Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	29 October 2022
Team ID	PNT2022TMID42666
Project Name	Smart Waste Management System For Metropolitan Cities
Maximum Marks	4 Marks

Technical Architecture :

Table -1: Components & Technologies

S.No	Components	Description	Technology
1.	User Interface	Web Portal	HTML,CSS,NodeRed, Javascript.
2.	Application Logic-1	To calculate the distance of dreck and show the real time level in web portal , information getting via ultra sonic sensor and the alert message activate with python script to web portal.	Ultrasonic sensor/ Python.
3.	Application Logic-2	It make simple Awareness to People, identify The dustbin range	Led/Python
4.	Application Logic-3	Getting location of the dustbin	Using id
5.	Cloud Database	Database Service on cloud.	IBM DB2, IBM Cloudant etc..
6.	File Storage	File Storage requirements.	GitHub, Local file System.

7	DATABSE	It offers rdbms And dbms Mysql Mango db Nosql etc..	
8.	Ultrasonic Sensor.	To throw alert Msg when garbage .Is getting full Distance Recognition Model.	Distance Recognition Model.
9.	Infrastructure (Server/Cloud).	Application Deploymnt on Local System / Cloud Local Server Configuration: lo Cloud Server Configuration: lo, Firebox	Localhost, Web portal.

Table-2: Application Characteristics:

S No	Characteristics	Description	Technology
1.	Open -Source Framework	NodeRed,Python,IBM Simulator.	Iot.
2.	Security Implementation	Raspberry Pi is connected to the internet and for example used to broadcast live data, further security measures are recommended and use the UFW(uncomplicated Firewall).	Iot.
3.	Scalable Architecture	Raspberry pi:Specifications Soc: rspi ZERO W CPU: 32-bit computer with a 1 GHz ARMv6 RAM: 512MB	Iot.

		Networking: Wi-Fi Bluetooth: Bluetooth 5.0, Bluetooth Low Energy (BLE). Storage: MicroSD GPIO: 40-pin GPIO header, populated Ports: micro HDMI 2.0, 3.5mm analogue audiovideo jack, 2x USB 2.0, 2x USB 3.0, Ethernet Dimensions: 88mm x 58mm x 19.5mm, 46g	
4.	Availability	These smart bins use sensors like ultrasonic and load cell to send alert message about the trash level recognition technology, and artificial intelligence, enabling them to automatically sort and categorize recycling litter into one of its smaller bin.	Iot.
5.	Performance	Number of request:RPI manages to execute 129-139 read requests per second.Use of Cache:512mb Use of CDN's:Real time	Iot/web portal.