Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	03October 2022
Team ID	PNT2022TMID23100
Project Name	Project – IOT BASED SAFETY GADGET FOR CHILD SAFETY MONITORING AND NOTIFICATION
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Interfacing with hardware	Interface the sensors with the software application so as to alert the users in case of any change in the child safety measures.
FR-4	Database Connection	Database are retrieved from IBM cloudant
FR-5	Mobile Application	Alarm and buzzer can be accessed from the mobile app

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	• With the rapid development of urbanization and industrialization, more and more children are having safety children.In order to overcome the challenges,we design a child safety monitoring system where children can be warned about potential risks,and their guardians can be informed of location or activity abnormalities.A child safety monitoring system allows the parent to locate and monitor their children.This system is applicable in crowded places,keeps them in safety zone.
NFR-2	**Security**	• The parents feels that this device can lead to a safer community.

		• It ensure safety from stangers and other hazardous activity. • Working parents can monitor their childs health,location. • It will be useful for working parent's community by increasing safety of their child as well as their carrier.
NFR-3	**Reliability**	• This system provides communication between parent and child. • It provides parents with the real time location,heart beat along with distress alarm buzzer for their child's surroundings and the ability to locate their child or alert bystanders in acting to rescue or comfort the child. • The application keeps track of the child periodically and updates the status of child to the user. • Thus the parents are always kept aware of their child constantly.
NFR-4	**Performance**	• Improved safety index of children • Easy availability and affordability • Tracking made easier • Freedom for children with special needs • Guarantee peace of mind to parents.
NFR-5	**Availability**	• ATmega328p microcontroller that contains the real time accurate location of the child by GPS module and will also provide the surrounding temperature, humidity and also the heartbeat of a child by sensors. • The secondary measure implemented was using a bright SOS light and distress alarm buzzer present on the wearable device which when activated by the parents via SMS text should display the SOS signal brightly and sound an alarm which a bystander can easily spot as a sign of distress. • The sensors are activated automatically when they are subjective to the miscellaneous activities . • If any problem occurs it would alert parents through the cell phone so that they can take immediate action. • The parent can get to the kid data intermittently by interfacing through this gadget. • The data is stored into a cloud permanently to keep the track record of old data of the children for further reference. • This device focus on the SMS text enabled communication.

NFR-6	**Scalability**	• The security and safety of the child is increased than earlier. • The privacy of end user is protected as it can support only mutual authentication. • Location determination protocol can support better scalability. • The communication and computational cost are low.