ENACTMENT OF SMART CHILD MONITORING SYSTEM

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ABSTRACT - Tracking the movement of infants and early childhood kids in an open area is a greater challenge for parents. To address this issue, Child Positioning System, which uses the location of the child was initiated, which monitors the child movement round the clock. It can easily point out the location of the child and also senses the surrounding environment. All the details are periodically updated in the cloud storage. Based on the previous movements, the system that can predict the normal activities and the abnormal activities with the help of Prediction algorithms. . If there is a sudden change in the child's body or behaviour, it sends an immediate alert to their parents. Before that it searches for nearest guardians of the child. It aims to keep the parents in a tension free environment monitoring their child status in a detailed manner.

Key Terms: - Global Positioning System (GPS), Short Messaging Service (SMS), Global System for Mobile Communications (GSM), Arduino UNO.

I. INTRODUCTION

Children are the ones who will take our generations further and innovate new methodologies used in a common world of making human life more sustainable and comfortable. Every day, in newspapers, websites, and TV channels new cases of violence against children were found. Murders, physical abuse, molestation and while somewhere a child playing outside his own house is run over by a vehicle, another is abducted and held for ransom is a challenging issue. The world is not safe place for our Childs. Recently, the world crime against children is increasing at higher rates and it is high time to offer safety support system for the children going to school. The motivation for this safety device comes from the increasing need for safety for children in current situation as there could be scenarios of the child getting lost in the major crowded areas. The parents are desperate for their child's safety and taking more action for the safety of the child. Taking care of their child and keeping them safe in the current digital world is one of the great challenges.

II. EXISTING SYSTEM

The existing systems are not enough to prevent the crime against children since these systems give information about the children group and not about each child resulting in low assurance about their child safety to parents. It does not concentrate on real-world constraints and intimating the same to the parents. It mainly focuses on the normal location finding method only. This system includes a child module and two receiver modules for getting the information about the missed child on periodical basis. The child module includes ARM7 microcontroller world positioning system (GPS), world system for mobile communication (GSM) and therefore the receiver module includes automaton mobile device in parent's and therefore the alternative as watching info up to the mark area of the varsity. The system only gives the current location and it cannot be tracked using live location tracking. It is not suitable for real-time applications. The power system of these systems was not efficient to produce more results. It only send the latitude and longitude to the mobile terminal.
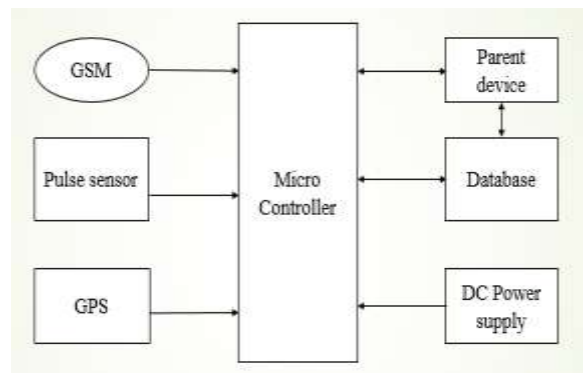
III.SYSTEM DESIGN

Fig 1: Block diagram

The children info is transmitted and received victimisation GSM. The Child module acts as a transmitter which includes Arduino UNO, GSM module, and GPS module and pulse sensor. The receiver module includes mechanical man phone and watching info.

Child module is mounted to each and every kid. The position of the moving child is tracked by GPS and is sent to controller. The Controller forwards the GPS data (latitude & longitude) to GSM board. GSM ready to send the position of the moving child to two receivers. If the child pulse rate is going to the abnormal level, circuit is triggered by Arduino controller and intimation about corresponding child is given through text message to their parents.

IV.HARDWARE SYSTEM DESIGN

A.GPS

GPS (Global Positioning System) is a location detecting device with help of satellite.it point out the children location easily and collect the information from the child module. If child is away from the usual way it automatically report their parent's .And also it manually view the child location. GPS delivers it with high sensitivity and accuracy with low power consumption. It is used as the main module in this system to extract the location of the child.

B.GSM

GSM is a mobile communication device it is one part of this process. It was interface to a GPS and Pulse sensor for both devices based to perform a GSM. The parentscan access to get message from the child module. If there was any problem occur the child it's automatically sense/send their location and pulse rate. The GSM module used in this work is SIM800, which offers all features mentioned above and serves as a medium between transmitter and receiver.

Fig 2: Project Module

C. ARDUINO UNO

Arduino Uno is a micro controller board based on ATmage328P. It has 14 digital input/output pins of which 6 can be used as PWM output and 6 analog inputs, a 16 MHz quartz crystal, a USB connection a power jack and ICSP reader and a RESET button. It has every things required to support to the micro controller. It needs 12 Volts power in system.

D. PULSE SENSOR

The project has been used as a pulse sensor for detecting the child pulse.it is helps to monitor the child pulse changing. Pulse sensors work to gather information from a child module and report the information to parents.

V. SOFTWARE SYSTEM DESIGN
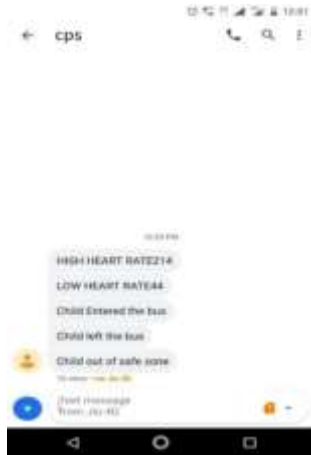
A. ANDROID STUDIO

Android Studio is Android's official IDE. It is purposeful for robot to accelerate your development and assist you build the highest-quality apps for each robot device. Android Studio is that the official IDE for robot application development. Flexible Gradle-based build system. Build variants and multiple apk file generation. Code templates to assist you build common app options. Rich layout editor with support for drag and drop theme written material.

B. OUTPUT AND DESIGN IPLEMENTATION

Child module help of parents in monitoring their children. And Arduino ATmega325 microcontroller gets information from child module and send information to parents over the internet.

Fig 3: Location Tracking

Fig 4: Message Receiving

VI. ADVANTAGES

- Easy to find the current location of the child.
- They can easily checkout the pulse rate of the child.
- The automated system that sends the notification to the parents or supporting community.
- The system that predicts the situation is usual or unusual using pattern.
- Parents can monitor the each and every moment of the child when they want.

VII. CONCLUSION

A Children Tracking System has been successfully implemented. This system is divided into two main subsystems, and the parent app subsystem. The system employs Arduino UNO for the microcontroller system, middleware functionality, GPS for children entering/exiting location, Android and an Android App for parents tracking, and a mobile database to save restricted and school areas. This system proves to provide two main enhancements. First, it improves the GPS accuracy.

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