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

Date	23 October 2022
Team ID	PNT2022TMID15126
Project Name	Project – Smart Waste Management for Metropolitan Cities
Maximum Marks	4 Marks

Technical Architecture:

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

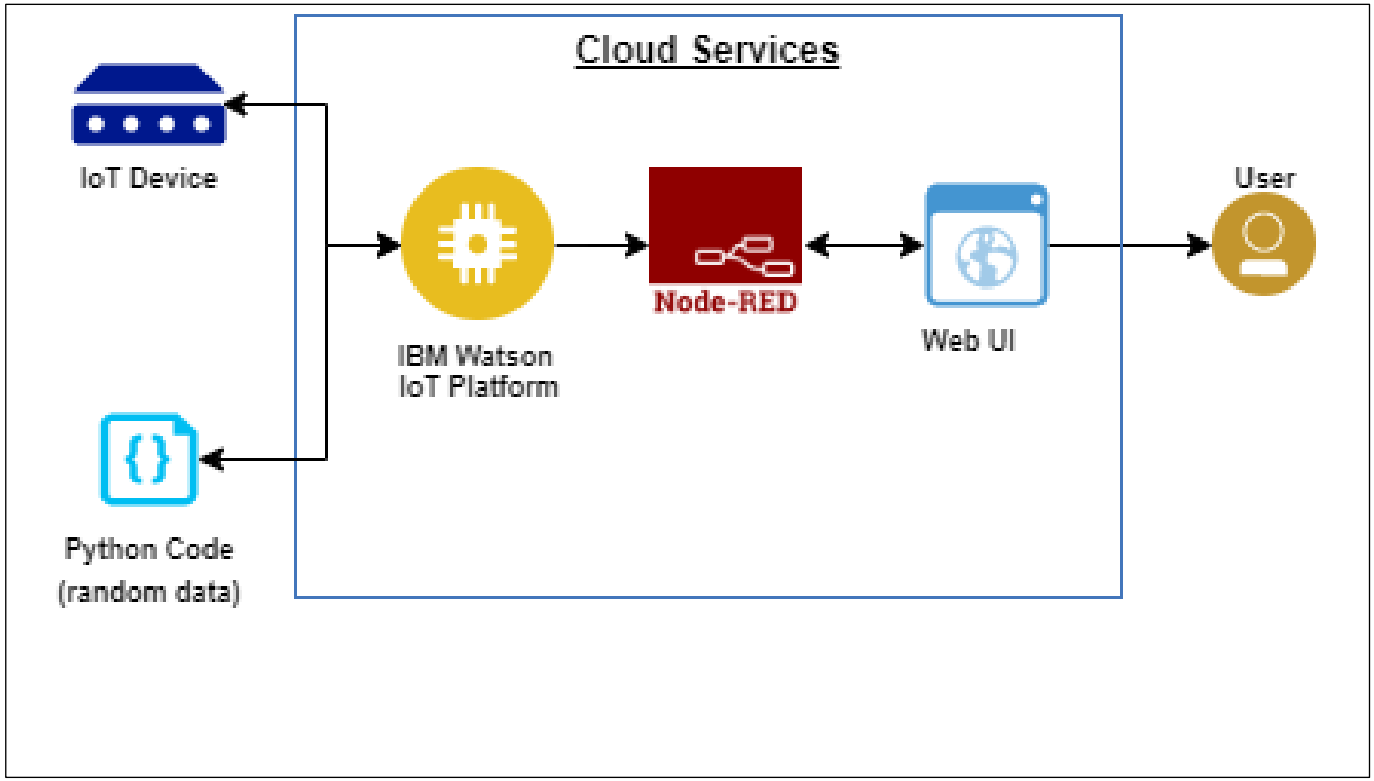

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI	HTML, CSS, JavaScript
2.	Application Logic-1	Calculate the garbage level in the bin and alert the corporation when it gets full	Ultrasonic sensor / Python
3.	Application Logic-2	To calculate the weight of the garbage and show the data in the Web application	Load cell/ Python
4.	Application Logic-3	Getting the location of the bin	GSM / GPS
5.	Cloud Database	Database Service on Cloud	IBM Cloudant
6.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
7.	External API-1	Firebase is a type of application hosting server. It offers NoSQL and real time hosting of databases	Firebase
8.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Localhost, IBM cloud

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	NodeRed, Python, IBM Simulator	IoT
2.	Security Implementations	Rasberry pi which uses UFW (uncomplicated firewall)	IoT
3.	Scalable Architecture	Rasberry pi Specifications: Soc: rspi ZERO W CPU: 32-bit with 1 GHz armv6 controller RAM: 512 MB Networking: Wifi	IoT

S.No	Characteristics	Description	Technology
4.	Availability	The smart bins will have sensors to detect the garbage level and its weght. It also gives an alert message when the bin gets full.	IoT
5.	Performance	Number of requests: RPI manages to execute around 130 read requests per second Use of Cache: 512 Mb	IoT/ Web portal