Project Design Phase-II

**Solution Requirements(Functional & Non Functional)**

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| Date | 17 October 2022 |
| Team ID | PNT2022TMID51128 |
| 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.

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Registration | * Signing up with Gmail * Using a phone number to register |
| FR-2 | User Confirmation | * Email confirmation required * Reassurance via OTP |
| FR-3 | App installation | * Installing through link * Installing via the Play Store |
| FR-4 | Settings geofence | * Sending by user to locate child |
| FR-5 | Detecting child location | * App-based location detection * SMS location detection |
| FR-6 | User Interface | * User Login Form. * Admin Login Form. | |
| FR-7 | Database | * Cloud storage for constant connectivity. * The location and distance data from children's and parents' mobile devices are linked here. * Parent ID, child ID, distance, longitude, latitude, etc. are among the values. | |

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| **FR No.** | **Functional Requirement** | **Sub Requirement** |
| FR-8 | Server | * It links the front-end application and the database. * The backend server is installed on an IBM cloud instance and is designed to operate as a service. * The backend server is installed on an IBM cloud instance and is designed to operate as a service. |
| FR-9 | GPS tracking | * The system is equipped with a GPS module that collects the user's location data and stores it in a database. |
| FR-10 | API | * Using an API, the collected value is added to the database. |
| FR-11 | React JS | * For our project, the front end is built using react js. * We are using node js on the back end. |
| FR-12 | GPS modules | * It directly receives data from satellites. |

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| FR-13 | Battery Life | * The device will still function if the youngster or parent forgets to charge it for an entire day. Because of this, we want this device to operate continuously from a single battery. * It should be long-lasting. |
| FR-14 | Location on History | * The location history will make it easier to keep tabs on the child's whereabouts so that the system can be updated. For 30 days, the location history will be available. * For instance, if a youngster goes missing, parents can use location data to trace down their child's whereabouts and activities. |

# Non-functional Requirements:

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

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| **FR No.** | **Non-functional Requirements** | **Description** |
| NFR-1 | Usability | * Devices with GSM capabilities can assist in alerting parents or other family members of the child's existing circumstances and delivering the information quickly in order to save the child. |
| NFR-2 | Security | * With the help of a function on our smartphone called Geo-Fence, parents can feel more certain about the safety of their children. * Your phone will immediately notify you whenever your youngster enters or leaves that area. |
| NFR-3 | Reliability | * Portable * Easy to use * Flexibility |

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| NFR-4 | Performance | * Create a child tracker to assist parents in tracking the whereabouts of their children at all times. * The child's parents or other caregivers will receive the no-fication in accordance with their location. * The database will contain all of the location information. |
| NFR-5 | Availability | * Even in a crowd, keep an eye on your child. * Get children's travel information at any time * Recognize your present location |
| NFR-6 | Scalability | * The use of a gadget ensures the children's security and monitoring. * Parents don't need to be concerned about their kids. |
| NFR-7 | Valuability | * The system should be able to send the finance authority a timely delivery. The answer should be "advancing the mission" in the case of nonprofit organisations. |
| NFR-8 | Dynamicity | * IoT devices might be able to modify and adapt dynamically in response to their environment |
| NFR-9 | Desirability | * It should be simple to navigate. * The user should be able to easily search for and find the information he needs. |