Ideation Phase
Literature Survey

Date	19 September 2022
Team ID	PNT2022TMID17569
Project Name	**IoT Based Safety Gadget for Child Safety Monitoring and Notification**
Maximum Marks	2 Marks

Abstract:

Child safety and tracking is a major concern as the more number of crimes on children are reported nowadays. With this motivation, a smart IoT device for child safety and tracking is developed to help the parents to locate and monitor their children. The system is developed using Link It ONE board programmed in embedded C and interfaced with temperature, heartbeat, touch sensors and also GPS, GSM & digital camera modules. The novelty of the work is that the system automatically alerts the parent/caretaker by sending SMS, when immediate attention is required for the child during emergency. The parameters such as touch, temperature &heartbeat of the child are used for parametric analysis and results are plotted for the same. The above system ensures the safety and tracking of children.

Advantage

- This research demonstrates Smart IoT device for child safety and tracking helping the parents to locate and monitor their children.
- If any abnormal values are read by the sensor then an SMS is sent to the parents mobile and an MMS indicating an image captured by the serial camera is also sent.
- The future scope of the work is to implement the IoT device which ensures the complete solution for child safety problems.

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Disadvantage;

- The child could not produce the exact alert command during a panic condition.
- The command produced may not match with the previously stored command.
- This project Requires manual intervention.

Reference:

1. Starner, T Schiele, B and Pentland, A. (1998) 'Visual contextual awareness in wearable computing', Second International Symposium on Wearable Computers, Pittsburgh, PA, IEEE Computer Society, pp. 50-57.

2. AkashMoodbidri, Hamid Shahnasser (Jan 2017) 'Child safety wearable device', International Journal for Research in Applied Science & Engineering Technology, Vol. 6 Issue II, IEEE, pp. 438-444.

3. AsmitaPawar, PratikshaSagare, TejalSasane, KiranShinde (March– 2017) 'Smart security solution for women and children safety based on GPS using IOT', International Journal of Recent Innovation in Engineering and Research, vol. 02, Issue. 03, pp.85-94.

4. Nitishree, (May-June, 2016) 'A Review on IOT Based Smart GPS Device for Child and Women Safety', International Journal of Engineering Research and General Science, Vol.4, Issue. 3, pp. 159- 164.

5. Kok Sun Wong, Wei Lun Ng, Jin Hui Chong, CheeKyun Ng, AduwatiSali, Nor KamariahNoordin, (15 -17)December 2009) 'GPS Based Child Care System using RSSI Technique', Proceedings of the Malaysia International Conference on Communications. pp. 899-904.

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Abstract :

This paper is mainly streamed towards child safety solutions by developing a gadget which can be tracked via its GPS locations and also a panic button on gadget is provided to alert the parent via GSM module calling for help. Parental android app is developed to manage and track the device anytime. Smart gadget device is always connected to parental phone which can receive and make phone calls and also receive SMS on gadget via GSM module, also a wireless technology is implemented on device which is useful to bound the device within a region of monitoring range, if device is moving out of monitoring range then an alert will be triggered on binding gadget, this helps you keep a virtual eye on child. Health monitoring system on gadget checking for parameters like heart beat/pulse rate and temperature is included which can be monitored on parental app. Gadget also monitors whether it is plugged on hand or not using contact switch and alert the parent as soon as it is unplugged.

Advantages;

- The advantages of smart phones which offers rich features like Google maps, GPS, SMS etc.
- Safety gadget contains a GPS module which will fetch the current location and sends it to the microcontroller for required processing.
- The safety gadget is also installed with the GSM module to respond for location request sent via SMS from parental phone.

Disadvantages:

- This device cannot be used in rural areas.

Literature survey

[1] Authors: M Nandini Priyanka, S Murugan, K. N. H. Srinivas, T. D. S. Sarveswararao, E. Kusuma

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Kumari.

Title: Smart IoT Device for Child Safety and Tracking.
Published in: 2019 IEEE.

The system is developed using Link-It ONE board programmed in embedded C and interfaced with temperature, heartbeat, touch sensors and also GPS, GSM & digital camera modules. The novelty of the work is that the system automatically alerts the parent/caretaker by sending SMS, when immediate attention is required for the child during emergency.

Merits:

The parameters such as touch, temperature & heartbeat of the child are used for parametric analysis and results are plotted for the same.

Demerits:

To implement the IoT device which ensures the complete solution for child safety problems.

[2] Authors: Akash Moodbidri, Hamid Shahnasser
Title: Child safety wearable device.
Published in: 2017 IEEE.

The purpose of this device is to help the parents to locate their children with ease. At the moment there are many wearable's in the market which helps to track the daily activity of children and also helps to find the child using Wi-Fi and Bluetooth services present on the device.

Merits:

This wearable over other wearable is that it can be used in any phone and it is not necessary that an expensive smartphone is required and doesn't want to be very tech savvy individual to operate.

Demerits:

As, this device's battery gives short life-time. High power efficient model will have to be used which can be capable of giving the battery life for a longer time.