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

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|---|---|
| Date | 07 November 2022 |
| Team ID | PNT2022TMID04073 |
| Project Name | Project - IoT Based Safety Gadget for Child Safety Monitoring and Notification |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

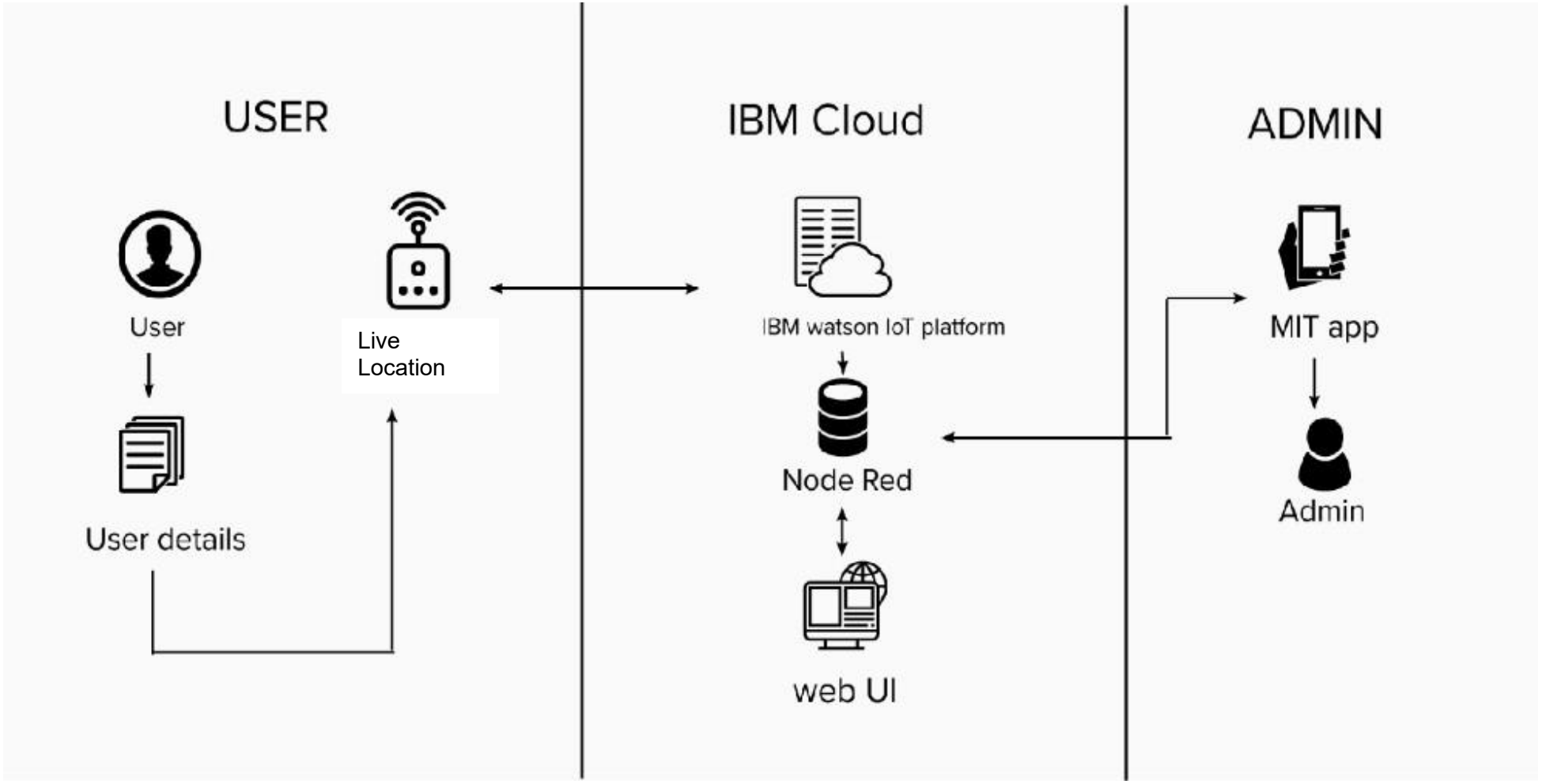
USER
IBM Cloud
ADMIN
User
Live
Location
IBM watson IoT platform
MIT app
User details
Node Red
Admin
web UI

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

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | User Interface | How user interacts with application e.g.Web UI, Mobile App, Chatbot etc. | HTML, CSS, JavaScript / Angular JS / React JS, Node Red, Android Studios etc. |
| 2. | Application Logic-1 | Logic for a process in the application | 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 File system |
| 8. | External API-1 | Purpose of External API used in the application | IBM GPS API, etc. |
| 9. | External API-2 | Purpose of External API used in the application | Mobile number API, etc. |
| 10. | Modules | Modules required for the system | WIFI module, GPS module |
| 11. | Sensors | Sensors required for the system | LM 75 Temperature sensor & MAX30102 Heart rate Sensor |
| 12. | Wearable device | Wearable device for the child | Wear OS by Google |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | List the open-source frameworks used | Python and Node Red |
| 2. | Security Implementations | List all the security / access controls implemented,use of firewalls etc. | 256-bit AES algorithm |
| 3. | Scalable Architecture | Justify the scalability of architecture (3 – tier,Micro-services) | High accuracy GPS, temperature &heart rate sensors |
| 4. | Availability | Justify the availability of application (e.g., use of load balancers, distributed servers etc.) | Low-cost device, High battery life,User-friendly application |
| 5. | Performance | When a child is facing an emergency, device button should be pressed so that the device captures the image along with the user information to the enrolled mobile numbers | GSM tracker,High Durable Device Battery |