

GPS Based Garbage Collection Notification to the Society

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Abstract: The idea is "GPS based garbage collection notification to society." The system can be referred as a system for collecting garbage from the house. This system is used to connect sensors and Internet of Things (IOT). Cloud computing technology is used for data storage. The "Map" is used to monitor the location of vehicle. A Micro Controller is used to control the Global Positioning System (GPS) & Global System for Mobiles (GSM)/ General Packet Radio Services (GPRS). When user establishes a complaint then the token is generated. User can see the status of the complaint like seen, action taken etc. The administrator can respond to the complaints of user and also user can produce some benefited articles. Administrator can view extra information about vehicle like its petrol, its arrival time, date, etc. GPS Tracker (GT06) device is used to trace the location by using GPS system. When vehicle is near to the society then message is generated on the users mobile

Keywords: GPS, GPRS, GSM, GT06.

1. GENERAL INTRODUCTION

The aim is related to Garbage Collection Management under Swach Bharat Mission and development of open and green spaces. To provide better facility for citizen Municipal Corporation is using new technology for their smart city mission. The main purpose behind this initiative is to manage the garbage waste management through the various technology like GPS vehicle tracking system, UHF RFID Readers ,IOT sensors etc. Along with innovative mobile and web based application to improve and smooth ground level mechanism for waste collection and recycling of waste.

"GPS based garbage collection notification to the society". This system can be referred as a system for collecting garbage from the house. This uses connecting sensors and Internet of Things (IOT). Internet of Things allows object to be controlled and sensed. One of the modules in this system is 'GPS Tracker'. This is used to track the vehicle and gives the notification message to the society members. GPS Tracker is used to track the

vehicle remotely. GPS tracker device is attached to the vehicle for collecting the garbage, when vehicle is nearest to the society then notification alert is generated and it gives a message in form of mobile alarm.

1.1 Literature Review

Paper Name: Design and implementation of vehicle tracking system using GPS/GSM/GPRS technology and smartphone application.

Author:

SeokJu Lee

GirmaTewolde

Jaerock Kwon

An efficient vehicle tracking system is designed and implemented for tracking the movement of any equipped vehicle from any location at any time. The proposed system made good use of a popular technology that combines a Smartphone application with a microcontroller. This will be easy to make and inexpensive compared to others. The designed in-vehicle device works using Global Positioning System (GPS) and Global system for mobile communication / General Packet Radio Service (GSM/GPRS) technology that is one of the most common ways for vehicle tracking. The device is embedded inside a vehicle whose position is to be determined and tracked in real-time. A microcontroller is used to control the GPS and GSM/GPRS modules. The vehicle tracking system uses the GPS module to get geographic coordinates at regular time intervals. The GSM/GPRS module is used to transmit and update the vehicle location to a database. A Smartphone application is also developed for continuously monitoring the vehicle location. The Google Maps API is used to display the vehicle on the map in the Smartphone application. Thus, users will be able to continuously monitor a moving vehicle on demand using the Smartphone application and determine the estimated distance and time for the

vehicle to arrive at a given destination. In order to show the feasibility and effectiveness of the system, this paper presents experimental results of the vehicle tracking system and some experiences on practical implementations.

Paper Name: Real time Vehicle tracking system based on ARM7 GPS and GSM technology

Author:

Pradip V Mistry

R H Chile

This Paper presents GPS based tracking system has many application in today's world. For example Vehicle tracking, children tracking, any equipment tracking, fleet management etc. An efficient vehicle tracking system is implemented for monitoring the movement of any equipped vehicle from any location at any time. With the help of Global Positioning System (GPS), Global System for Mobile communication (GSM) modem and microcontroller are embedded with the aim of enabling users to locate their vehicles with ease and in a convenient manner. This system provides the facility to the user to track their vehicle remotely through the mobile network. This paper presents the development of vehicle tracking systems hardware prototype and GUI application for displaying the actual position of vehicle.

1.2 Technologies Used

Software 1: Faveo Framework

The faveo framework is used for the user registration. Faveo is an open source software ticket based support system built on the PHP based Layard framework. The word Faveo comes from Latin, and means "to be favorable". It provides business with an automated helpdesk system to manage customer support. It has an inbuilt knowledge base for self-service by the customer.

Faveo framework version:1.9.23

Software 2: Tracking Location Framework

The linux based cloud server that is domainz is used. When installing the framework one API key is generated, that API key is used in cloud, after entering username, hashkey, passkey user will be authorized to cloud. Tracking location Version of tracking location is 4.3

2. OBJECTIVE

In existing system of garbage collection, garbage VAN enters into society and nearby society people could not

recognize the arrival of VAN. So the idea came into existence which reduces time, effort and maintains hygiene into society and nearby area. This system can be referred as a system for collecting garbage from the house. It gives notification alert about garbage collection van whether it is entered in our area or not.

3. METHODOLOGY

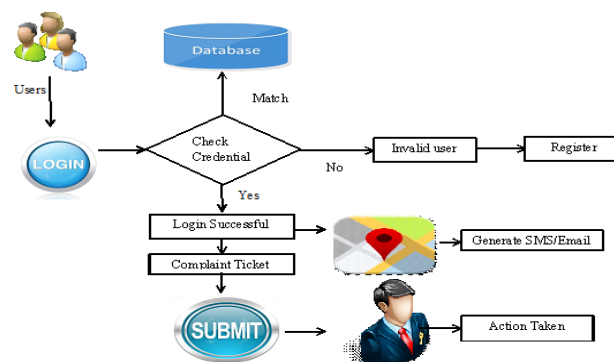


Fig 1: System Architecture

The system works on following module

a) Complaint/Feedback Module

In this module user can send the complaint message by using unique ticket number to the zone admin as well as system administrator. Admin will respond to the complaint message. Also admin can send notification to the user like "Today's status: unavailability of garbage van" therefore users will not wait for vehicle. This module provides transparent communication between users and admin.

b) Tracking Module

In this module user can see the location of the vehicle in any place. When vehicle is near to the society then SMS is received on the users mobile. So it will alert that vehicle is entered into area.

4. ALGORITHM AND DESIGN

4.1. Algorithm for Complaint

1. Input: Email_Id, password
2. Validation: Check whether credentials are valid
3. If credentials are not correct then go to step 4
4. If(member is already registered==True)

Don't register

Else

Do the registration and login.

5. Display Ticket generation page.
6. Create ticket and submit.
7. Automatic Generates a ticket id.
8. Using ticket id user see status of complaint.
9. Logout

4.2 Algorithm for Tracking & Notification

1. Input: Common email_id and password.
2. Display tracking map page.
3. SMS will be automatically generated when tracker is within the distance of 100m and SMS will send on users mobile.

4.3 System Flow

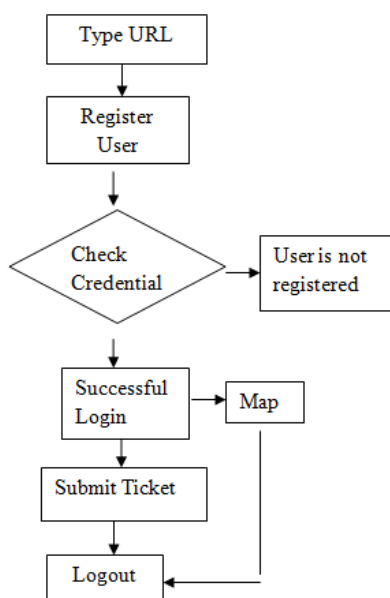


Fig 2: System Flow

5. SCREENSHOTS

Fig 3 shows the map of the tracking location of vehicle.



Fig 3: Location of Vehicle during Tracking

6. CONCLUSION

This application is developed for garbage collection using GT06 and IOT (Internet Of Things) concepts which is a network of physical devices embedded with electronics, software, sensor and networks, connectivity that enables these objects to collect and exchange data. This will provide services to the user such as notification alert, feedback, and complaint. All these features will serve the user by such assisting which will make day to day life easy by connecting devices through internet.

Some of the Advantages

- Feedback
- Proper utilization of Municipal Corporation property
- Clean environment
- Maximum Productivity will be generated

“Smart City Mission” is the basic objective to promote cities that provides core infrastructure and give decent quality of life to the citizens, a clean and sustainable environment and application of smart solution.”

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