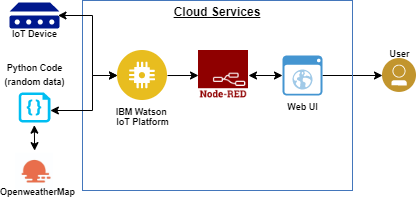
**Project Design Phase - II Technology Stack ( Architecture & Stack )**

|  |  |
| --- | --- |
| Date | 15 October 2022 |
| Team ID | PNT2022TMID24784 |
| Project Name | Project - Signs with smart connectivity for Better road safety |
| Maximum Marks | 4 Marks |

**Signs with smart connectivity for Better road safety**

**Technical Architecture**



* To override the static traffic signs, use the smart sign indicator boards. These connected smart signs use the Weather API to get speed limits from the web app and update automatically Depending on the weather, the speed may increase or decrease and the signs are posted depending on traffic and life-threatening situations. Orientation (schools), warning and service (hospitals, restaurants) signs are displayed accordingly Different operating modes can be selected using buttons)
* The IBM Watson IoT Platform acts as a intermediate to connect web applications to IoT devices, hence the creation of the IBM Watson IoT Platform. To connect an IoT device to the IBM cloud, create a device in the IBM Watson IoT platform and obtain device credentials Configure the connection security and create API keys for Node-RED services to access the IBM IoT platform.

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

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Component** | **Description** | **Technology** |
| 1. | User Interface feature | How user interacts with application e.g. Web UI | HTML, CSS, JavaScript (Web application) |
| 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 (Cloud) |
| 4. | Application Logic - 3 | Logic for a process in the  application | IBM Watson Assistant  (Cloud) |
| 5. | Database | Data Type, Configurations, etc., | MySQL |
| 6. | Cloud Database | Database Service on Cloud | IBM DB2 |
| 7. | File Storage | File storage requirements | Local Filesystem |
| 8. | Infrastructure ( Server / Cloud ) | Application Deployment on Local System / Cloud | Local Server Configuration: Local System Cloud Server Configuration: IBM  Watson (Cloud) |

**Table - 2 : Application Characteristics :**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Characteristics** | **Description** | **Technology** |
| 1. | Open - Source Frameworks | List the open - source frameworks used | IoT devices, Open Weather Map, IBM Watson, Node - RED,  Web UI |
| 2. | Security Implementations | List all the security / access controls implemented,use of firewalls, etc., | Encryptions,Decryptions |
| 3. | scalability | Justify the scalability of  architecture | Python |
| 4. | Availability | Justify the availability of application | IBM Watson - Can easily be accessed |
| 5. | Performance | Design consideration for the performance of the application | Which should handle many requests without  decrease in QOS |