Project Design Phase-II
Solution Requirements (Functional & Non-functional)

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| Date | 15 October 2022 |
| Team ID | PNT2022TMID03981 |
| Project Name | SMART WASTE MANAGEMENT SYSTEM |
| Marks | 4 Marks |

Functional Requirements:

| SL.NO | Functional Requirement | Description |
|---|---|---|
| 1 | Detailed bin information. | The monitored bin can be seen on the map by GPS location at any time.<br>The bins or stands are identified by using different colors like orange and green.<br>So the bin detail information are displayed in the Dashboard. |
| 2 | Real time System monitoring. | Based on the previous data, the tool predicts when the bin will become full, one of the functionalities that are not even included in the waste management software.<br>With real-time system monitoring and predictions you can stop collecting the half- filled or empty bins |
| 3 | Bin Distribution | By adjusting the bin distribution, capacity or location wherever necessary.<br>So we can identify the location with dense or sparse bin distribution. |
| 4 | Avoidance of Collecting Empty bins. | By using the real time data and pick recognition, we can show how to collect the bins by achieving time management and energy conservation.<br>By avoiding collecting half-filled and empty bins is the major factor in the smart waste management system. |
| 5 | Routing Management. | Based on the predictions of reaching full, the worker can respond by collecting the full loaded bins.<br>This System automates the routing map for the workers for waste management . |

Non-functional Requirements:

| SL.NO | Non-Functional Requirement | Description |
|---|---|---|
| 1 | Usability | In the design process with user experience as the core, product usability can indeed help designers better understand user potential needs in waste management, behavior and experience. |
| 2 | Recycling ability | By using reusable bags and reusable grocery bags the efficiency waste management is increased.<br>Avoid single bottle |
| 3 | Time management | Smart waste management is also about creating better working conditions for waste collectors and drivers. Instead of driving the same collection routes and servicing empty bins, waste collectors will spend their time more efficiently, taking care of bins that need servicing. |
| 4 | Software Performance<br>Scalability | The sensors use ultrasound technology to measure the fill levels in bins several times a day. Using a variety of IoT networks the sensors send the data to Smart Waste Management Software.<br>System Customers are hence provided data-driven decision making, and optimization of waste collection route and vehicle loads resulting in route reduction by at least 40%. |
| 5 | Scalability | Smart waste bins reduce the number of bins inside the towns , cities because we able to monitor the garbage bin 24/7 more cost effect and scalability when we moves to smarter. |