

**HAZARDOUS AREA MONITORING FOR INDUSTRIAL  
PLANTS POWERED BY IOT**

**SUBMITTED BY  
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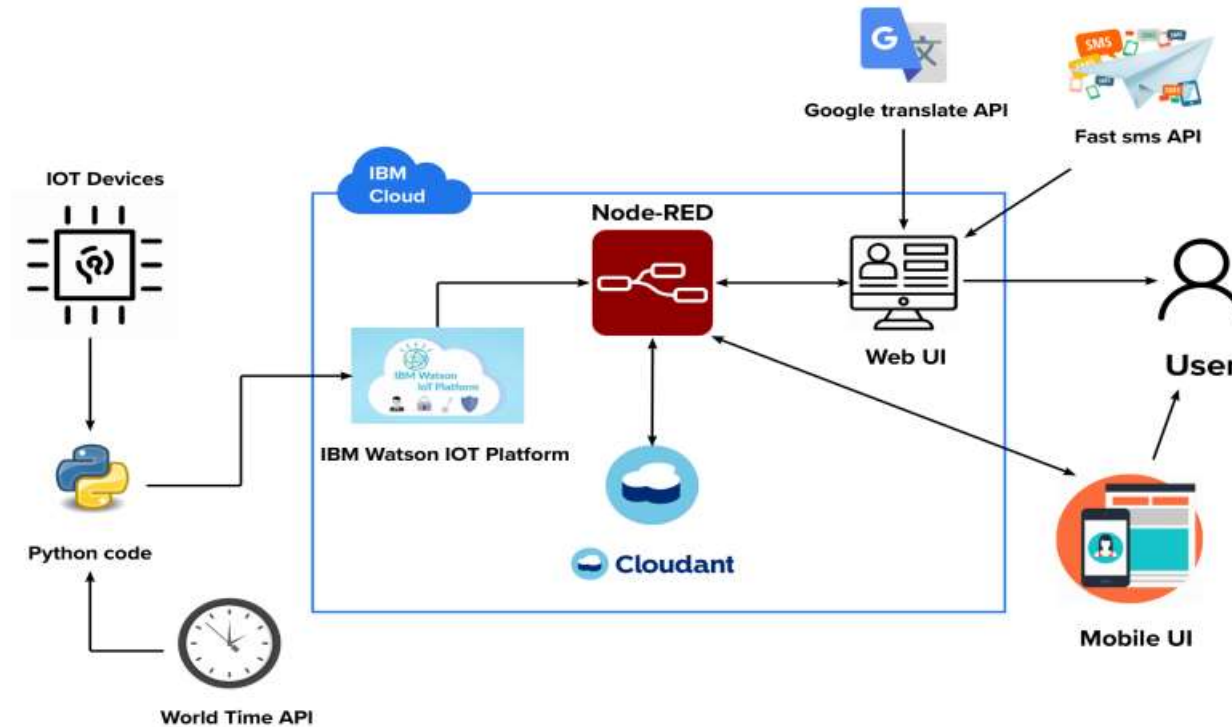
**BACHELOR OF ENGINEERING IN ELECTRONICS  
AND COMMUNICATION ENGINEERING**

## PROJECT DESIGN PHASE-II

### TECHNOLOGY STACK (ARCHITECTURE & STACK)

#### Technical Architecture:

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



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

<b>S.No</b>	<b>Component</b>	<b>Description</b>	<b>Technology</b>
1.	User Interface	Web UI, Mobile App, SMS service and Wearable devices	Node-RED, Fast SMS and MIT App inventor
2.	Application Logic-1	Getting input from smart beacons	Embedded C and Python
3.	Application Logic-2	Process data in cloud	IBM Watson IOT platform, Cloud-ant DB and Node-RED
4.	Application Logic-3	Display data to the user	Web UI, Fast SMS and Mobile application
5.	Database	Real time database	Cloud-ant DB
6.	Cloud Database	Database Service on Cloud	IBM Cloud-ant
7.	Smart beacon	To monitor the area and update the stats in the cloud	Node MCU and Sensors
8.	External API-1	To send SMS to user	Fast SMS API
9.	External API-2	Language for the website is written to be dynamic	Google translate API
10.	External API-3	To access time	World time API
11.	Infrastructure (Server / Cloud)	Application Deployment on Cloud	IBM Cloud

**Table-2: Application Characteristics:**

<b>S.No</b>	<b>Characteristics</b>	<b>Description</b>	<b>Technology</b>
1.	Open-Source Frameworks	The Node-RED open-source frameworks are used to build the web application as well as to communicate with the mobile application and to handle alert SMS	Node-RED framework
2.	Scalable Architecture	The 3 – tier architecture used with a separate user interface, application tier and data tier makes it easily scalable	IBM wat-son studio
3.	Availability	The web application is highly available as it is deployed in cloud	IBM cloud
4.	Performance	The performance of the website is improved with caching and security	IBM cloud internet services