## *PROJECT DESIGN PHASE – I*

## PROPOSED SOLUTION TEMPLATE

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| DATE | **29 September 2022** |
| TEAM ID | **PNT2022TMID45478** |
| PROJECT NAME | **PROJECT- SMART WASTE MANGEMENT FOR METROPOLITAN CITIES** |
| MAXIMUM MARKS | 2 marks |

**Proposed solution template:**

Project team shall fill the following information in proposed solution template.]

| S NO | Parameter | Description |
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| 1. | Problem Statement(Problem to be solved) | Design a smart waste collection system that allows citizens to segregate the various types of solid waste they want to dispose and the municipal authorities to efficiently collect the same. The system should be mobile app (Android) based. |
| 2. | Idea / Solution description | In this paper, a system is introduced to manage waste in big cities effectively without having to monitor the parts 24×7 manually. Here the problem of unorganized and non-systematic waste collection is solved by designing an embedded IoT system that will monitor each dumpster individually for the amount of waste deposited. Here an automated system is provided for segregating wet and dry waste. A mechanical setup can be used for separating the wet and dry waste into separate containers here sensors can be used for separating wet and dry. For detecting the presence of any waste wet or dry can be detected using an IR sensor in the next step for detecting wet waste a moister sensor can be used. In this process, if only IR is detected motor will rotate in the direction of the dry waste container if both the sensor detects the waste then it will go to the wet container. Both these containers are embedded with ultrasonic sensors at the top, the ultrasonic sensor is used for measuring distance. This makes it possible to measure the amount of waste in the containers if one of the containers is full then an alert message will be sent to the corresponding person. |

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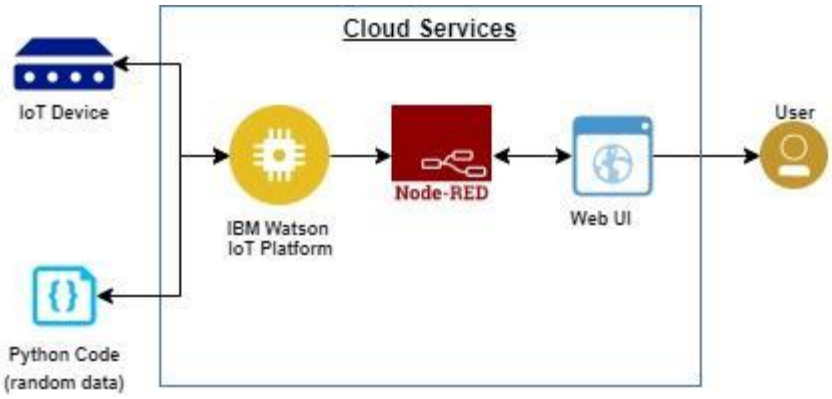
| | | TECHNICAL ARCHITECTURE<br>  |
| 3. | Novelty/ Uniqueness | This project is very effective in managing waste in any big city. Rather than using conventional periodic collection methods here priority system is used to the city is clean all the time without any overflowing dumpsters. It has been tested and verified properly to make sure all the different parts work together for a smooth function of the whole system. |
| 4. | Social Impact / Customer Satisfaction | Alongside the economic and social consequences, this mismanagement of waste has a negative impact on our environment, both because of the pollution of land, rivers and oceans, as well as on climate change due to the release of greenhouse gases in the atmosphere.<br><br>From the public perception as worst impacts of present solid waste disposal practices are seen direct social impacts such as neighbourhood of landfills to communities, breeding of pests and loss in property values<br><br>A large proportion of recyclable components, i.e., paper, plastics, metal, etc. is collected by rag pickers from the garbage bins, from roadside, or in streets, market places, etc. in metropolitan cities, thus supplying raw material to the flourishing recycling units. |
| 5. | Business model (Revenue Model ) | Waste Management generates revenue through the provision of various waste management and disposal services and recycling solutions to residential, commercial, industrial, and municipal clients. The Company derives its revenue in the form of various fees associated with its service offerings.<br><br>Believe it or not, waste management is a $1.4 trillion industry globally. U.S. waste management companies account for nearly |

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| | | $100 billion in annual revenue. Even in your garbage, the cream rises to the top. |
| 6. | Scalability of the solution | Sensors measure the level of waste Containers send the info to a data management system of the level of waste or last collection. Only certain bins are marked for collection. Vehicles only collect full or overdue containers. The way waste is collected is smarter, reducing overall transport and collection by 50%. |