IoT Based Safety Gadget for Child Safety Monitoring & Notification

Literature Survey

Ideation Phase

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Team ID	PNT2022TMID43472
Project Name	IOT BASED SAFETY GADGET FOR CHILD SAFETY MONITORING & NOTIFICATION
Maximum Marks	4 Marks

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Paper 1: Smart IOT Device for Child Safety and Tracking

Child safety and tracking is a major concern as the 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 LinkIt 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 an 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.

Paper 2: Child Safety Monitoring System Based on IoT

The overall percentage of child abusements filed nowadays in the world is about 80%, out of which 74% are girl children and the rest are boys. For every 40 seconds, a child goes missing in this world. Children are the backbone of one's nation, if the future of children was affected, it would impact the entire growth of that nation. Due to the abusements, the emotional and mental stability of the children gets affected which in turn ruins their career and future. These innocent children are not responsible for what happens to them. So, parents are responsible for taking care of their own children. But, due to economic conditions and the aim to focus on their child's future and career, parents are forced to crave for money. Hence, it becomes difficult to cling on to their children all the time. In our system, we provide an environment where this problem can be resolved in an efficient manner. It allows parents to easily monitor their children in real time just

like staying beside them as well as focusing on their own career without any manual intervention. .

Paper 3: IoT-based Child Security Monitoring System

Nowadays, the crime rate associated with children keeps increasing due to which draws peoples' attention regarding child safety. This research is conducted to propose a child security smart band utilizing IoT technology. Online questionnaires and semi-structured interviews are methodologies used to collect data. The online questionnaire gains feedback by sending questions electronically, where answers need to be submitted online. In the semi structured interview, researchers meet and ask respondents

predetermined questions while others being asked are not planned in advance. Through information obtained, a smart band has been proposed to monitor the safety of children. By this, parents know what is happening remotely and can take actions if something goes wrong. The future improvements of this device will be adding functions and software to make it works like a phone such as messaging, gallery, Google, YouTube, meanwhile, adding more child security features so that child safety is guaranteed.

Paper 4: IoT Based Smart Gadget for Child Safety and Tracking

This paper is mainly streamed towards child safety solutions by developing a gadget which can be trackedvia 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 analert 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 by hand or not using contact switch and alert the parent as soon as it is unplugged.

[1] https://www.ijitee.org/wp-content/uploads/papers/v8i8/H6836068819.pdfChild Safety and Monitering Syestem

Pros:

The Safety wearable device consists of various IOT sensors that provide information about parameters like temperature, UV, location etc. and the values recorded by these sensors are stored on the cloud. In summary, the parents or guardians will be alerted if abnormal values are read by thesensor or if values on these sensors cross a given threshold value, alerting them that the child could be in danger. This helps the parents to locate and monitor their child's safety.

Cons: This easy acces can be really dangerous for kids.Who don't have an idea which information isappropriate or not.

[2] https://iopscience.iop.org/article/10.1088/1742-6596/1362/1/012012/pdf Child Safety Monitoring System Based on IoT

Pros:

we automatically monitor the child in real time using Internet of Things, with the help of GPS, GSM, and Raspberry Pi. This system requires network connectivity, satellite communication, and high- speed data connection when we use web camera and GPS to lively monitor. It is difficult to monitor when there occurs any hindrance to satellite communication or any network issue. There also occurstime delay in video streaming through the server. Hence in the future, these issues can be overcomeby using Zigbee concept or accessing the system without internet and using high-speed server transmission.

Cons:

Gadgets release a from of radiation referred to as electro magnetic frequency(EMF),Which has beencited as a form of carcinogen-a substance capable of causing in living tissue.
https://www.researchgate.net/publicat/354877554_ IoT-based_Child_Security_Monitoring_System

Pros:

child safety issues and the need of using child security system. Some previous studies have been included for designing the IoT-based child security smart band. It assists parents to monitor their children remotely. In case situations happen, notifications will be sent to parents.

Cons:

Higher Cost(Time and Money).

[3] https://www.slideserve.com/eldon/child-safety-monitoring-systemchild safety monitoring system iot based

Pros:

Easy availability and affordability,Tracking of missing kids can be made easily,High dataAccuracy,High Realiablity,Effieiency.

Cons:

Technical Complexity,Highly debendent on the Internet.

[4] https://patents.google.com/patent/US20170169688A1/en Internet of things (iot) child tracking system

Pros:

a monitor to provide instructions to parents for registering and de-registering children with the security system; an input device to receive input from the parents during a registration process and a de-registration process to register and de-register the children, respectively; a camera to capture aphoto of a child to be registered with the security system; an IoT hub to establish a first set of local wireless communication channels with the IoT devices of the security bracelets, the IoT hub to further provide connectivity among each of the kiosks through a second set of one or more communication channels; the IoT hub to associate the photo of the child with an IoT device of a security bracelet provided to the child, the association being stored in one or more of the kiosks or in a network service; an IoT device of an attachable security device to transmit a first alarm to a first kiosk responsive to the switch triggering upon detachment of the attachable security device; the firstkiosk to communicate the first alarm with other kiosks and the plurality of kiosks to display the photo.

Cons:

Security and privacy,keeping the data gathered and transmittend by iot device is not safe.