

Ideation Phase

Literature survey on the selected project & Information Gathering

Team ID	PNT2022TMID09639
Project Name	Project - IoT Based Safety Gadget for Child Safety Monitoring and Notification

INTRODUCTION

Today, parents are working hard and looking after their kids at the same time. Due to the increasing security risks faced by children, both the parents need to monitor their child's activities. It is also difficult for parents to identify their children are being abused. Since to prevent children before being attacked, an autonomous real-time monitoring system is necessary for every child out there.

This system provides the parents with the necessary information about their child's safety using sensors such as their location from GPS, temperature sensor, humidity sensor, pulse rate detection sensor etc. These collected values are used to detect the status of the child and alerts the respective guardians using GSM technology.

LITERATURE SURVEY

1. Employing an efficient Child Tracking System using the Internet of Things

The main concept of this paper talks about the idea of Child Tracking (CT) System for the safety of kids. Our purpose in this work is to track and secure the child at any place, over a command via SMS to communicate between device and parent with the help of GSM module wired to Arduino Mega Board. The proposed system provides the real-time location, child body temperature, environment temperature, humidity of the environment and alarm to the parents so that they can rescue their child from strangers. The proposed CT system combines technologies and sensors to easily monitor the child and get the information. This paper provides the comfort of taking care over the children remotely at an instance of time.

2. Design and development of an IOT based wearable device for the safety and security of women and girl children

The aim of this work is to develop a wearable device for the safety and protection of women and girls. This objective is achieved by the analysis of physiological signals in conjunction with body position. The physiological signals that are analysed are galvanic skin resistance and body temperature. Body position is determined by acquiring raw accelerometer data from a triple axis accelerometer. Acquisition of raw data is then followed by activity recognition which is a process

of employing a specialized machine learning algorithm. Real-time monitoring of data is achieved by wirelessly sending sensor data to an open-source Cloud Platform. Analysis of the data is done on MATLAB simultaneously. This device is programmed to continuously monitor the subject's parameters and take action when any dangerous situation presents itself. It does so by detecting the change in the monitored signals, following which appropriate action is taken by means of sending notifications/alerts to designated individuals

3. Smart Intelligent System for Women and Child Security

This paper surveys about the security system for women and children which allows immediate responses in any harassment in public places, societies etc. Women all over the world are facing unethical physical harassment and Children cannot be left unattended at a social event or outside the home. Our project solves both the problems. A portable device which will have a pressure switch. As soon as an assailant is about to attack the women/child or when they sense any insecurity from a stranger, he/she can then put pressure on the device by squeezing or compressing it. Instantly the pressure sensor senses this pressure and a conventional SMS, with the victim's location will be sent to their parents/guardian cell phone numbers stored in the device while purchasing it, followed by a call. If the call is unanswered for a prolonged time, a call will be redirected to the police and the same message will be sent. The main feature of our system is less response time will be required for helping the victim.

4. RFID-based System for School Children Transportation Safety Enhancement

This paper presents a system to monitor pick-up/drop-off of school children to enhance the safety of children during daily transportation from and to school. The system consists of two main units, a bus unit, and a school unit. The bus unit the system is used to detect when a child boards or leaves the bus. This information is communicated to the school unit that identifies which of the children did not board or leave the bus and issues an alert message accordingly. The system has a developed web-based database-driven application that facilitates its management and provides useful information about the children to authorized personnel. A complete prototype of the proposed system was implemented and tested to validate the system functionality. The results show that the system is promising for daily transportation safety.

EXISTING SYSTEM

Mobile wearable device communication creates new challenges and also covers the short-range. It gives peer-to-peer communication or client-server fashion communication with smartphones, tablets, and gateway nodes. Women safety devices give protection and women themselves want to intimate their dangerous situation by pressing the buzzer in the device. In this, a person with a particular application will receive a woman's current status in a danger situation. The system provides an alert message for the small range and it can be received only through mobile phones. The existing system uses a Wi-Fi module to intimate the parents about their child's condition. Parents can get the personal details of children by giving keywords like Body temperature, location to the concern device.

PROPOSED SYSTEM

After analysing the drawbacks of the existing system, we have proposed a Child Tracking System using sensors and electronic components to detect the child's location. It also gets the details about the child's body temperature, surrounding temperature near the child, humidity of the environment, and if a child is in danger, it creates an alarm to the parents. Using this system, the parent can also create a Geo Fence around a particular location. By continuously checking the child's location notifications will be generated if the child crosses the geofence. Notifications will be sent according to the child's location to their parents or caretakers. The entire location data will be stored in the database.

REFERENCE

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