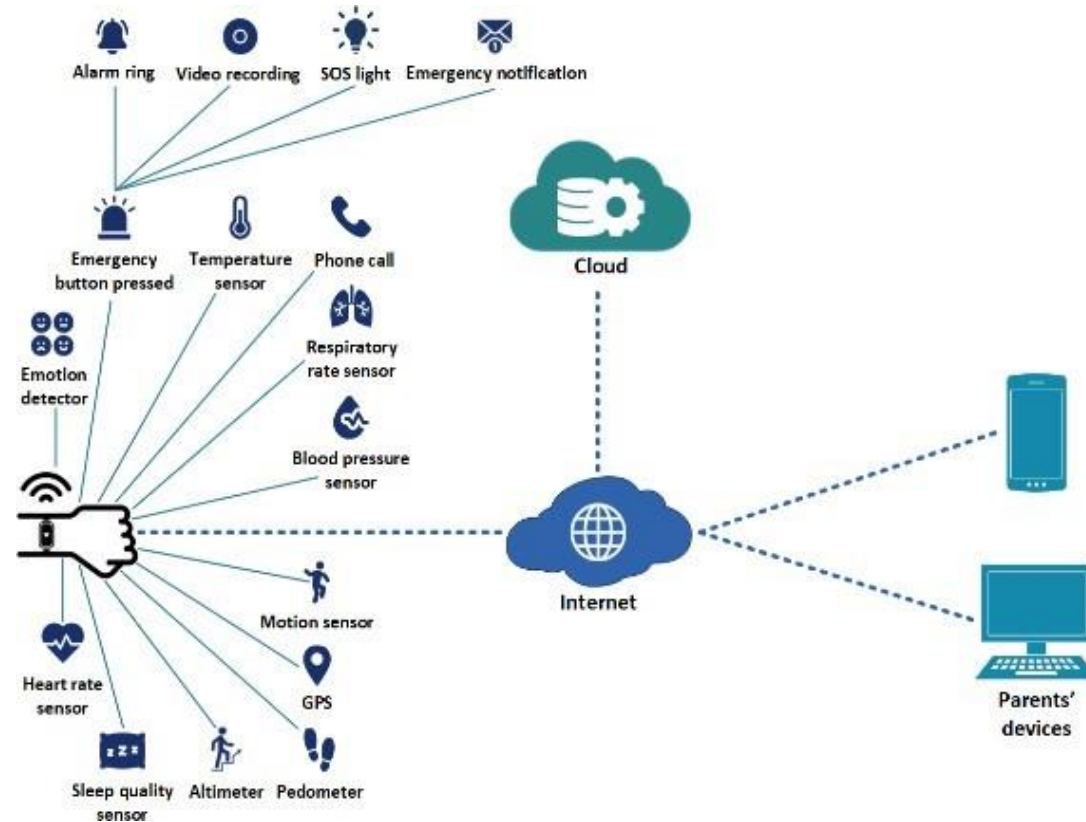


## Project Design Phase-II Technology Stack (Architecture & Stack)

Date	15 October 2022
Team ID	PNT2022TMID14424
Project Name	IoT Based Safety Gadget for Child Safety Monitoring and Notification
Maximum Marks	4 Marks

### Technical Architecture:



- In fact, Development of a safety gadget for children to ensure their protection without direct monitoring of the parents which includes various features such as GPS, Blood pressure sensor, Temperature sensor, Emergency alert etc.
- The IoT-enabled digital architecture integrates the Cloud, Mobile and GPS technology to precisely locate the geographical location of a child.
- In GPS, the enrolled device will get alert message or alerts when the device detect activities outside the specified geo fence.If any risk is felt, additional features like notification could be performed.
- In case of emergency, the alarm and SOS light will be activated by parents through their devices.
- The collection of data will be sent to the cloud over the internet for security process, analyze, monitor, store, access and retrieve data remotely.
- After that, the information indicating children's status, along within the range of reference value, notification and some suggestions will be sent to parent's devices.

**Table-1 : Components & Technologies:**

S.No	Component	Description	Technology
1.	User Interface	User interacts with application through the mobile app	HTML, CSS, JavaScript
2.	Application Logic-1	Logic for a process in the application is to monitor the location using GPS	Python
3.	Application Logic-2	Logic for a process in the application is to monitor the health status using sensor	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application is to store the regular database of child in cloud	IBM Watson Assistant
5.	Database	Data Type	MySQL, NoSQL, etc.

6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application is to get the location	IBM Weather API
9.	External API-2	Purpose of External API used in the application for login purpose	Aadhar API
10.	IoT Gateway device	Purpose of IoT Gateway device is to monitor and maintain the records	GPS and sensors
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, IBM Cloud, Firebase

**Table-2: Application Characteristics:**

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Open stack, Github, Arduino IDE.Arduino is open source electronics platform to build hardware and software	Arduino IDE, Internet hosting service for software development and version control using Git
2.	Security Implementations	Web Application Firewall(WAF),HTTP Connections	AWS WAF, CloudflareWAF
3.	Scalable Architecture	By building articles and authors into a single query, the volume of queries can be reduced.	IBM SQL
4.	Availability	The load balancer intelligently routes client requests to the right server that maximizes performance and capacity utilization	Web server, Load balancer
5.	Performance	Caching, Asynchronous conditions	Cloud, Cache memory