Child safety GPS tracker system

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ABSTRACT

This paper suggests the idea of designing a child's GPS system using Root that will help parents monitor the child even when he is not at home and find all of his child's activities in any remote part all over the Globe. It is a new, effective, smart, and protective way for the Cradle System to raise a successful child. Hear the program checks all her details of the minutes needed to care for and protect her baby at birth. intelligent design and design using technologies/methods including Internet of Things (IoT) (Module such as Node-MCU, temperature sensing), Cry Detecting Mechanism, Cloud Computing (Data Storage), and User-Friendly IoT application (for user controls). To be able to see the work of each child, including the different sensors/modules o Cradle: Comprehension Module for getting Water in his Bed, All his details such as those sensors/modules will be stored in the Android App.

Keywords: Child and Safety System, parents monitor, Node MCU

1. INTRODUCTION

Currently, women's participation in her work in developed countries has increased significantly, affecting infant care in many families. Both parents are asked to work because of the high cost of living. However, she still needs to take care of the children who are heirs, thus increasing the workload and stress, especially for mothers. Working parents are not always able to care for the children who are heirs. hey or send children heirs o parents' heirs or hire a babysitter while working. Some parents are concerned about the safety of their child heirs because he cares for others. go home and check on the beneficiary children during the beneficiary free e-mail, such as lunch or leave. A child protection program cap can monitor the children's status of the actual email proposed to solve these problems. A child monitoring program with a video camera and microphone without restrictions on coverage. It can send data and promptly notify parents of emergencies, thus shortening the email needed to manage such emergencies. Often, children cry because they are hungry, old, unwell, or need an heir's diaper. Suman Infant Death Syndrome (SIDS) is also known as hospital death, because many children who die of SIDS, are found in heirlooms. Occurs o infants 12 months old.

Design a vision-based IoT app that will help parents to monitor the child's heir even when he or she is not at home and see all of his or her Baby activities from any remote part of the world. It is a new, smart, and protective way for the Cradle System to raise a baby effectively. her system monitors all her/him minute details needed to care for and protect her baby at birth. Intelligent design and innovation come with the use of technologies/methods including the Internet of things (IoT) (Module like NodeMCU, Humidity & temperature sensing), Cry Detecting Mechanism, and User-Friendly Root application (for User Controls). To test each of Baby's functions, different sensors/modules are attached o the Cradle: Sensing Module for getting her Bed wet, Cry Detection Circuit that analyses Cry Patterns.

2. LITERATURE SURVEY

Simon presented a smart baby monitoring system based on Raspberry Pi. The system detects the baby's motion and sound. The video of the baby's present position is also displayed on a monitor in his system. Ramee proposed a safe child monitoring system based on a Raspberry Pi microcomputer and a Pi camera. Yeshwantrao Chavan College of Engineering, Nagpur, India. Dr. SacinDamke, Department of Pediatrics, Jawaharlal Nehru Medical College, Sawangi, Wardha Pediatrics, Datta Mage Institute of Medical Sciences, (DU), Wardha, India, system is accessed online through the website. Presented an advanced baby monitor system that monitors baby movements, temperature, and humidity surrounding the baby. The system also gives the log a record of the baby's activity and sleep cycles so that parents could monitor their child remotely. A prototype for baby monitoring based on the GSM network is developed by Patel and Metre. the system monitors the baby's body temperature, pulse rate, moisture condition,

movement, and transfer here parameters of parents using the GSM network. Ziganshin presented a system using a smart wearable device and an android application. his wearable device monitors the baby's pulse, temperature, and position and generates an alert in case of an irregularity on the android app. Saranya presented a child monitoring system based on android phones that detects the safety zone of the baby by using GPS sensors, acceleration sensors, and mobile GIS (Geographic Information System). Baby monitoring is really a tough job for the parents where both are working. We have come up with an idea to design an automatic system which can give a solution on the parents of monitor them from their workplace. The main objectives of his system to create a Non-contact-based baby monitoring system with the Internet of Things capabilities. Prevent a baby from falling from the bed which can cause the sudden death of a baby. For monitoring the baby at the hospitals. Detect if the baby is approaching o the boundaries of a bed, if detected, the messages will be generated in the form of an e-mail which will be having the snap of the baby o notify the parents or guardian.

3. THE MAJOR BUILDING BLOCKS OF THEIS PROJECT
(a) Regulated power supply.
(b) Microcontroller.
(c) Temperature sensor.
(d) Rain sensor.
(e) MEMs sensor.
(f) GPS
(g) WIFI
(h) Buzzer

4. BLOCK DIAGRAM
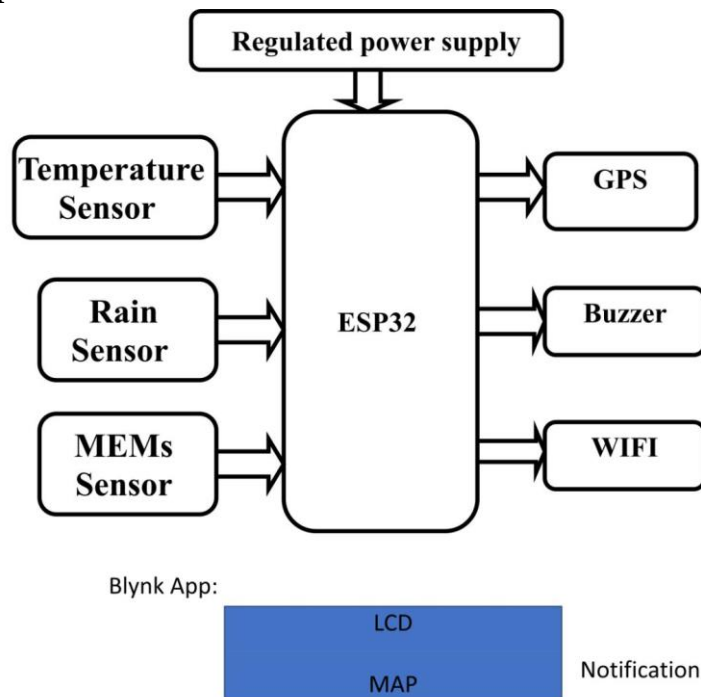
5. HARDWARE AND SOFTWARE
5.1 Wi-Fi Module
The technology is an alternative to wired technologies, which are often used to connect devices wirelessly. Wi-Fi refers to the IEEE 802.11 b wireless standard for the wireless network .The Wi-Fi network connect computers to the Internet via a wi-fi network. Wi-Fi access point that is created by setting up an Internet access point. When a Wi-Fi enabled device encounters an access point, can connect to the wireless network. The access point can support up to 30 users and can be used in the range of 100 to 150 feet indoors and 300 feet outdoors. Many access points can be connected to each other with the help of the Ethernet cable to create a large-scale network.

5.2 ESP3

ESP32is a series of low-cost and also a chip microcontroller with integrated-Find dual-mode of Bluetooth. the ESP32 series employs an LX6microprocessor in both dual-core and single-core variations and includes in-built antenna switches, RF. balun, power amplifier low-noise receive amplifier, filters, and power management modules. ESP32 is created and developed by Espressif Systems, a Shanghai-based Chinese company, and is manufactured by TSMCusing heir 40 nm process. It is a successor o the ESP8266microcontroller.
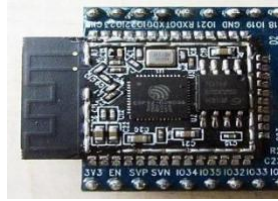

5.3 LM 35 (temperature sensor)

A sensor is a device that measures a physical quantity and converts it into a signal which can be read by an observer or by an instrument.The output of the lm 35 temperature sensor is in millivolts (mv).Connect the Vcc Pin o 5v and GND o GND, the output of the lm 35 temperature sensor is in the analog form, o convert his into the digital form we are going o use analog o digital converter.
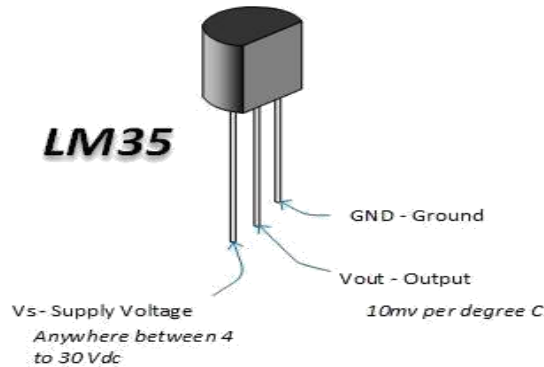
5.4 Arduino IDE

Arduino Integrated Development Environment is a cross-platform application. It is used to record and upload programs to respected Arduino boards, but also, with the help of third-party cores, other vendor development boards. The IDE source code is issued under the GNU General Public License, version 2.
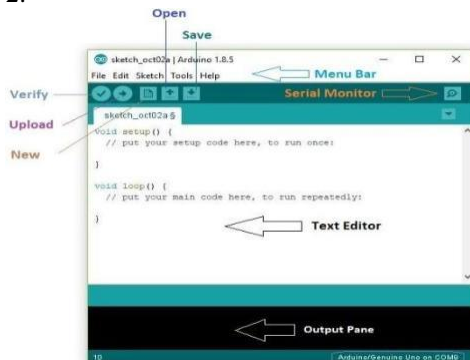
5.5 Power supply

The power supply system has an input of AC and DC, as well as for our calls, and a DC output. This DC output is used for the power of the electronic components. The input signal can be supplied from a 240 V, 50 Hz or DC current from a battery to a car (or a bus power from an existing circuit.

5.6 Rain moisture sensor

Moisture sensor will be used to find presence of moisture at vehicle glass. We will insert this sensor at he glass screen. It always check he presence of moisture and rain water. By this Microcontroller will perform he specified action depending up on our requirement. After detecting he rain water moisture hen he servo motor controls he wiper.

5.7 MEMS (Micro-Electro-Mechanical Systems)

Micro-Electro-Mechanical Systems (MEMS) is the integration of mechanical elements, sensors, actuators, and electronics on a common silicon substrate through micro fabrication technology.MEMS are made up of components between 1 t 100 micrometers in size (i.e. 0.001 o 0.1 mm) and MEMS devices generally range in size from 20 micrometers (20 millionths of a meter) a milli meter.The tiny micro-structures can only measure force in a single direction or axis of acceleration. this means with a single axis measured, you can only know the forces in either the X, Y, or Z directions, but not all.MEMS are used in many applications. In his project, we are using his MEMS sensor o find out the direction of quilting and also for the balancing robot.

5.8 GPS (Global Positioning System)

GPS stands for global positioning system, which provides unequalled accuracy and flexibility of positioning for navigation.The GPS provides continuous three-dimensional positioning 24 hrs a day throughout the world. GPS provides accurate location and time information for an unlimited number of people in all weather, day and night, anywhere in the world.
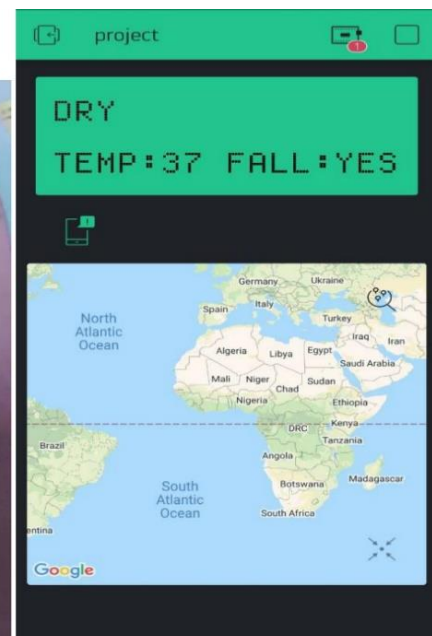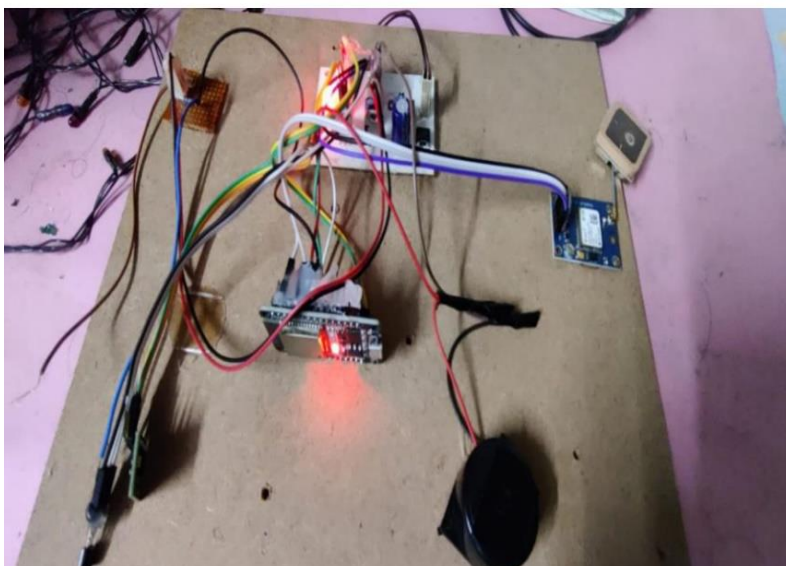

5.9 BLYNK Application

Blynk was designed for the Internet of Things. The remote control of equipment, and display data from sensors, the storage of the data, visualize it, and do many other interesting things. The platform has three main components, For the Blynk app that allows you to create amazing user interface for your project by using a variety of widgets. Blynk server and is responsible for all the communications between the smartphone and the hardware. You can also take advantage of our blynk cloud or run your private blynk server locally. The open-source code easy to handle thousands of devices, and it can even run on a raspberry pi. You need to have the Blynk library for all popular platforms to communicate with the server, and to process all of the inbound and outbound orders.

6. EXPERIMENTAL RESULT

7. EXPERIMENTAL RESULTS AND CONCLUSION RESULTS

When the device is on and the blink application is connected without phone using wi-fi module, we will get the temperature and wet/dry state of the child and the position of the cradle. If the child is wet or if the child temperature is high and also when the position of the child is in fallen state then, we get a flash alert to our connected device and till all the sensors back to normal state we keep on getting the flash alert messages and the buzzer at high state.

8. CONCLUSION

In the nutshell, this system is made in the consideration of giving comfort to working parents. This system can be very much useful for them. It also enhances the use of IoT. People can use technology to make them more comfortable and quicker. Home appliances become connected to the internet, which makes them smart devices as they can work on their own if they are designed in such a manner by using sensors. A Smart baby room can be like a blessing for the parents. They don't need to pay for maids or caretakers for their babies. They can trust the system because machines are more reliable than humans. In conclusion, the project was designed for locating missing or lost children. This project was given depth information about the child tracking system with the help of two components such as GPS and GSM telephony services the application is built-in. Finally for this application has room for enhancement. The proposed system will be improved in later work. The proposed system monitors the baby whether the baby is sleeping or not and also checks the room's condition is favourable for the baby or not. It can be enhanced by adding a baby's health monitoring. Parents can also check their babies from another room at home. For short-range communication, they can use Wi-Fi and Bluetooth technologies.

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