**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

|  |  |
| --- | --- |
| Date | 11 October 2022 |
| Team ID | PNT2022TMID44517 |
| Project Name | Project – Smart Waste Management in Metropolitan Cities |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

|  |  |  |
| --- | --- | --- |
| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | **User Registration** | Registration through Gmail |
| FR-2 | **User Confirmation** | Confirmation via Email  Confirmation via OTP |
| FR-3 | **GPS Access** | GPS access to know the location |
| FR-4 | **Bin level Analysing** | Acquire the levels of Waste bins in  a regular interval of time. |
| FR-5 | **Transport Router** | To make a efficient route for the  collection of garbages around a area. |

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

|  |  |  |
| --- | --- | --- |
| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | * A smart solution has been proposed to make the waste sorting more simple and accurate , and improve the user experience, usability, and satisfaction. * It aims to optimize ease of use while offering maximum functionality. |
| NFR-2 | **Security** | * The information of the users will be highly secured,the accounts are verified with Gmail. * If the products are misplaced then the GPS driven sensor gives an alert. |
| NFR-3 | **Reliability** | * Operates in a defined environment without failure resulting in less manpower, emissions, fuel use and traffic congestion. |
| NFR-4 | **Performance** | * The system will provide accurate reports, thus increasing the efficiency of the system. * The real-time monitoring of the garbage level with the help of sensors and wireless communication will reduce the total number of trips required of Garbage collecting truck. * This will reduce the total expenditure associated with the garbage collection. |
| NFR-5 | **Availability** | * The smart waste bins are available in Convention centers, buildings, stadiums, and transportation facilities  and captures high-quality waste data and informs staff when it gets full. |
| NFR-6 | **Scalability** | * A versatile scalable smart waste-bin system based on limited waste management could potentially lead to great improvements. * Once these smart bins are implemented on a large scale by replacing the traditional bins, the waste can be quickly managed to its efficient level as it avoids unnecessary lumping of wastes on roadside. |