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

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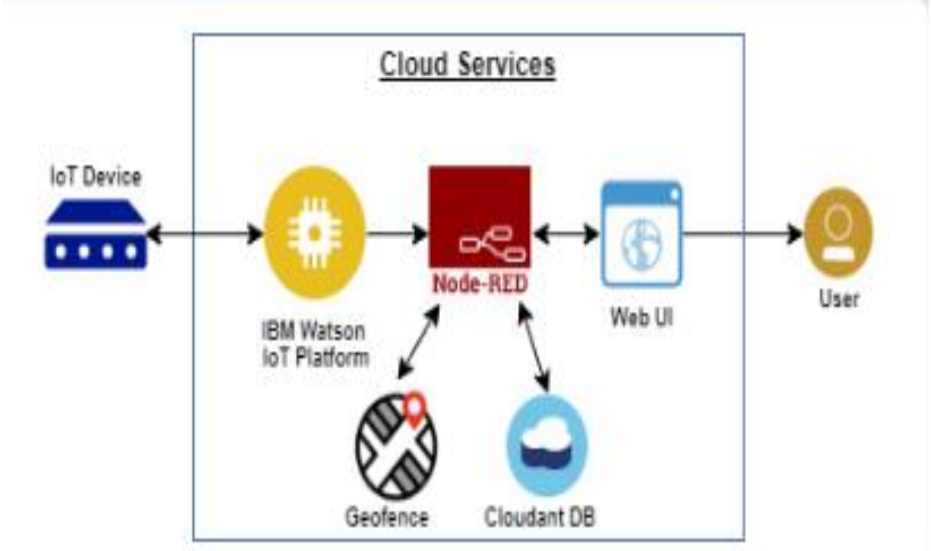
|---|---|
| Date | 17 October 2022 |
| Team ID | PNT2022TMID51128 |
| Project Name | Project - IoT Based Safety Gadget for Child Safety Monitoring and Notification |
| Maximum Marks | 4 Marks |

**TECHNICAL ARCHITECTURE:**




**Guidelines:**

- Include all the processes (As an application logic Technology Block)
- Provide infrastructural demarcation (Local /Cloud)
- Indicate exteral interfaces (third party API's etc.)
- Indicate Data Storage components /services
- Indicate interface to machine Learning models (if applicable)

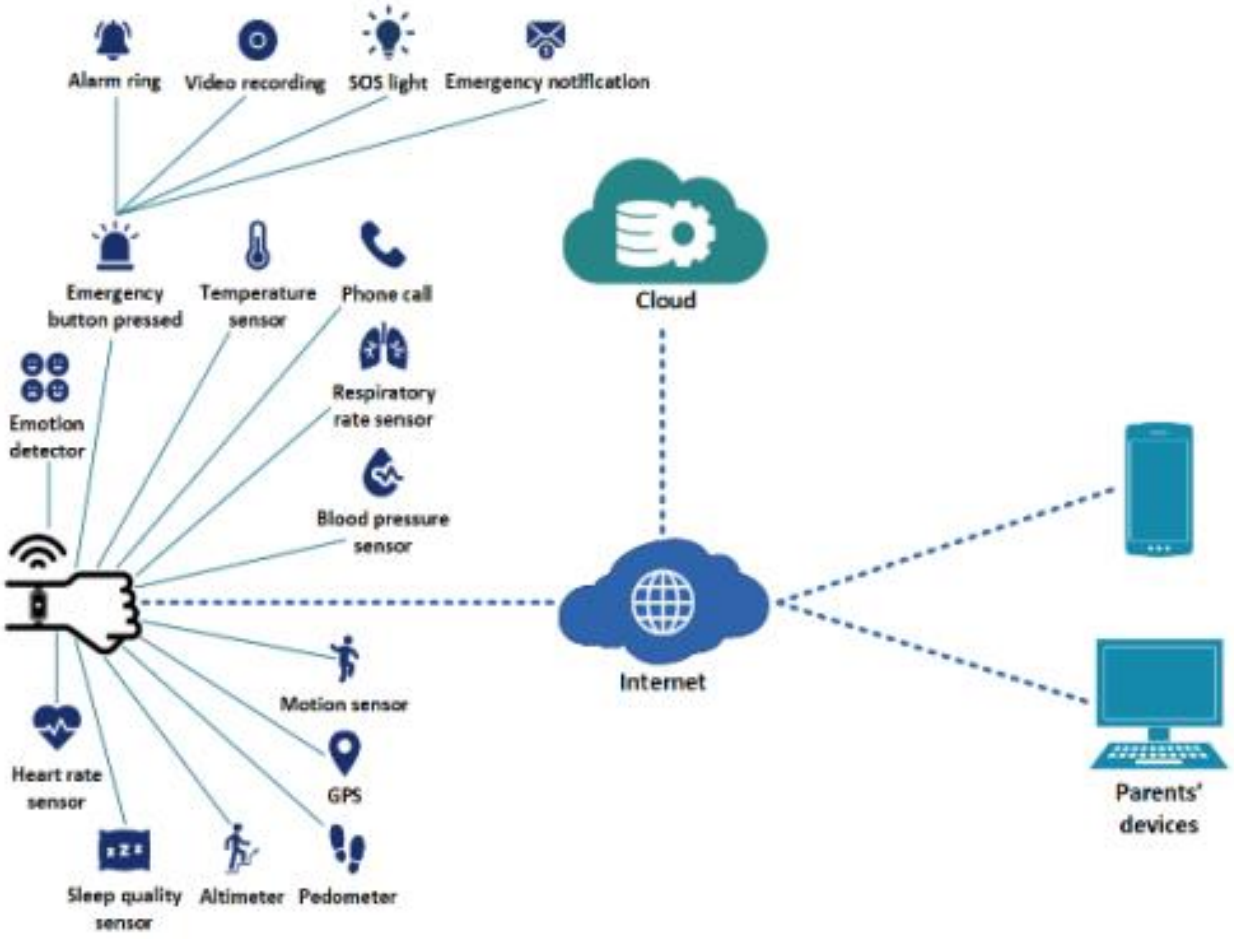

Alarm ring
Video recording
SOS light
Emergency notification
Emergency button pressed
Temperature sensor
Phone call
Cloud
Emotion detector
Respiratory rate sensor
Blood pressure sensor
Internet
Motion sensor
Heart rate sensor
GPS
Sleep quality sensor
Altimeter
Pedometer
Parents' devices

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

| S.No | COMPONENTS | DESCRIPTION | TECHNOLOGY |
|---|---|---|---|
| 1. | User Interface | Web UI, Mobile App, Chatbot etc. | HTML, CSS, JavaScript / Angular Js / React Js etc. |
| 2. | Application Logic-1 | Logic for a process in the application | Java / Python |
| 3. | Application Logic-2 | Logic for a process in the application | IBM Watson STT service |
| 4. | Application Logic-3 | Logic for a process in the application | IBM Watson Assistant |
| 5. | Database | Data Type, Configurations etc. | 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 | IBM Weather API, etc. |
| 9. | External API-2 | Purpose of External API used in the application | Aadhar API, etc. |
| 10. | Machine Learning Model | Purpose of Machine Learning Model | Object Recognition Model, etc. |
| 11. | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud<br>Local Server Configuration: | Local, Cloud Foundry, Kubernetes, etc. |

**Table-2: Application Characteristics:**

| S.No | CHARACTERISTICS | DESCRIPTION | TECHNOLOGY |
|---|---|---|---|
| 1. | Open-Source Frameworks | • The term "Internet of Things System" (loT) refers to a collection of hardware and software that is permanently connected to the Internet using real-world sensors and actuators. | Internet of Things. |
| 2. | Security Implementations | • We can use sensors to determine the child's temperature and heartbeat.<br>• We can use the GPS and GSM to track the live location. | Sensing technology. |
| 3. | Scalable Architecture | • The IoT concept, kid safety concerns, and the necessity of implementing child security systems are all properly addressed.<br>• Both child safety and the crime rate can be improved. | Internet of Things. |
| 4. | Availability | • This system was created utilising a board with embedded C programming that interfaced with temperature and heartbeat. | Microchip technology |
| 5. | Performance | • The work is unusual in that the system automatically notifies the parent or caregiver by SMS when the child is in need of quick attention in an emergency. | Infrared temperature sensor. |