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Ambulance Tracking with Patient Health Monitoring System Using GPS and GSM Module

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ABSTRACT:

With the assistance of this project, we can determine the precise location of an ambulance while simultaneously monitoring essential health parameters of a patient. These parameters encompass temperature, humidity, and heartbeat rate. A text message containing the location and sensor readings is transmitted to a doctor's mobile device or any authorized individual within the hospital. This recipient can then promptly inform the doctor about the ambulance location and the patient's health status. By utilizing these parameters, the doctor can make the necessary preparations for the patient's treatment and determine the ambulance's whereabouts.

INTRODUCTION

This project encompasses three primary functionalities. The first one involves monitoring the health of the patient, while the second focuses on tracking the ambulance transporting the patient. The third function revolves around transmitting the aforementioned details to the hospital or doctor using GSM technology. Through this project, it becomes possible to determine the ambulance's location and simultaneously monitor various health parameters of the patient, including temperature, humidity, and heart rate. A text message containing the location and sensor readings is sent to the doctor's mobile device, or alternatively, it can be forwarded to any authorized personnel within the hospital. This individual can then promptly notify the doctor regarding the ambulance's location and the patient's health condition, allowing the doctor to make the necessary preparations for treatment. The ambulance follows a designated route separate from other primary vehicles to reach its destination. Sensors integrated into the ambulance system continuously monitor the patient's health, and if the readings exceed the normal values, the GSM module transmits the tracked data to another GSM unit. Consequently, the hospital unit becomes aware of the patient's condition even before the ambulance arrives. An advantage of this project is its operation on a 5V DC power supply, which is readily available. Another recommended method for ambulance tracking is the utilization of Google Maps, which offers an efficient and convenient means of monitoring vehicle location online. Hospital personnel can employ these online maps to track the ambulance, leveraging the internet to determine the ambulance's location based on longitude and latitude coordinates. In today's internet-driven world, access to the internet is widespread and rapid. Numerous websites provide online maps, with Google Maps being one of the most renowned. By having a computer or laptop and an internet connection, hospital staff can receive an SMS on their mobile device and manually input the relevant parameters into Google Maps. Upon clicking the view button, Google Maps will display a marker pinpointing the precise location of the ambulance.

LITERATURE SURVEY:

1. Ahmet Ar__s and Sema F. Oktu g, Nesnelerin Interneti Guvenligi: Servis Engelleme Sald_r_lar_Internet-of-Things Security : Denial of Service Attacks".

Ahmet Aris and Sema F. Oktu g, Nesnelerin Interneti G• uvenligi : Servis Engelleme Saldirilar" Internet-of-Things Security : Denial of ServiceAttacks "Internet of Things (IoT) is a network of sensors, actuators, mobile and wearable devices, simply things that have processing and communication modules and can connect to the Internet. In a few years' time, billions of such things will start serving in many fields within the concept of IoT. Self-configuration, autonomous device addition, Internet connection and resource limitation features of IoT causes it to be highly pronto the attacks. Denial of Service (DoS) attacks which have been targeting the communication networks for years, will be the most dangerous threats to IoT networks. This study aims to analyze and classify the DoS attacks that may target the IoT environments. In addition to this, the systems that try to detect and mitigate the DoS attacks to IoT will be evaluated.

2. Mohammad A. Al-Khedher, Hybrid GPS-GSM "Localization of Automobile Tracking System", International Journal of Computer Science & Information Technology (IJCSIT) Vol 3, No 6, Dec 2011.

Mohammad A. Al-Khedher, Hybrid GPS-GSM Localization of Automobile Tracking System ", International Journal of Computer Science & Information Technology (IJCSIT) Vol 3, No 6, Dec 2011An integrated GPS-GSM system is proposed to track vehicles using Google Earth application. The remote module has a GPS mounted on the moving vehicle to identify its current position, and to be transferred by GSM with other parameters acquired by the

automobile's data port as an SMS to a recipient station. The received GPS coordinates are filtered using a Kalman filter to enhance the accuracy of measured position. After data processing, Google Earth application is used to view the current location and status of each vehicle. This goal of this system is to manage eet, police automobiles distribution and car theft cautions.

3. Smart Real-Time Healthcare Monitoring and Tracking System using GSM/GPS Technologies", The Master of IEEE Projects 2015.

Smart Real-Time Healthcare Monitoring and Tracking System using GSM/GPS Technologies", The Master of IEEE Projects 2015Health monitoring systems have rapidly evolved recently, and smart systems have been proposed to monitor patient current health conditions, in our proposed and implemented system, we focus on monitoring the patient's blood pressure, and his body temperature. Based on last decade statistics of medical records, death rates due to hypertensive heart disease, shows that the blood pressure is a crucial risk factor for atherosclerosis and ischemic heart diseases; thus, preventive measures should be taken against high blood pressure which provide the ability to track, trace and save patient's life at appropriate time is an essential need for mankind. The objective of this work is providing an effective application for Real Time Health Monitoring and Tracking. The system will track, trace, monitor patients and facilitate taking care of their health; so efficient medical services could be provided at appropriate time.

BLOCK DIAGRAM:
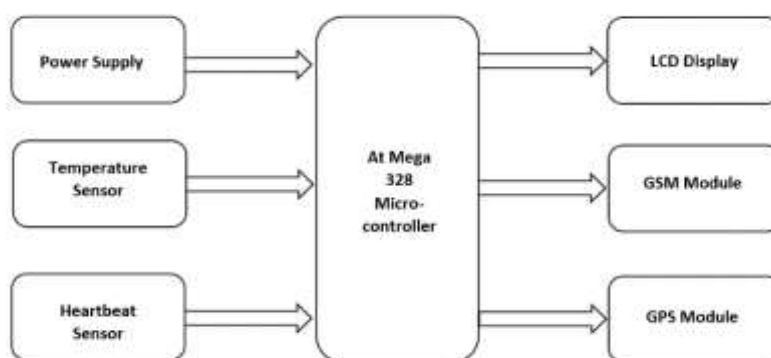
(1)

RESULT AND CONCLUSION:

This paper introduces the Internet of Things (IoT) as the foundation for this project, which utilizes micro-controller technology alongside GSM and GPS systems to transmit data through text messages. This innovative approach in the medical field enables doctors to closely monitor patients' health even while they are being transported in an ambulance. Crucial physiological parameters such as body temperature and heartbeat can be continuously monitored, allowing doctors to analyze the patient's condition from any location within the hospital. This not only alleviates the workload on doctors but also provides accurate results. This paper introduces the Internet of Things (IoT) as the foundation for this project, which utilizes micro-controller technology alongside GSM and GPS systems to transmit data through text messages. This innovative approach in the medical field enables doctors to closely monitor patients' health even while they are being transported in an ambulance. Crucial physiological parameters such as body temperature and heartbeat can be continuously monitored, allowing doctors to analyze the patient's condition from any location within the hospital. This not only alleviates the workload on doctors but also provides accurate results.

FUTURE SCOPE:

1. Expanding the range of sensors to monitor additional health parameters is a viable option. Moreover, the project can be enhanced to automatically initiate an emergency call if the patient's health parameters exceed a predetermined threshold or if the patient deviates from a specified track. With some modifications, this project can also find application in the industrial sector.

2. The project holds potential for tracking industrial vehicles transporting equipment or materials such as fuel tanks, fuel containers, or gas containers. It can be implemented in vehicles used by scientific laboratories or industries that handle chemicals, radioactive substances, or explosives. In such cases, the project can be adapted to track the vehicle's location, although specific modifications may be necessary.

3. To ensure the security of the materials being transported, the health parameter sensors would need to be replaced with appropriate sensors such as temperature sensors and LPG gas leakage sensors. These adjustments would enable the project to serve the purpose of safeguarding the transported materials.

REFERENCES:

[1] Ahmet Ar__s and Sema F. Oktu g, Nesnelerin Interneti Guvenligi:Servis Engelleme Sald_r_lar_\Internet-of-Things Security : Denial of Service Attacks".

[2] Mohammad A. Al-Khedher, Hybrid GPS-GSM "Localization of Automobile Tracking System", International Journal of Computer Science & Information Technology (IJCSIT) Vol 3, No 6, Dec 2011.

[3] Smart Real-Time Healthcare Monitoring and Tracking System using GSM/GPS Technologies", The Master of IEEE Projects 2015.