

IOT Garbage Monitoring System with Weight Sensing

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Abstract: *This paper presents a novel approach towards efficient waste management utilizing Internet of Things (IoT) technology. The proposed system integrates garbage monitoring and weight sensing capabilities to create a smart waste management solution. Traditional waste collection methods are often inefficient and lack real-time monitoring, leading to overflows, environmental hazards, and unnecessary resource allocation. By employing IoT sensors embedded within garbage bins, real-time data on fill-level and weight can be collected and transmitted to a central server. AI calculations are applied to break down the information and predict future fill levels, optimizing waste collection schedules and routes. The system also includes a command-line interface available through web or mobile applications, enabling users to request timely pickups or report issues. Furthermore, the weight sensing functionality provides insights into the type and volume of waste being generated, facilitating better waste categorization and recycling initiatives. Field tests conducted in urban environments demonstrate the adequacy of the proposed system, reducing operational costs, minimizing environmental impact, and enhancing overall waste management efficiency. The coordination of IoT innovation with garbage monitoring and weight sensing represents a significant advancement towards sustainable and smarter cities*

Keywords: IOT; Arduino; Garbage; Sensors; Real-Time