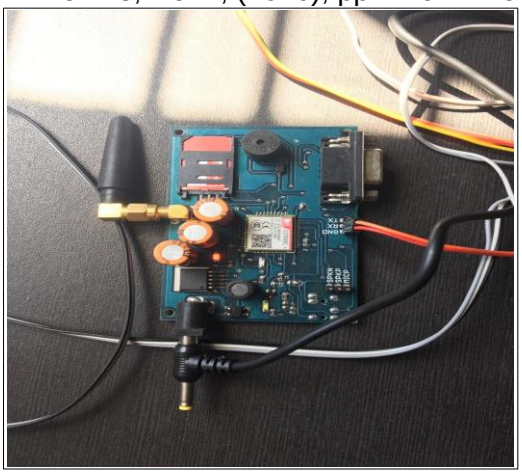

Fig 5. GSM is used for current location

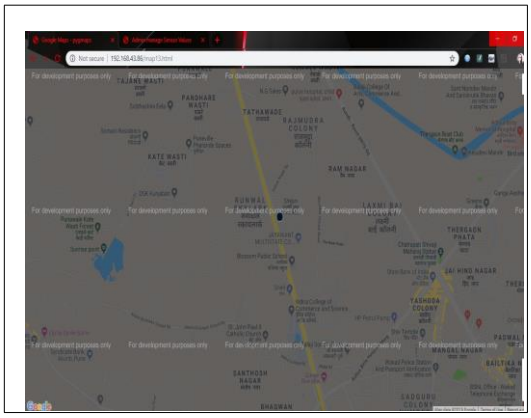

Fig 6. User Location

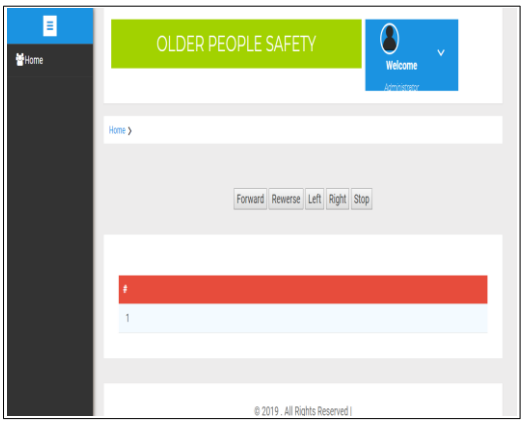

Fig 7. Direction Guidance for user

CONCLUSION

Thus we have implemented IOT based Elderly People Safety System will help solve the critical problems faced by the elderly. With equipment and ideas that are technologically sound in the near past. While society may or may not change for the Enhanced, the capacity to be independent, self-confident and genuinely free can come with the finest equipment for arming yourself. The system will provide right data as it ensures physical activity. The same equipment. Our main goal of this job is to ensure that all our society's elderly people feel safe and safe. The system will be portable, shock proof and cost-effective.

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