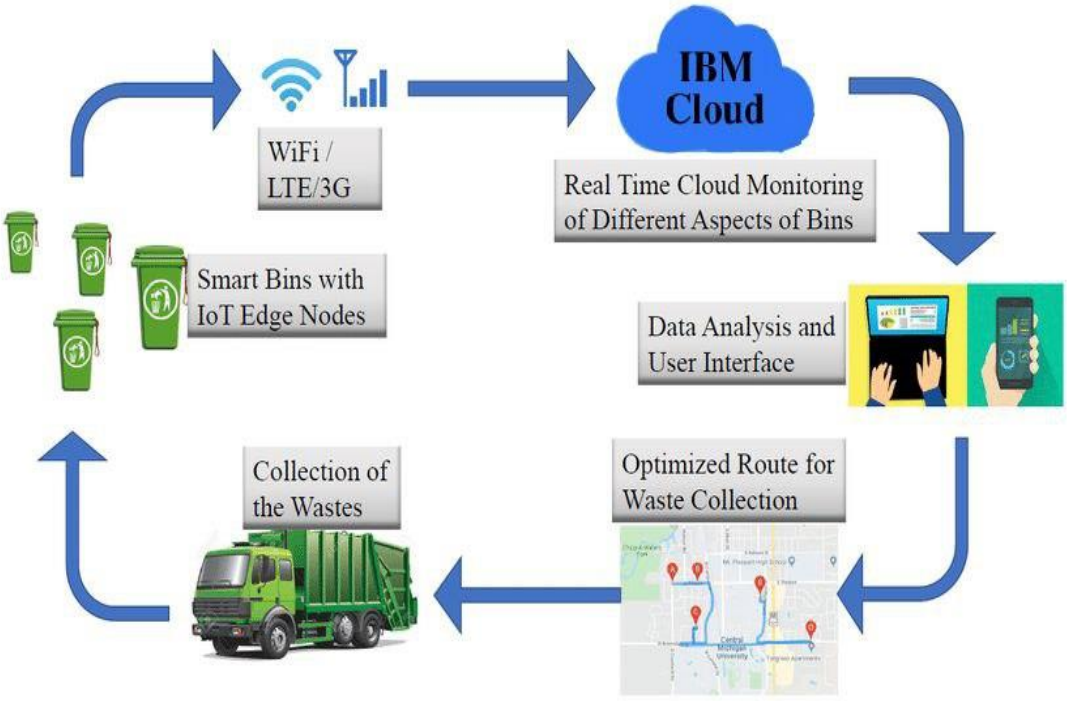
PROJECT DESIGN PHASE – II

Technology Stack(Architecture & Stack)

DATE	**20th OCTOBER 2022**
TEAM ID	**PNT2022TMID37903**
PROJECT NAME	**Project – Smart Waste Management**
MAXIMUM MARKS	**4 Marks**

Technical Architecture:

The Deliverable shall include the architectural diagram consists of required components and their descriptions in table 1 and their applications in table 2.



1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services

Table 1 : Components & Technologies:

SNO	COMPONENTS	DESCRIPTION	TECHNOLOGY
1	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc
2	Application Logic-1	Logic for a process in the application	Java / Python
3	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.

6	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9	GPS	(GPS) is a network of satellites and receiving devices used to determine the location of something on Earth.	GPS Trackers
10	Sensors	An ultrasonic sensor is an instrument that measures the distance to an object using ultrasonic sound waves.	Ultrasonic sensors
11	Power supply	Arduino is an open-source electronics platform based on easy-to-use hardware and software. Arduino boards are able to	Arduino

		read inputs of ultrasonic sensor	
12	ESP32	ESP32 is a series of low-cost, low-power system on a chip microcontrollers with integrated Wi-Fi and dual-mode Bluetooth.	ESP32

Table 2 :Applications Characteristics:

SNO	COMPONENTS	DESCRIPTION	TECHNOLOGY
1	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework
2	Security	Implementations List all the security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	Technology used

4	**Performance**	**Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.**	**Technology used**
5	**Time**	**an ongoing and continuous sequence of events that occur in succession, from past through present, and to the future.**	**Technology used**
6	**Cost**	**Cost is the expenditure required to create and sell products and services, or to acquire assets**	**Technology used**

Reference :

- https://www.researchgate.net/publication/312422329_Cloud-based_smart_waste_management_for_smart_cities
- https://www.ibm.com/cloud/architecture

- **https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d**