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

Date	03 October 2022
Team ID	PNT2022TMID42279
Project Name	Project – Smart Waste Management System For Metropolitan Cities
Maximum Marks	4 Marks

Technical Architecture:

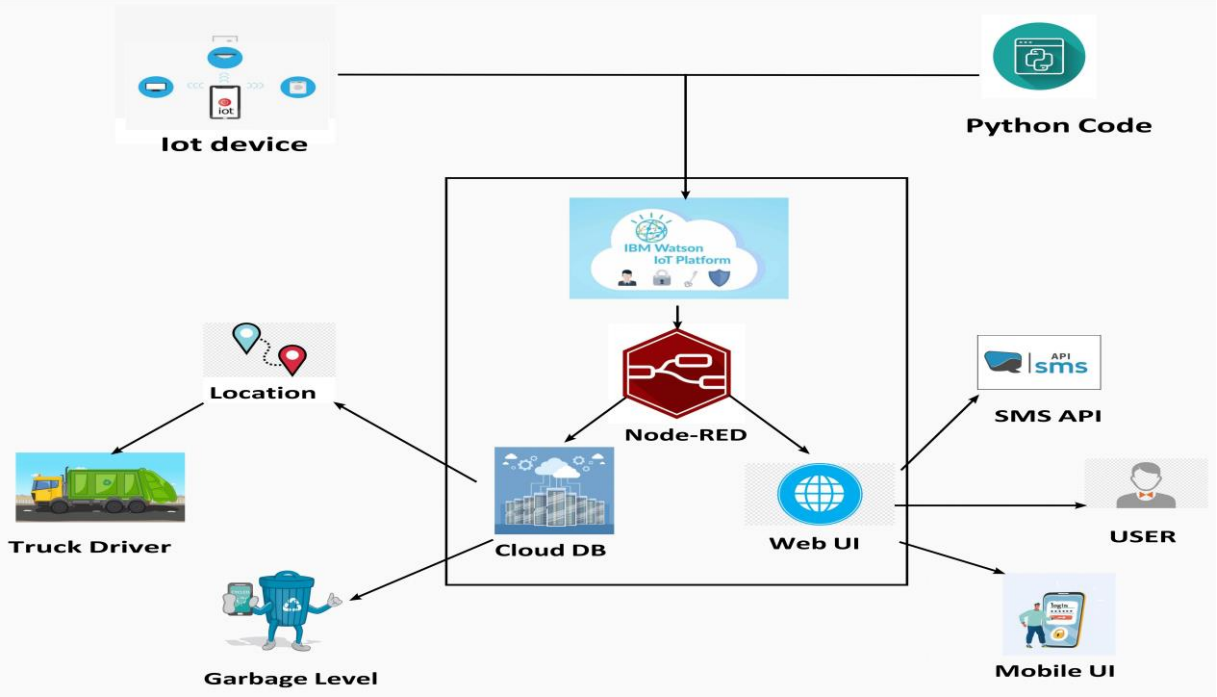

Table-1 : Components & Technologies:

S. No	Component	Description	Technology
1.	User Interface	Web app will be user friendly and public can access web by mobile UI.	Python
2.	Web Application	Web Application is platform for the public to know about the level of garbage filled in smart bins and for the drivers to find the shortest distance between filled smart bins.	Python
3.	Ultrasonic Sensor	Measures the distance between the smart bins lid and the garbage filled in the bins.	A transducer used to receive physical signals and send it as a electronic signal.
4.	GPS Sensor	Acquires Information from the cloud storage regarding the locations of smart bins.	Navigation Satellites.
5.	API	External APIs expose a projects internal resources to outside users or application.	IBM weather API, etc…
6.	Cloud Database	Information about the location and the amount of waste in the smart bins are recorded and stored in the separate memory space.	IBM DB2, IBM Cloud etc.
7.	Transport	A vehicle used to collect garbage from the smart bins.	Garbage collecting Truck.

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Templates for software development that is designed by a social network of software developers. These frameworks are free for public use.	Python.
2.	Security Implementations	Provides two step verification for the users and implementation details for eliminating the security issues.	GSM, GPRS.
3.	Scalable Architecture	Scalability of Architecture will be stable without any changes and without affecting the performance.	Node Red.
4.	Availability	Web app link will be available for the public and the drivers. Bins will be installed in specific distance(a bin for 500m).	Cloud, DB.
5.	Performance	The Execution of the whole project.	IBM Watson Iot Platform

References:

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://c4model.com/

https://www.ibm.com/cloud/architecture