

LITERATURE SURVEY

SMART WASTE MANAGEMENT SYSTEM

FOR METROPOLITAN CITIES

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ABSTRACT:

The paper is based on the concept of Automation used in waste management system under the domain of Cleanliness and Hygiene. Dumping garbage onto the streets and in public areas is a common synopsis found in all developing countries and this mainly end up affecting the environment and creating several unhygienic conditions. In order to deal with these problems Smart net bin is an ideology put forward which a combination of hardware and software technologies is i.e. connecting Wi-Fi system to the normal dustbin in order to provide free internet facilities to the user for a particular period of time. The technology awards the user for keeping the surrounding clean and thus work hand in hand for the proper waste management in a locality. Smart net bin uses multiple technologies firstly the technology for measuring the amount of trash dumped secondly the movement of the waste and lastly sending necessary signals and connecting the user to the Wi-Fi system. The proposed system will function on client server model, a cause that will assure clean environment, good health, and pollution free society.

INTRODUCTION:

The amount of waste produced everyday by the industries and the households is increasing at an appalling rate, and the major reason for this is soaring use of packaged items, textiles, paper, food, plastics, metals, glass etc, thus management of this refuse becomes a crucial part in our everyday life. In most of the developed countries there are many efficient techniques which are used for the proper management of this waste, but in some countries especially the developing ones the careless attitude of people towards maintaining clean surroundings, along with this many issues such as no stringent laws for using the biodegradable

materials, no proper environ policies, no laws for sustainable development are the seed for the fatal results of waste management. Due to the increasing waste, the public bins which are used for collecting this waste are overflowing; the locality is jumbled of trash, causing not only malodorous streets but also a negative impact on the health and environment. Waste is a crucial issue, which needs to be addressed smartly. We segregate the waste at our homes for ease at processing and recycling. We observed trash vans come irregular to homes creating a despoliation of households. Due to this many civilians empty their overloaded dustbins in open spaces. This in turn increases environmental pollution the waste is a great hassle for our health and the environment it has many effects which are dreadful. Trash is breeding ground for bacteria, insects, flies these flies are the same that roam around the eatable and drop them off springs. Thus they increase the risk with food poisoning, typhoid, gastroenteritis, salmonella, the insects cause malaria dengue etc, beside these flies and insects other animals that prosper from the trash are the rats and the stray dogs spreading diseases, the garbage also causes various respiratory diseases the toxic contaminates such as co₂ methane, nitrous oxide beside health issues adversely affect the environment causing air pollution water pollution. Disposal of hazardous waste like the electronic items, plastics in water affect the aquatic life and indirectly the human beings. Overflowing garbage is also a public hassle and eyesore. Everyone wants to visit fresh clean cities. A malodorous city with trash all around the place does not attract tourist thus loosing the money revenue and the opportunities. As prosperity grows, 62 million tons of garbage is generated everyday by the 377 million people living in urban India, now the world's third largest garbage generator. However, it's not the amount of waste generated that's as much of an issue as the fact that more than 45 million tons, or 3 million trucks worth, of garbage is untreated and disposed of by municipal authorities every day in an unhygienic manner. The internet nowadays has the world under its spell. Not a single person lives without internet, phone, tab or laptop. It is believed without connectivity u cannot move ahead in today's world but sometimes due to heavy plans or connectivity issues we can't access to the internet, and thus attracting people towards free Wi-Fi. Providing free Wi-Fi facility for dumping waste into the dustbin would solve the issue of waste and the internet facility plus availability of free service would help people go crazy and would act as reward for maintain cleanliness in the locality.

LITERATURE REVIEW:

One issue that most cities and municipalities are dealing with is the degradation of environmental cleanliness with reference to waste management. This is a result of improper garbage collection management. The spread of trash in the neighborhood is a result of this poor management, which in turn generates unwholesome conditions in the neighborhood. Additionally, it encourages various significant illnesses among those nearby and a decline in the beauty of the region. To avoid improper garbage management and to enhance cleanliness the smart waste management system is created with the society in mind. Any city can be referred to be a "smart city" because of its orderly and tidy surroundings. Currently, there are many issues facing modern cities, including those related to smart grids, smart environments, and smart living. Today, cities and metropolitan areas' top priority is proper garbage management. Traditional waste management techniques are too simplistic to create an effective and reliable waste management. Any smart city should place the highest focus on smart waste management because it has a direct impact on people's way of life, health, and environment. The Smart Garbage Monitoring System, the Wise Waste Segregation System, and the Smart Waste Collection System are only a few of the several potential ways for smart bin systems that are discussed in this article. We also suggest a framework for an intelligent garbage management system in addition to this survey.

PROS:

- Advancement of smart city system.
- Effective management of the city waste helps people life style to improve
- Making the garbage system an IoT application opens path to a lot of different opportunities.
- Hands on Device system for garbage system helps to have a more detailed update on the disposal system.

APPLICATIONS:

- Can be implemented in highly trafficking system.
- Apartment based lifestyle has a huge requirement for this kind of system.
- Helps city people to have an update on garbage system.

CONCLUSION:

Solid waste management is faced with a number of issues which include lack of throughput, inadequate solid waste data, efficiency problem, delays in collection and resistance to new technologies. Presently, waste management is a major problem for authorities who are responsible for such task because it's a costly service and it hugely impacts the environment as a whole. This study introduced a smart waste monitoring system that uses several sensors and communication technologies to achieve the set task. The proposed system was achieved through the development of theoretical Models, layout and decision-making algorithms in the course of the project. There is an enormous amount of room for the development of this project in order for it to meet commercial standards. One of my many recommendations would be that of the addition of other sensors e.g. accelerometer. The accelerometer will make the system save more energy by turning on the system to measure the bin level only when the lid is opened to dispose waste. The system would then update its current state on Thing Speak and turn off, preventing unnecessary measurement when the bin's level has not been altered due to dormancy. Another recommendation is the use of solar panel for power generation making its power supply autonomous.