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PATIENT'S ROOM MONITORING SYSTEM

Manjesh B N[1], Kavya M[2], Suparna P[3], Amit Balchander[4]

Assistant Professor, ISE, JIT, Bengaluru, India[1]

Student, ISE, JIT, Bengaluru, India[2-4]

Abstract: Efforts are being made to use new technologies in various fields to improve people's living standards due to technological advances and miniaturisation of instruments. Healthcare is an important area where technology is being used. Healthcare is extremely costly for those who need it. It has been widely used to connect available medical resources and provide smart, reliable, and efficient healthcare to patients and the public. This is known as the Internet of Things (IoT). Health monitoring for active assisted living is one approach that can take advantage of the IoT to improve a patient's lifestyle. With this project, I presented an IoT architecture specifically designed for healthcare applications. The goal of the project was to develop an affordable remote health monitoring system that can be built with locally available sensors. The proposed system collects sensor data using an Arduino microcontroller and transfers it to the cloud, where it is managed and prepared for remote display. Via email, the doctor or nurse can receive feedback and instructions based on the data analysis.

Keywords: Health monitoring, sensors, Internet of Things.

I. INTRODUCTION

IoT, or the Internet of Things, is a network of interconnected devices that communicate and exchange data with each other. In the context of healthcare, IoT has significant implications for improving the quality and efficiency of medical care, and this is often referred to as the "Internet of Medical Things" or "IoMT." In Medicare, IoT technology is being increasingly utilized to enhance patient monitoring, improve healthcare delivery, and enable remote patient care. Connected devices such as wearable sensors, smart medical equipment, and implantable devices can collect real-time health data, which can be transmitted to healthcare providers and analyzed for actionable insights. One of the key applications of IoT in Medicare is remote patient monitoring.

This is for senior individuals who may also be dealing with deteriorating health problems. athletes working out to identify the exercise plans that will improve efficiency. Recently, a number of answers have emerged to the issue of remote health tracking. The gadgets have a wireless detection system that electronically transmits sensor data to a distant computer. Even some users opted to use a programme with a yearly fee. This is an issue in developing nations because some people cannot use them because of the expensive costs.

II. LITERATURE SURVEY

SeVa A Food Donation App for Smart Living. An important goal in our world today is to eliminate food waste by reutilizing available food sources within local communities: leftover food items in restaurants, stores and food distribution centers that may be approaching expiration; and any perishable items not used in entirety within their desired period. This is highly significant, particularly during crises such as the COVID-19 pandemic[1].

Foodernity: A Mobile and Web Application for Food Sharing. Food insecurity has been a chronic and significant issue in our society, specifically in low-income areas. Hunger, poor nutrition and health, and early death are only a few of the terrible impacts. Hunger is caused more often than not by a lack of food; rather, it is a matter of figuring out how to make the food that is available, accessible to everybody. Non-profit organization work to alleviate the negative consequences of food insecurity by giving food and services to those who are hungry[2].

Implement Android Application For Book Donation. Books are the fountain of knowledge and access to them is something that is often taken for granted. The truth however is that many people have books lying around the house that they don't need any more that could be useful to someone who is in dire need of it. Android is one of the most widely used mobile application operating systems in the world due to the support it offers to both user and developer [3]

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III. METHODOLOGY

Sensors connected to patients and an microcontroller were used to create this craft. The microcontroller transmits all sensing and position data to a MySQL database hosted in the cloud. A doctor or carer can access the online site whenever they want to keep track of the patient's data. In the event of an emergency, such as a rise in body temperature or pulse rate, the discovery of hazardous gas, etc., an email and SMS warning were sent to the guardian's and doctor's mobiles. The patient's personal login information can be used by a doctor or the patient's caretaker at any time to monitor the patient's location, allowing medical personnel to offer the proper assistance in an emergency. Practical requirements There must be a section in the software for Real requirements In order for the doctor to access the patient's data, the software must have a module for login using specific patient passwords. There must be a module in the programme that allows users to register in using specific user details. 2patient in order for a carer or caretaker to keep track of the patient's critical data. To meet predetermined criteria, components, modules, connections, and data are used. The system design shows the overall layout of the product, as well as its component components and how they are distributed among processors.

3.1 WORK FLOW DIAGRAM:

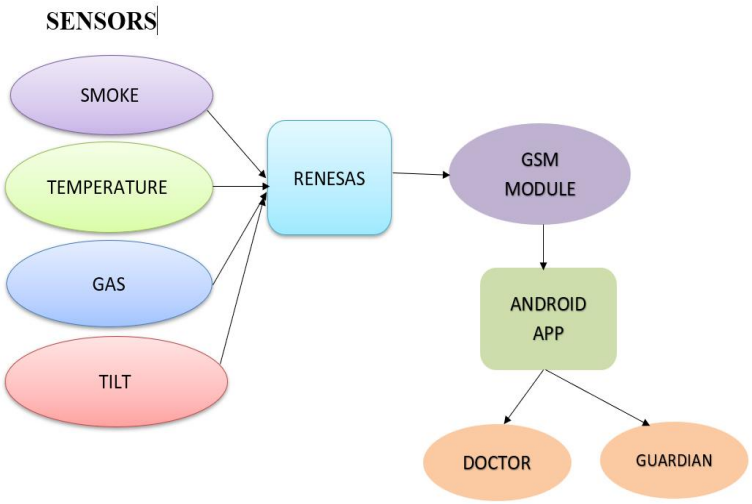

Fig : Work Flow Diagram

3.2 WORKING:

A patient's room monitoring system can be worked using various technologies and components. Here is a concise overview of the implementation process:

- . System Design: Define the requirements and objectives of the monitoring system. Identify the necessary sensors and devices to be integrated into the system.
- . Sensor Selection: Choose appropriate sensors based on the monitoring needs. Common sensors include motion sensors, temperature sensors, heart rate monitors, bed occupancy sensors, and video cameras.
- Data Collection: Install the selected sensors in the patient's room to collect relevant data. Connect the sensors to a central monitoring unit or a network for data transmission.
- Data Processing: Develop software algorithms or utilize machine learning techniques to process the collected data. This may involve analyzing sensor readings, detecting anomalies, or extracting meaningful insights.
- Alerting and Notifications: Set up alert mechanisms to notify healthcare providers or caregivers of any critical events or abnormal readings. This can be done through visual indicators, audible alarms, or notifications on mobile devices.
- Data Visualization and Analysis: Create a user-friendly interface or dashboard to display real-time and historical data. Visualization tools can help healthcare professionals monitor patient conditions and identify trends or patterns.
- Integration with Electronic Health Records (EHR): Integrate the monitoring system with existing electronic health record systems to enable seamless data exchange and provide a comprehensive view of the patient's health.
- Privacy and Security: Implement appropriate security measures to protect patient data and ensure compliance with privacy regulations. This may involve encryption, access controls, and regular system audits.

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- Scalability and Maintenance: Design the system to be scalable, allowing for the addition of more rooms or patients. Regular maintenance, sensor calibration, and software updates are necessary to ensure the system's reliability and accuracy.
- Training and User Support: Provide training to healthcare staff and caregivers on how to effectively use the monitoring system. Offer ongoing technical support to address any issues or questions that arise.

IV. RESULT

A test set of some photos was developed to test the suggested methods..

Fig. 4.1 ANDROID REGISTRATION PAGE

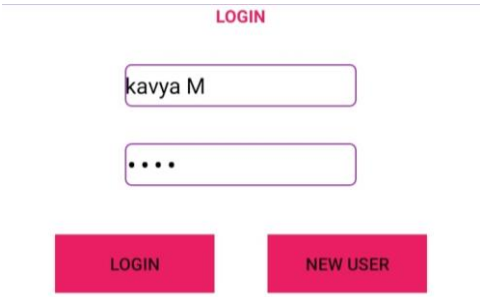

Fig. 4.2 ANDROID LOGIN PAGE

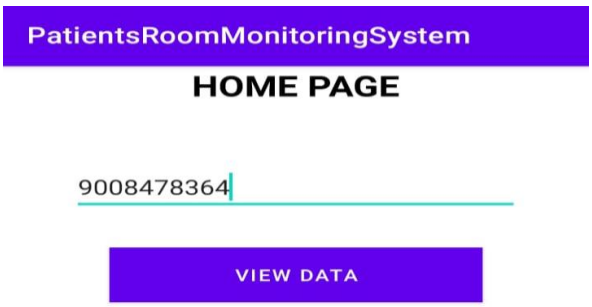

Fig. 4.3 ANDROID HOME PAGE

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Here GSM MODULE is activated.

Fig. 4.4 gsm activated

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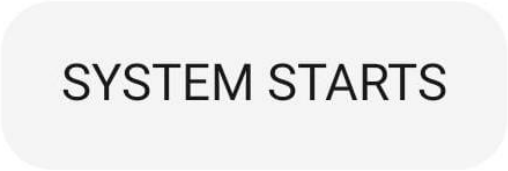

Fig. 4.5 sms text

We will get all the inputs via sms and android monitoring app.

V. CONCLUSION

Among other component modules, the heartbeat detection, fall detection, and distant monitoring modules all produced the anticipated outcomes. Eventually, the created system components might be enhanced and put together into a single circuit. The accessibility of all the circuit components used in remote health monitoring increased in importance during project creation. Micro Electro Mechanical Systems (MEMs) and microcontrollers have improved in price, speed, size, and power efficiency as a result of advancements in the integrated circuit business. Healthcare professionals are now using embedded devices more frequently as a result.

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