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LOCATION BASED GARBAGE MANAGEMENT SYSTEM FOR SMART CITY

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Abstract— Smart cities integrate multiple web solutions to build a comfortable human habitation. One of these solutions is to provide an environmentally friendly, efficient and effective garbage management system. The current garbage collection system includes routine garbage trucks doing rounds daily or weekly, which not only doesn't cover every zone of the city but is a completely inefficient use of government resources. This paper proposes a cost-effective web based system for the government to utilize available resources to efficiently manage the overwhelming amounts of garbage collected each day, while also providing a better solution for the inconvenience of garbage disposal for the citizens. Location based garbage management system for smart city is developed for the workforce and the citizens, which primarily provides the generated routes for the workforce and finds the nearest available smart bin for citizens.

I.INTRODUCTION

The main aim of the project is to clean the society by collecting the garbage. The project "LOCATION BASED GARBAGE MANAGEMENT SYSTEM FOR SMARTCITY"is allocating the job for driver from the admin and get the complaints from the user. This paper proposes a cost-effective mobile or web based system for the government to utilize available resources to efficiently manage the overwhelming amounts of garbage collected each day, while also providing a better Solution for the inconvenience of garbage disposal for the citizens. This project helps to minimize the work of record keeping. This is going to make easier communication between admin and user.

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II. OBJECTIVES

A. General Objective

The main objective of the project is to design, develop and implement automated garbage monitoring system.

B. Specific Objectives

- To analyze the works performed so far to monitor the garbage.
- Propose and design a garbage monitoring system that can be controlled with GUL
- Simulate the design using Adriano microcontroller
- Implement the simulated design along with hardware and software specifications

C. PROBLEM STATEMENT

The first step in the software development life cycle is identification of the problem. As the success of the system depends accurately a problem is identified. In our daily life, we see the pictures of garbage b1ins being overfull and all the garbage spills out resulting in pollution . These also increases number of diseases as large number of insects and mosquitoes breed on it. The people in those areas cannot complaint directly to the municipalities. People may not have time to go to municipalities. And then its difficult to check whether the garbage collectors are doing their work

properly or not. Hence our problem statement is to design a system for collecting the garbage from a particular area the area who's public garbage with prior concern

III. LITURATURE SURVEY

1) LITRATURE SURVEY:

Solid waste management has become one of a major concern in environmental issues (Mazzanti & Zoboli, 2008). This is particularly true to urban areas where population is rapidly growing and amount of waste generated is increasing like never before (Kathiravale & Mohd Yunus, 2008). Current earth's population is 6.8 billion and it is estimated that almost half of this population lives in urban areas (Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, 2009). Waste generation increase proportionally to this population number and income, creating the needs of effective management (Mazzanti & Zoboli, 2008). Urbanization and industrialization leads to new lifestyles and behavior which also affects waste composition from mainly organic to synthetic material that last longer such as plastics and other packaging material (Idris et al., 2004). E-waste that barely existed before was generated as much as 20-50 metric tons a year (UNEP, 2006).

The management of waste become complex and the facilities provided cannot cope with the increasing demand and needs. Therefore, best approach need to be implemented immediately while considering environmental, social and economic aspects (Aye & Widjaya, 2006). The drivers of sustainable waste management were clarified by Agamuthu et al. (2009), which include human, economic, institutional and environment aspect. The study suggests that each driving group should be considered in local context as managing solid waste for a particular society may differ from the others.11 For example, waste managers in Africa need to tackle some issues including, lack of data, insignificant financial resources, vast different of amount and waste types between urban and rural area, lack of technical and human resources, low level of awareness and cultural aversion towards waste (Couth & Trois, 2010). On the other hand, problems faced among Asian countries differ with two distinct groups; developed and developing countries. While some of the countries are having specific national policy on solid waste management, some others experience problems such as increasing urban population, scarcity of land, services coverage area, inadequate resources and technology, and so on (Shekdar, 2009). The differences in managing solid waste not only vary between countries but also among areas in the same country. For instance, while Istanbul are having big improvement in their solid waste management with the establishment of transfer stations, sanitary landfills and methane recovery system, it does not reduce the problem in the Black Sea coast in Turkey. This is caused by the complex topography, weak administrative structures and the low local's income (Berkun et al., 2005)

2) EXISTING SYSTEM

The current garbage collection system includes routine garbage trucks doing rounds daily or weekly, which not only doesn't cover every zone of the city but is a completely inefficient use of government resources.The existing system is manual entry. It is very difficult to maintain all the user complaints.The obvious solution to this is for the cleaning staff to stay near garbage bins every day till they fill up to clean them. This is not a real solution .Admin could not getting any feedback from the people about work progress.Driver needs to meet the admin to submit their work status report. Admin cannot check whether the garbage collectors do their work or not. It may take long time to process the records. An admin find some difficult to save all the details about driver, bin and user details.

3) THE DRAWBACKS OF EXISTING SYSTEM

- Difficult to maintain all the user complaint
- The time consumption is high
- The report is generated in manual manner.
- It leads to data loss.

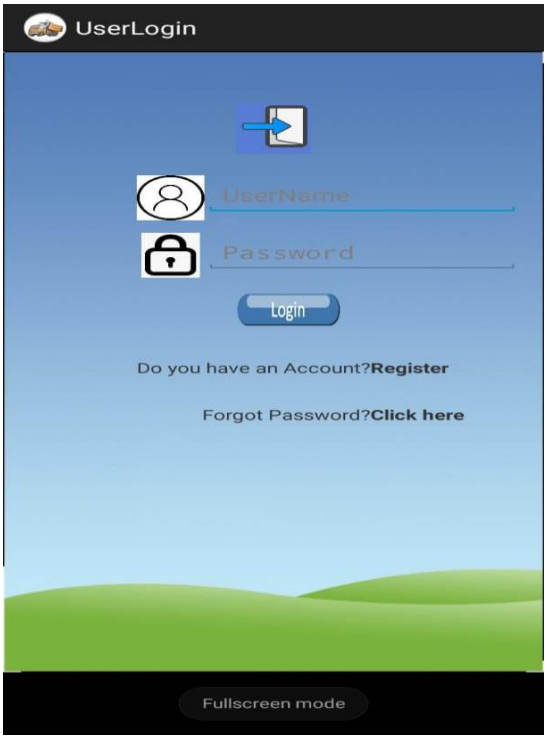
4) PROPOSED SYSTEM

To avoid the drawbacks in the existing system, the proposed system has been developed to provide an effective application.Admin can notify his driver through online for job alert. Admin can easily maintain the details about driver, user ,bin, user

complaints through online. Facilities are added for drivers, that is driver can see his job and submit his work report. The new system is more personalized. The new user can understand all the option in it very easily. It is made in a quick of easy referential manner. The admin can see the current location of the driver for checking if he is doing his work or not.

5) BENEFITS OF PROPOSED SYSTEM

- It improves communication between admin and driver.
- The reports can be generated easily
- The application will reduce manual work.
- Management can provide better service for user
- User can give feedback
- Admin can see the location of the driver



IV. MODULES

- Customer module
- Job Allocation module
- Worker module

1)CUSTOMER MODULE

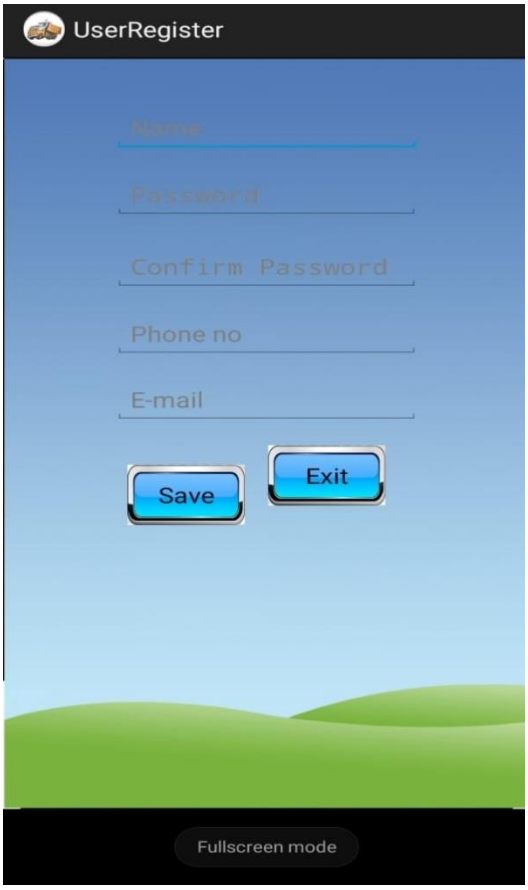
In this module user can create their account, by giving the details such as name, phone number and email id. They was also given two fields username and password to such that they were register receptor and they can enter the login form with their username and password.

2) JOB ALLOCATION MODULE

In this module the admin can login using his user name and password. The admin can create bins and update them. Create drivers using their details such as name, phone number. admin can check user complaints and feedback. Admin alert the daily work of drivers and then check their work report. Admin can also call and send sms to the driver. Admin can check the location of the driver.

3) WORKER MODULE

In this module driver can check his daily works and their work .Check daily work updates. Choose best route .Update garbage load status. View reviews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AdminWork
Create Bin
View Bin
Create Driver
View Driver
Job Allocation
View Report
View Feedback
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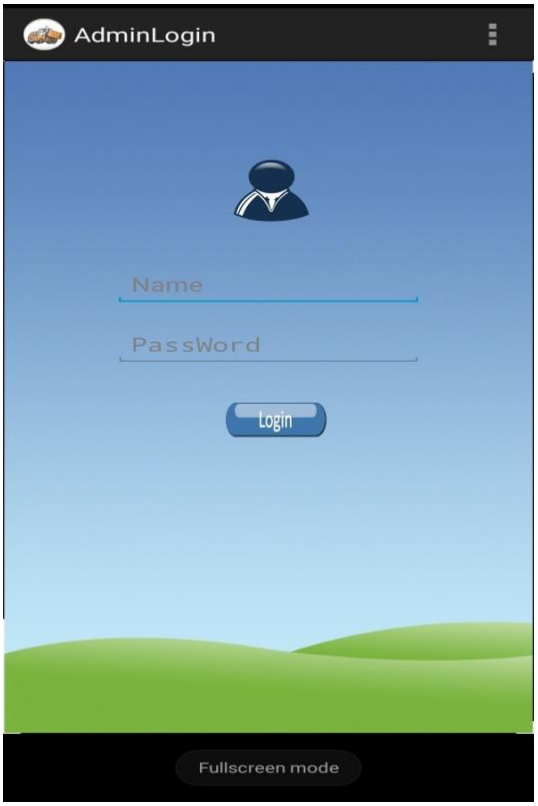
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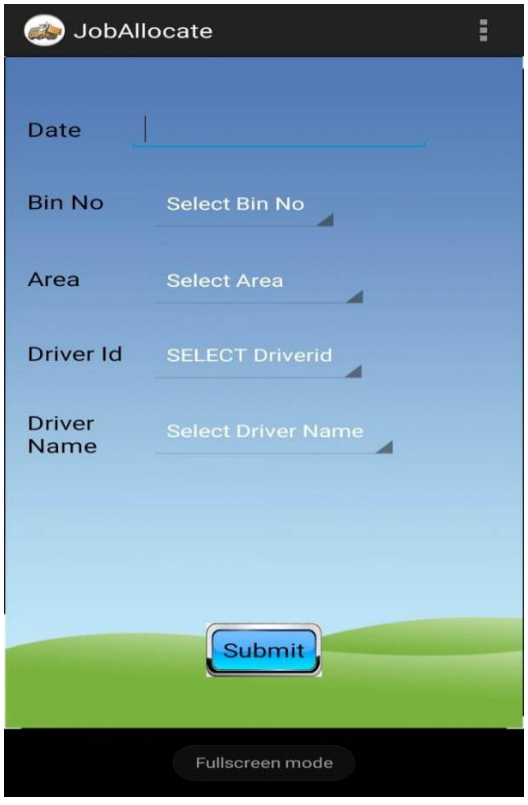
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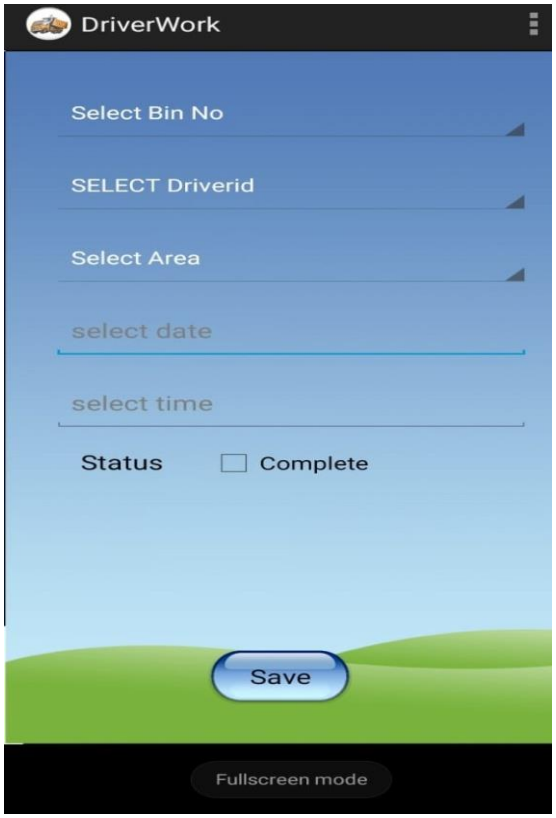

V. CONCLUSION

Location Based Garbage Management system for Smart city working is to design a system for collecting the garbage from a particular area the area who's public garbage bins are overflowing with prior concern .The Developed system provides improved database for garbage collection on time.By Implement the project we will allocate job for drivers and check work reports and get feedback from the user.

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