

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

Date	03 October 2022
Team ID	PNT2022TMID34911
Project Name	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 login	Register through google Register through mobile number Registration through Gmail
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Geofence	After login process, user should set the geofence limit.
FR-4	Notification and alarm	Notifications will be sent through messages, if the child crosses the geofence limit, and if the child faces any problem they can notify their parents.
FR-5	Google map	Google map is the essential one for tracking and to find the location of the child.
FR-6	Hardware requirements	<ul style="list-style-type: none">• Internet connectivity• GPS tracker• Smartphone• Arduino
FR-7	Software requirements	<ul style="list-style-type: none">• Application• Python• Geofence• Node red• Cloudant DB• Web UI• IBM Watson IOT Platform
FR-8	Other requirements	<ul style="list-style-type: none">• IBM cloud login• Chrome extension features

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Child tracking safety gadget is used to track the location of the child. The GPS Tracker is attached to the device which cannot be viewed by an unknown

		<p>person. It continuously tracks and monitor the child's location 24/7 and provides instant alert to the parents when the child crosses the geofence limit assigned by the parents in the form of alarm. If the child crosses the geofence notification will be sent to the parents through message. The children can also initiate emergency call in case of any unsafe situations.</p>
NFR-2	Security	<p>Parents are very much concerned about the security of their children each and every second they are far away from them. The busy and stressful lives we lead make it difficult to follow and keep a track on the kids. Even by keeping an eye on the child there is a possibility of losing the child. This issue can be solved by using this safety gadget. This child tracking device ensures the safety of the child.</p>
NFR-3	Reliability	<p>Nowadays, it is not very much safe to leave the kids in the neighbours house or relatives house to be looked after. This device is very reliable and safe. It monitors each and every movement of the child and sends the data to the parents for their observation. The use of this device cannot be found by any strangers.</p>
NFR-4	Performance	<p>This device functions very effective. It keeps a track on the child and if it senses any unsafe situation it sends instantaneous notifications and alerts to the parents through the app and share the location of the child within few seconds. It can track even long distances. It can be recharged and used again. The performance of this app can be given rating.</p>
NFR-5	Availability	<p>The device should be affordable to all. It is directly sold to the parents. It can be purchased either from the market or through online marketing. The device will be sold to the child care centres.</p>
NFR-6	Scalability	<ul style="list-style-type: none"> ➤ The device is simple and compact. ➤ It is easy to accessible by any user. ➤ It has less weight and can be carried by the user anywhere and whenever it is necessary. ➤ It is very much useful for the working parents who can't always take care of their children with special care. ➤ It is also very helpful for monitoring activities of the disabled children. ➤ The activities of the child can be viewed at any time by the parents because the activities will be stored in the cloud.