

Project Design Phase-II Technology Architecture

| | |
|---------------|---|
| Date | 15 October 2022 |
| Team ID | PNT2022TMID19670 |
| Project Name | Hazardous Area Monitoring for Industrial Plant powered by IoT |
| Maximum Marks | 4 Marks |

Technical Architecture:

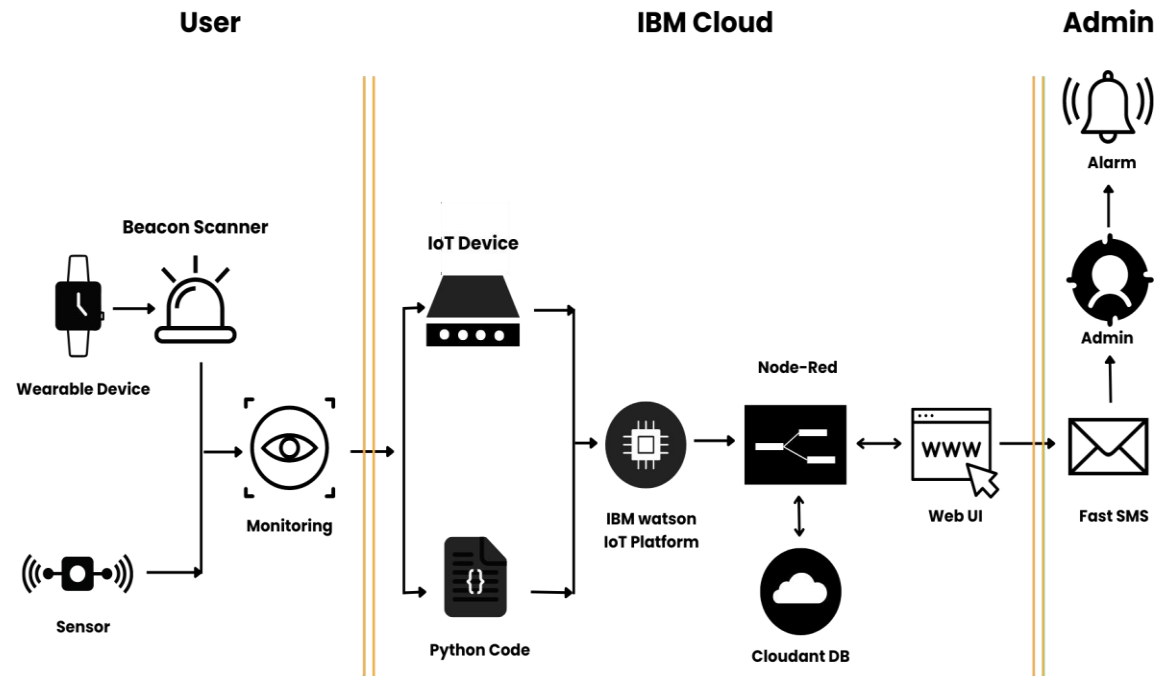


Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|------|---------------------------------|---|------------------------------|
| 1. | User Interface | Web UI, Mobile App | HTML, CSS, JavaScript |
| 2. | Application Logic-1 | Mobile App to monitor the environment parameter | Python |
| 3. | Application Logic-2 | Beacon Scanner to get the workers body condition | IBM Watson IoT API Call data |
| 4. | Application Logic-3 | Convert or combine the environment parameters and workers body condition. | IBM Watson Assistant |
| 5. | Database | Values must be in Integer and float | MySQL. |
| 6. | Cloud Database | Call the data IBM Cloudant is used and user login credentials | IBM DB2, IBM Cloudant |
| 7. | File Storage | App code and IoT credentials are stored and API keys | IBM Block Storage |
| 8. | External API-1 | To monitor the environment parameters | IBM Weather API |
| 9. | External API-2 | To get the login credentials in IBM DB2 | Username and Password API |
| 10. | Machine Learning Model | There is any deviation from the parameter range, Admin got the alert message. | Object Recognition Model |
| 11. | Infrastructure (Server / Cloud) | To host the server and application | Cloud Foundry, Node Red |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|------|--------------------------|--|-------------------------|
| 1. | Open-Source Frameworks | To develop the application interface, we use MIT App Inventor | MIT APP Inventor |
| 2. | Security Implementations | To secure the users login credentials and personal information | SHA-256, OWASP |
| 3. | Scalable Architecture | To scale the application database | IBM Auto scaling |
| 4. | Availability | To make use the application and data are available 24/7 | IBM Cloud load balancer |
| 5. | Performance | To increase the performance the application in hosted in the high-performance instance | IBM instance |