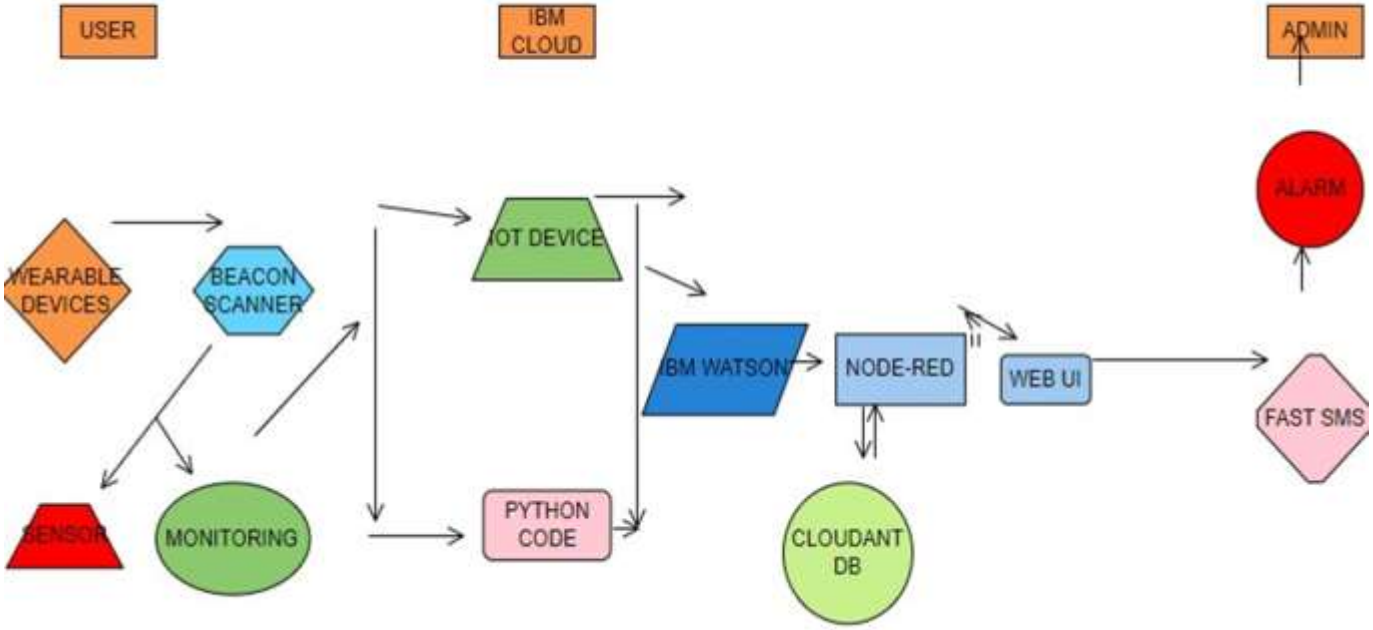
Project Design Phase-II
Technology Stack (Architecture & Stack)

Team ID	PNT2022TMID37599
Project Name	Hazardous area monitoring for industrial plant powered by IOT
Team Members	Chanukya.K(TL) Anuhya.k Jyothsna.J Silparani.Y Swetha.J

‘

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table2


USER
IBM CLOUD
ADMIN
ALARM
WEARABLE DEVICES
BEACON SCANNER
IOT DEVICE
IBM WATSON
NODE-RED
WEB UI
FAST SMS
SENSOR
MONITORING
PYTHON CODE
CLOUDANT DB

1 : Components & Technologies:

S.No	Component	Description	Technology
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, Cloudant 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	Cloudant DB
6.	Cloud Database	Database Service on Cloud	IBM Cloudant
7.	External API-1	To send sms to user	Fast sms API
8.	External API-2	Language for the website is written to be dynamic	Google translate API
9.	External API-3	To access time	World time API

10.	Smart Beacon	To monitor the area and update the stats in the cloud	NodeMCU and Sensors
11.	Infrastructure (Server / Cloud)	Application Deployment on Cloud	IBM Cloud

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
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 Watson 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