

Design and Development of an IoT-based Intelligent Wastebasket System

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Abstract: Modern urbanization in the world's emerging economies, population growth, and human activity expansion created big issues. Patterns of consumption and production have led to the accumulation of enormous amounts of garbage that must be disposed of, treated, and handled appropriately to ensure a sustainable environment and a good standard of living for the growing population. Current waste management strategies are insufficiently effective and efficient to control the increase in waste volume. This work presents a thorough analysis of the available literature, identifying and describing active research initiatives on smart waste bins that would enable efficient waste management. In addition, the design and development of an intelligent Internet of Things (IoT)-based system for waste segregation are discussed. The proposed system is effective for both dry and moist waste and can correctly separate both types of waste.

Keywords:- IoT, Waste, Smart Dustbin, Waste Separation.

1. INTRODUCTION

The battle for a sustainable future will be won or lost in urban areas depending on how exactly we collect, dispose of, handle, and control waste creation. To maintain a healthy environment and provide a satisfactory level of living for the expanding population, a significant amount of garbage must be processed, disposed of, and handled in an appropriate manner.

Today's waste management challenges necessitate the implementation of an appropriate strategy and decision-making procedure. Changing lifestyles have contributed to an increase in waste generation. The increase in waste production poses major problems. Current waste disposal methods in the United States, such as open dumping, open burning, and burial, have been deemed ineffective and hazardous to the environment and human health. The outdated method of waste management in which cleaners are required to empty trash cans on a regular basis. This strategy has significant problems. Due to the daily growth in garbage production, waste bins in our environment frequently overflow, creating a hazardous environment for the local population and emitting a foul odor. Consequently, a number of human disorders and diseases spread. It is common in our country to witness overflowing trash cans with trash