- **REQUIREMENT ANALYSIS**

- **CUSTOMER JOURNEY**

- **DATA FLOW DIAGRAMS**

- **TECHNOLOGY ARCHITECTURE**

Smart Waste Management System for Metropolitan Cities

IBM id: <u>IBM-EPBL</u>/<u>IBM-Project-51420-1660979196</u>

Functional Requirements

Objectives:

The main objective of the smart waste management system is to develop a new type of waste management in government and individual waste treatment industries to gather waste material for the purpose of recycling and disposal of human waste products , electronics, medical to be disposed safely with usage of multiple modern developed web-based user management and IOT devices based on the garbage bin

End result:

The garbage bin consists of IOT devices at the top and bottom of the garbage bin which helps to analyse the weight and the amount of space in the dustbin which helps the worker and the waste management to acquire date of waste products dropped by people at individual location indoor to maintain a collect and cover a vast area of the city with the report given by the garbage bins.

Focus:

The customer or the person who proceeds to drop and waste in the dustbin must notify the type of waste was to dropped , The method will helps prevention of liquid matter which to dropped which may cause damage to the IOT Devices in bottom , Since the specification known only to the Smart city management team , they must advice the worker to conduct an journey to analyse how people drop their waste based on their activities which help the worker to advice the customer to aware of the device inside the dustbin.

Essentiality:

The IOT device must send data to the Smart city waste management team in order to check the level of the Dustbin space and the area location where it currently moves, it must send indication level time to time for filling of the waste products, the localized dustbin may vary from small dustbin to bigger truck as the IOT devices may eligible for both of them

Customer Journey Map

	Awarness	Interact	Engage	Submit
Objectives	How much wastage you Have?	Identify the wastage ask to drop it	Maintaining the level and area of location	Statistics obtained to wastage department
Needs	Household bin to drop	Sharing of bin to department	Kind interaction with the worker	Satisfaction
Barriers	Weightage	Must provide the type of wastage dropping	Maintain distance while dropping	Convinced

TECHNOLOGY ARCHITECTURE

Control Center

Control Center

Start-up Phase
- Activate wireless interface
- Connect with Raspberry-PI
- Activate waste sensing module or sensors
- Activate Load Cell to detect weight of garbage wastes

- Insert garbage waste data
- Transmit garbage level data
- Run fill level Alert

- Level Data
- Monitoring system
- Admin of that location

Cloud DB

Smart waste garbage

- Ultra sonic sensor
- Load Cell
- Level Detection >80 or <80
- Raspberry Pi
- GSM (track location of garbage)
- Send SWB metadata to the server

Garbage dumping sites

Landfills

RECYCLE

Truck Trash

| Smart Fone (To get gps location for dustbins which is filled) | Webportal to show the location of garbage id which can access by waste collector | Truck track car |