SAFETY GADGET FOR CHILD SAFETY MONITORING AND NOTIFICATION

LITERATURE SURVEY:

Internet of Things (IoT) plays a major role in every day to day life. The major difference between IoT and embedded system is that a dedicated protocol/software is embedded in the chip in case of embedded system, whereas, IoT devices are smart devices, which are able to take decisions by sensing the environment around the device. The development of sensors technology, availability of internet connected devices.Data analysis algorithms make IoT devices to act smart in emergency situations without human interventions. So, IoT devices are applied in different fields such as agriculture, medical, industrial, security and communication applications. IoT systems are useful within a system to do deeper automation, analysis, and integration. IoT contributes to technology by advances in software, hardware and modern tools. It even uses existing and upcoming technology in the fields of sensing, networking and robotics. IoT brings global changes by its advanced elements in the social, economic, and political impact of the users. Child and women safety is a challenging problem nowadays due to antisocial elements in the society. The crime rate is day by day increasing. Schools and working places need high surveillance for ensuring the safety among children and women. Smart phones are playing major role for ensuring the safety, where some mobile based applications provide alert systems.During the emergency, mobile apps alert the control room of nearby police station or caretakers of children. The literature shows that location tracking devices are available in the market but it does not provide the complete solution to the problem. The solution to this problem is to design an IoT device, which senses the child's location and environment and during emergency, it should send the alert to the parents automatically[1].

Research methodology, a method for identifying, collecting, processing and interpreting data using some techniques, then drawing conclusions to address the problem. It is a significant section since it allows readers to evaluate overall validity and reliability of the research paper . For this research, online questionnaire and semi-structured interview are employed. Online questionnaire serves as quantitative research to measure users' attitude, behavior and factors influencing their acceptance towards the child security system. After that, a semi-structured interview is conducted as qualitative research helping in understanding trends, users' preferences, opinions and thoughts about current

condition and IoT-based child security system .Besides, 50 parents nursing one or more children at most 12 years old are participating in this research. The data gathered will be used to prove the severity of current situation and the need to use IoT-based child security system. Besides, the results offered are affordable and usable. Since the respondents are properly chosen, the results tend to be more accurate, precise and reliable. On top of that, quota sampling is faster and easier to conduct as it does not require a sampling frame and strict use of random sampling technique [2].

The IOT is applicable in many areas some of them are listed below,

- Smart creatures
- Smart connected buildings
- Connected factory
- Connected roadways
- Smart phones

In our project IOT plays a major role which sense the child's and women's every activity and alert to guardians. IOT sensor detects the child or women crying, heartbeat, temperature and alerts the guardians through SMS,mail and buzzer for the surrounding people. The camera captures the child and women's activities when in danger or panic situations. The components and internet of things is controlled by micro controller. We are using PIC 16F877A micro controller to control over all system and IOT. RPI3(Raspberry Pi 3) is used to connect to internet of things, sounds, buzzer, mail, SMS, emergency switch, mode switch. All these things are connected to battery to supply the power. RPI is credit card sized computer that plugins into a computer monitor or TV, and uses a standard keyboard and mouse. It is a capable little device that enables people of all ages to explore computing, and to learn how to program in languages like python, C. IOT is used for smart city and smart home to benefit the people. Smart automation method is implemented in this project to get alerts of women and child's activities and for the purpose of security through IOT developed[3].

The children point of view GPS, GPRS and GSM are used to monitor the speed and location tracking purpose. The system is fixed on the bus or car or in any vehicle so that the vehicle is going on routine route or not can be identified by the GPS tracker, the speed of the bus can also be extracted. Now-a-days the digital technology plays a major role for connecting persons via internet. For tracking the children, the android based solution is provided to parents. Internet is the one that will connects different components through a single device and is connected to server. In day to day scenario, missing child cases are increasing gradually. Child caring is a major issue. Different types of methods are introduced to find good solutions. There have been many Methods and systems implemented to solve it. In to solve child caring problem global position system (GPS) based solution with two nodes was proposed. In these two nodes, one node is child node which contains a Bluetooth module and a GPS receiver. The parent node consists of a mobile that supports Bluetooth. The location of thechild can be tracked by the GPS technology and can be displayed on the designed map in the mobile device, through the Bluetooth connection the distance between the child and parent can be calculated[4].

The platform on which this project will be implemented is the PIC16F77A microcontroller board that performs the conversion of analog signals to digital values. Thus, the controller acts as an analog to digital converter (ADC). The digital values are fed to raspberry pi and the functions of transmitting and receiving SMS, is provided by GSM Module using GSM network. Additional modules employed will provide current location of child and women in terms of latitude and longitude on the google maps that is sent to the guardians via SMS thereby providing maximum accuracy . In the scenario, a lost child or women in danger sends a predefined keyword as SMS to the wearable device which alerts by sending location to designated individual. Additionally, the wearable equipped with distress alarm buzzer which sets to active when the sensors value goes abnormal. Hence the buzzer is louder enough and can be heard by the people nearby from a substantial distance. The proposed wearable device in the form of wrist band will be communicating with the guardians via SMS through GSM which ensures secure and reliable communication link. Customization of wearable can be achieved as per our requirements by reprogramming the PIC system. With aid of GSM module, current location of child or women can be detected accurately in a short span of time . Predefined values in the sensors can monitor minimal health condition of child of child in order to take immediate

action when the values increase above the threshold. . To prevent an individual from drooping, we have accelerometer that determines the change in body position of child.In Panic situation of child or women the device notifies parent or guardian revealing child's or women's distress. The size of components used in the project can be decreased by a process called micro fabrication, so that it can be transformed into a wristwatch. Emergency calling feature can be incorporated wherein women or child under panic circumstances can contact police for assistance.SMS can be sent to more than one individual.The size of components used in the project can be decreased by a process called micro fabrication, so that it can be transformed into a wristwatch.Emergency calling feature can be incorporated wherein women or child under panic circumstances can contact police for assistance.SMS can be sent to more than one individual.To save time and reduce crimes happening we are developing smart child and adult security system which is wearable. This helps guardians to locate their children and women faster and precisely using internet of things. The present work reduces the human effort and particularly mother's stresses in working times about child. The device affords above scope for modifications for further improvements and operational efficiency, which should make it commercially available and attractive[5].

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