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# SMART CITY: SOLVING URBAN PROBLEMS USING ANDROID APPLICATION

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**Abstract:** *The modern world is experiencing a rapid increase in the growth rate of urban areas. Cities need to be more advance than ever to maintain the Quality of Life and the Quality of Services to the citizens. In this project, a three layered implementation model for smart city has been presented. Furthermore, a brief overview of smart city applications that is smart garbage collection, Solid Waste Management(SWM) and road network has been given. The smart city concept is a recent phenomenon that seems to be drawing so much attention from both academia and industry [1]. With a rapid and alarming influx of migrants into urban areas the service delivery, traffic congestion to and from the city, Garbage Collection and Solid Waste Management has become a serious issue for both city managers and management [3]. We are proposing the system which will help us to promote smart city concept. The proposed system is the first system in which user is also included. This system consists of User, Administrator, Contractor and News Reporter or Media. User will capture the image of issues (Garbage collection, Solid Waste and Issues related to Road Network). After capturing the image user will share that image with the Administrator. Administrator will take action on that issue that is, tells the contractor to resolve the issue. Contractor will send response to Administrator about the work done and that response will be sent to user by administrator. If Administrator don't send response in particular day's user will send information of issue to media. The proposed system is useful for promoting smart city concept.*

***Keywords-*** *Internet of Things, Smart city, Administrator*

## I INTRODUCTION

In order to develop a smart city the Solid Waste Management should also take care of sustainable development apart from infrastructural development. Manual analysis carried out for urban solid waste management is very hectic as it includes huge amount of data and statistics. Hence, to make this procedure quick and efficient computerization of the system is the best solution. Whereas introducing Geographical Information System(GIS) tool to overcome such types of limitations, it will become easy to manage the work load and solid waste management planning.Large amount of Garbage is being produced every day in many cities across the world because of growing population and change in the behavior of consumer. As per the estimation carried out by the World Bank, 1.3 billion tonnes of solid waste is being produced in a yearby considering the urban cities across the world. By the year 2025, the estimation will go upto 2.2 Billion Tonnes. On the other hand, India usually generates upto 1,60,000 metric Tonnes of Garbage everyday.

## II LITERATURE SURVEY

1)Optimization of Municipal Solid Waste collection based on GIS model: Case study of Greece, Athens and Nikea.
In this study, a method for the optimization of the solid waste categorization and transportation system based on GIS was developed. An ArcGIS Network Analyst was developed in order to increase the potency of WCT within (MON), Municipality of Nikea, Athens,Balkan nation with the help of reallocation of waste categorization bins and also the optimization of car routing in reference of distance and time travelled[1]. Two situations were differentiated with help of empirical assortment scheme which are collection vehicle routing optimization and reallocation of bins and routing optimization.

2)Optimization of Municipal Solid Waste Management carried out in Indore City based on GIS.
The study is mainly focused on Analysis of existing standing of collection, generation, storage, transportation, treatment and disposal activities of Municipal Solid Waste of Indore city. Observing the current affairs based on the rules of MSW 2000 implements the GIS based Solid Waste Management System(SWM)[2].To make the successful implementation of this developed model by checking the area related with issues like accurate allocation of waste bins, optimizing the routes of transportation, and to give the location of waste disposal. This paper also states the Geographical system helping as a tool for Municipal solid Waste Management.

3) Route Optimization and Solid Waste Management Based on GIS-A Case Study of Indapur City.In today's world (SWM)Solid waste management may be a international environmental problem. These issues are not taken seriously. Due to this there is an incredible quantity of loss in relation of health hazards, degradation of environment and loss in

 

terms of direct disposal of solid waste . There needs to be acceptance coming up with problems of solid waste management by means of the research based on waste state of affairs of the realm. The increasing growth within the urban population accompanies degreed activities which results in an inflated solid waste generation[3],within the method of (SWM)Solid Waste Management, additional attention should be paid towards categorization because it itself needs 60-70% of the full value.

4)Internet of Things in Smart Cities
The Internet of Things (IoT) shall be able to integrate clearly and seamlessly an oversized variety of various and different finish systems, while providing open access to select subsets of knowledge for the event of aplethora of digital services[4]. Building up a comprehensive design for the IoT is thus a really difficult task, principally due to the very massive style of devices, link layer technologies, and services that would be taking care and concern in such a system. In this paper, author have a likelihood on focus specifically to associate degree urban IoT system that, whereas still being quite a broad class, square measure characterized by particular their specific application domain.

5)Routes optimization for Municipal Solid Waste Collection with arc(GIS) network analyst.For best routing identification applied in Municipal Waste Assortment ArcGis Network Analyst is being introduced in the paper.All the desired parameters for the Waste Assortment is taken under consideration by the planned application.As a result desktop users are able to model realistic network situations and conditions.In this scenario,the simulation mostly comprises of the situations of visiting loading places inthe municipality of Nagpur.In order to collect Municipal Solid Waste that cannot be gathered by the quality waste categorization trucks,imputable to size and other preventive obstacles[5].

6) Challenges and Status of road networks in India.
The (WHO) World Health Organization compilation comprises of safety information road network for huge and major economies are found in Asian countries to make the very best variety of road fatalities within the world, with estimation of about 105,000 road -accident caused deaths in 2006.[5]As a result due to such conditions in India, the accident and other fatalities rate are unit affects to a large part of economies and population in the country. Since 2004-2007,Asian countries had about 132 deaths due to accidents on the road per Million voters, compared to 313 deaths per million voters within ourselves. About 429 accidents per million voters are the Non-fatal accident rates reportable on Indian roads compared to 412 accidents per million voters in China, and 1101accidentsper million voters within us. As per the reports it depicts that not all accidents in Asian nations are unit reportable and recorded.

## III EXISTING SYSTEM

Recently, in today's world the solid waste management , Garbage collection and road network issues are major environmental issues. Usually these issues are not taken seriously. There is a large amount of loss in terms of health hazards, degradation in environment and loss caused due to the direct disposal of solid waste. Appropriate planning should be made for proper solid waste management based on analysis of the waste situation in the particular area. As per the increasing population in urban cities more and more activities should be implemented for the management of waste in the city. Government agents are not giving proper attention for issues raised by the people regarding Garbage Generation and road network issues such as potholes causing accidents. The Existing system have disadvantages like 1) Existing system does not include the user as a participant in the system. 2) Existing System is not effective 3) People's complaints are getting ignored day by day.

## IV PROPOSED SYSTEM

People are getting settled into the Urban areas because of the opportunities and the lifestyle to make them progress in their lives and work. These trends states that Urban areas are increasing day by day. Considering this Urban trend in India,Smart City is one of the recent research going on making all the cities as Smart in the near future. Garbage collection, road network management and Solid Waste Management, in our country and cities, are ongoing challenge. The mission of the smart city app is to maintain a safe, efficient, and effective Solid Waste Management, Garbage collection and road network problem. The proposed system is the first system in which user is also included. This system consists of User, Administrator, Contractor and news reporter or media. User will capture the image of issues (Garbage collection, Solid Waste and Issues related to road). After capturing image user will share that image with the Administrator. Administrator will take action on that issue that is tell contractor to resolve the issue. Contractor will send response to Administrator about the work done and that response will be sent to user by administrator. If Administrator didn't send response in particular day's user will send information of issue to media. The proposed system is useful for promoting smart city concept. The proposed application will be very helpful to resolve the environmental as well as infrastructural issues in the cities.

 

## V ARCHITECTURE

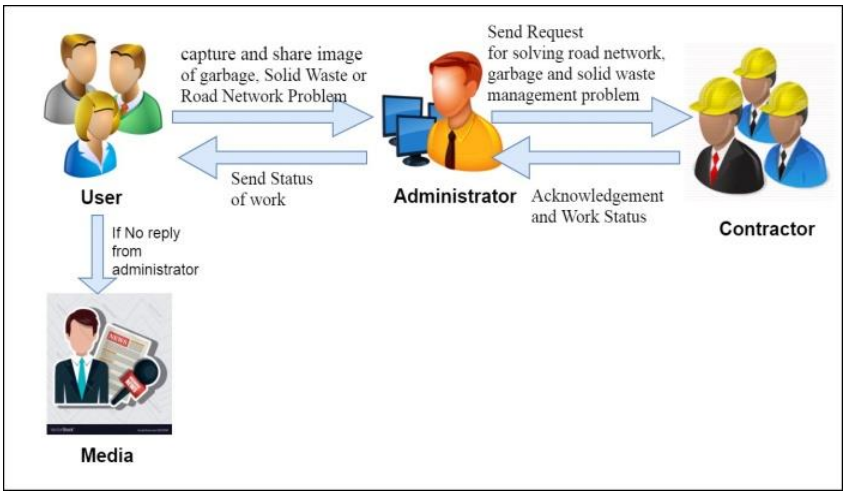


Fig. 1. Architecture Diagram

## VI CONCLUSION

Public awareness and participation of people in solving problems can play a significant role in garbage collection and road network problem. In this project public are the main users. India is moving towards the idea of being a smart city and by using smart city application we can also be a part of this concept. The presentation of paper denotes an easy developing and designing of an appropriate storage, solving road network issues, planning by the municipal corporation for the collection and disposal of solid waste system. The proposed model is an optimal modelconsidering all the parameters including density of population, road network, waste generation capacity and also this model helps to find the minimum and easy pattern for transportation of solid waste.

## VII ACKNOWLEDGEMENT

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## VIII RESULT

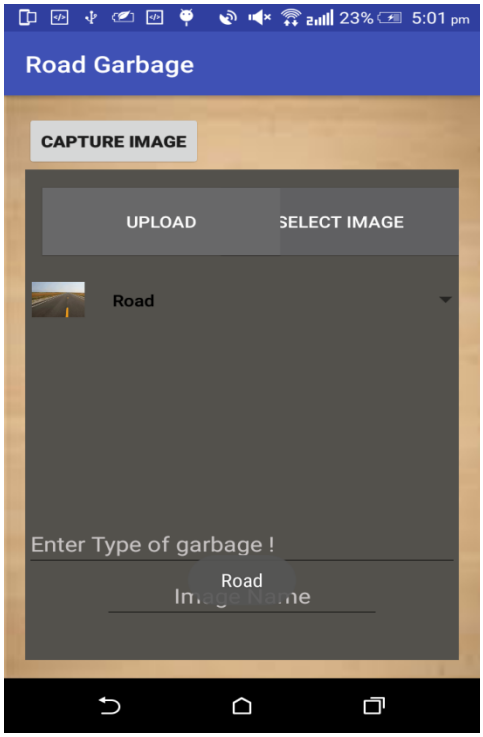


Fig 2: Capture Image Screen

 

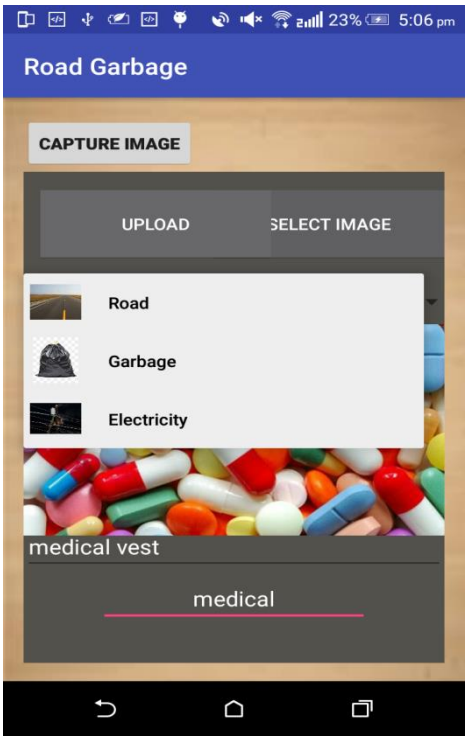


Fig 3: Select Category

## IX FUTURE SCOPE

In future we can create smart dustbin system for solid waste management and garbage collection. In that we can use various sensors and microcontrollers for proposing the smart dustbin. For Road network problem we can use CCTV camera to detect the problem and issues related to the road.

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