Project Design Phase-II

Solution Requirements (Functional & Non-functional)

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| Team ID | PNT2022TMID13652 |
| Project Name | Project – Smart waste management system for metropolitan cities |
| Maximum Marks | 4 Marks |

# Functional Requirements:

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Registration | * User needs to login by using the G-mail to resolve the queries * Registration needs to be done by giving their name, mobile number and locality |
| FR-2 | User  Confirmation | * Confirmation about the received queries through   message. |
| FR-3 | Detailed bin inventory. | * You can see bin details in the Dashboard – trash level, GPS location and collection schedule or pick recognition. |
| FR-4 | Smart bin  location | * Bins can be tracked using GPS |
| FR-5 | Monitoring details | * This process gives a brief description about the bins. * Using Ultrasonic sensor the level of the bin can be measured * Ultrasonic sensor is used for opening and closing of the lid for the bin |
| FR-6 | Truck driver | * Truck driver should login to the web portal by giving their name and the id, vehicle number * After the completion of work they should report to the admin about the waste has been collected. |
| FR-7 | Eliminate unefficient picks. | * Eliminate the collection of half-empty bins.   . |
| FR-8 | Admin | * Admin should monitor the work which has been done by the truck driver |

# Non-functional Requirements:

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | * IOT device verifies that usability is a special and important perspective to analyze user requirements, which can further improve the design quality as per requirements of the user. |
| NFR-2 | **Security** | * We propose a Secure Incentive based Waste monitoring system to encourage garbage segregation at the initial level. The data generated by the sensor is secured by the encryption technique which in turn decrypted to read the data. |
| NFR-3 | **Reliability** | * Smart waste management is also about creating better working conditions for waste collectors and drivers. Waste collectors will spend their time more efficiently, taking care of bins that need servicing. |
| NFR-4 | **Performance** | * This Smart System use IOT technology which include ultrasonic sensor to measure the fill levels in bins several times a day. Using a variety of IOT networks , the sensors send the data to a powerful cloud-based platform, for data driven daily operations. |
| NFR-5 | **Availability** | * By developing & deploying resilient hardware and beautiful software which empower cities, businesses, and countries to manage waste smarter. |
| NFR-6 | **Scalability** | * Using smart waste bins reduce the number of bins inside town , cities as we are monitoring the whole 24 hours of 7days. Smart waste bins are more cost efficient and scalability |