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(57) Abstract :
 This invention relates to an intelligent waste management system, which is capable of optimizing the collection processes by integrating new technologies. The system comprises waste containers with sensors that record the level of fill, weight and type of waste at any time using Internet of Things technologies. In order to analyze the data, predict optimal collection times, and manage waste information, the data from these sensors are transmitted wirelessly to a central processing unit CPU, using machine learning algorithms. In order to ensure efficient and timely waste collection, the system includes adaptive route planning software, which dynamically adjusts the route of waste collection trucks based on real time data. A user interface provides operators with a comprehensive dashboard for real-time monitoring, alerts, and predictive maintenance notifications. In addition, in order to guarantee a smooth data transmission and continuous operation under different environmental conditions, the system shall use an effective communication network. This innovative approach enhances the efficiency, cost effectiveness and environmental sustainability of waste management practices.

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