IOT Based "SMART DUSTBIN"

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Abstract — *we are planning to design IOT based "Smart Dustbin". In our app, these dustbins are provided with low cost embedded device which helps in tracking the level of the garbage bins and a unique ID will be provided for every dustbin in the city so that it is easy to identify which garbage bin is full. When the level reaches the threshold limit, the device will transmit a message with the level of the waste along with the unique ID of the dustbin. These details can be accessed by the concerned authorities from their place with the help of Internet and an immediate action can be made to clean the dustbins.*

Keywords: - *Arduino Processor, IOT (Internet of Things), GSM sim, GPS modem, GPRS, Ultrasonic Sensor, Microcontroller.*

I. INTRODUCTION

In our application there are many features like personal profile settings where one can change its settings as per his likes. It also comes with the perfect dustbin location where the assigned authorities can keep the track of the garbage level through our web application. The users in this application can update a picture of the garbage if there is no cleanliness is not maintained with the help of this the city can be kept clean. This application also comes with new updates and also indicates the upcoming activities such as "Beti Padhao", "Swachh Bharat Abhiyan" etc. will be displayed on this app. This application also helps outsider people to find the nearby dustbins in city with the help of the Google map. If the user who is staying in the resident and wants a new street dustbin near his area can make request with the help of this application. The dustbin also shows the level of garbage from low medium to high. All the application which is listed above is integrated in one application, through which the user does not have to install different application for different works. Due to this it makes easier to the user to use the application and reduces the time.

II. LITERATURE SURVEY

Ultrasonic sensor is placed at the top of the dustbin which will measure the level of garbage in the dustbin. As it reaches the threshold limit it will send a notification to the concerned authorities. It is also programmed in such a way that when the dustbin is being filled, the remaining height from the threshold height will be displayed [1]. In today's world the way of manually monitoring the wastes in dustbins is a complex. It utilizes more human effort, time and cost which is not compatible with the present day technologies in any way [2]. As per the "Swachh Bharat Abhiyan" we have designed a project named "IOT based Street Garbage Management System for Smart Cities" with the help of Internet of Things (IOT) and cloud computing [3].In garbage collection system senses the garbage level of dustbin according to that with help of GSM system It will send short service message to the driver and to the concerned authorities. The dustbin is also provided with unique id which helps to track each dustbin in the area or the city [4]. The user can make complaint with uploading a picture which contains the exact location of the dustbin. If the trash can is not replaced at a right time, the microcontroller placed at the trash can intimate the information to the corporation office once again [5]. The system makes use of AVR family microcontroller, LCD screen, GPRS, GSM etc for sending Data and to send a notification to the authorities. The system is powered by a 12V transformer. The LCD screen is used to display the status of the level of garbage collected in the bins [6].

III. PROPOSED METHODOLOGY

3.1. System Flow
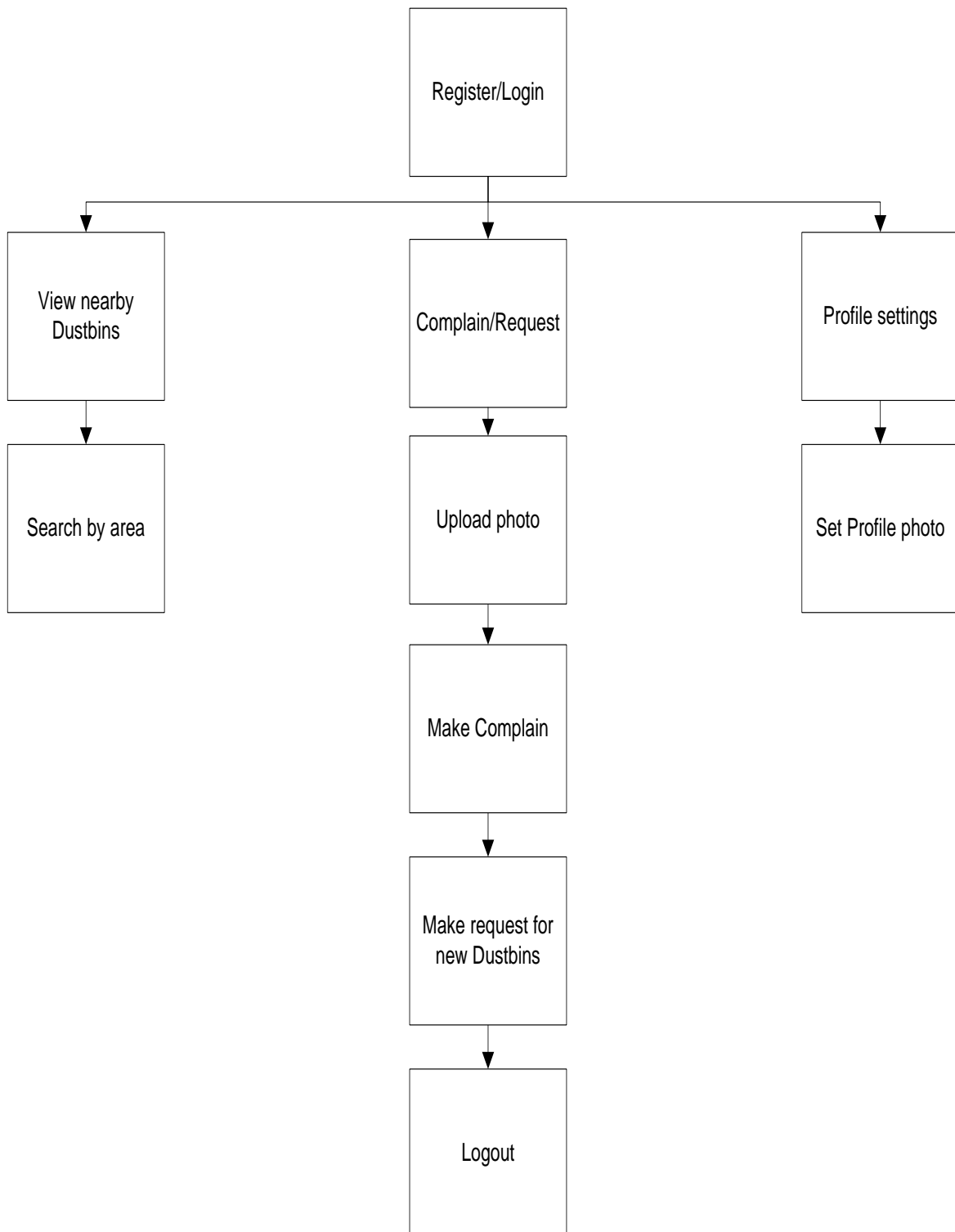
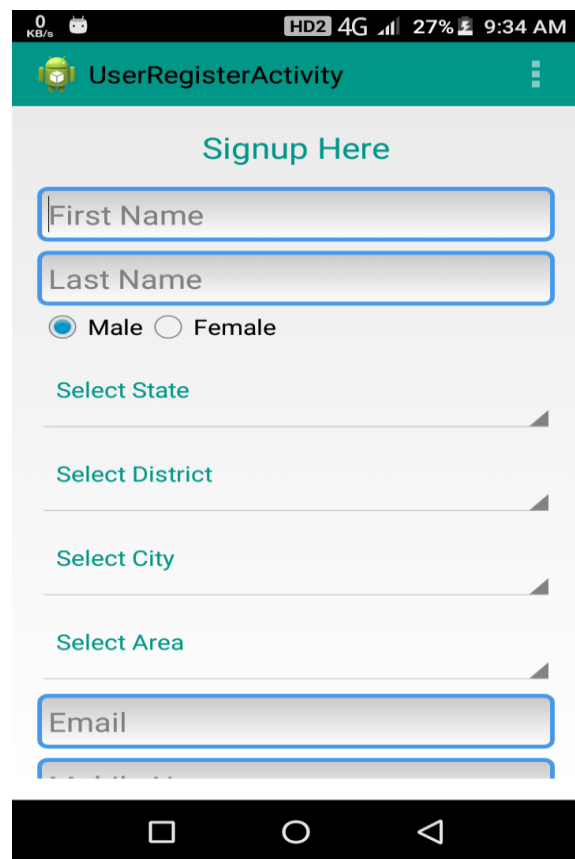*Figure 3.1 System flow*

IV. RESULTS

Figure 4.1 Home page

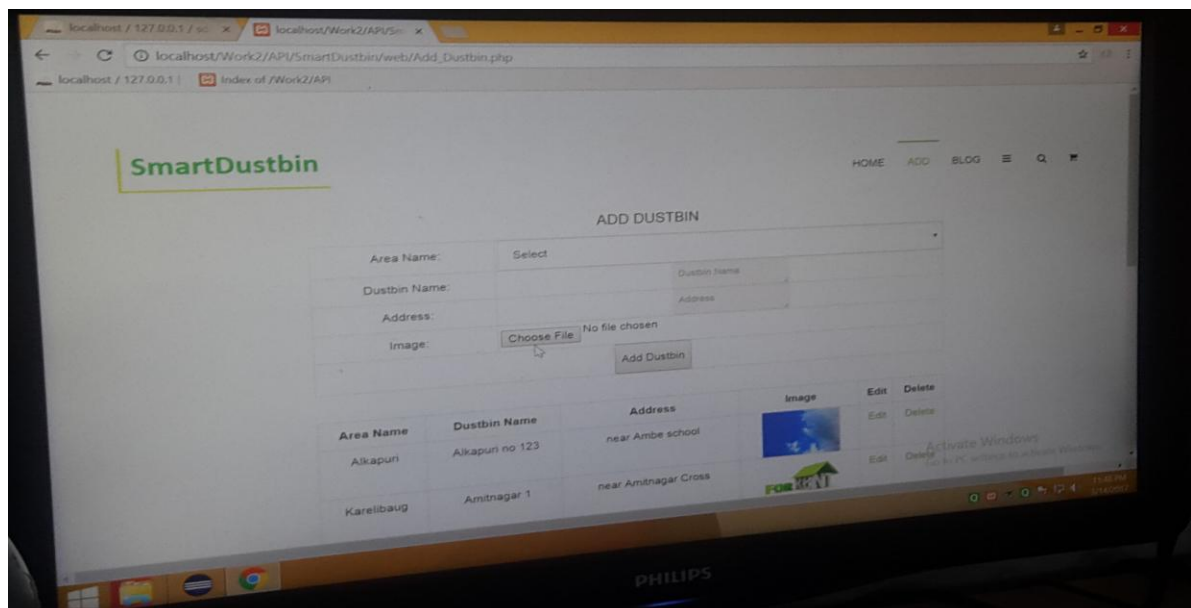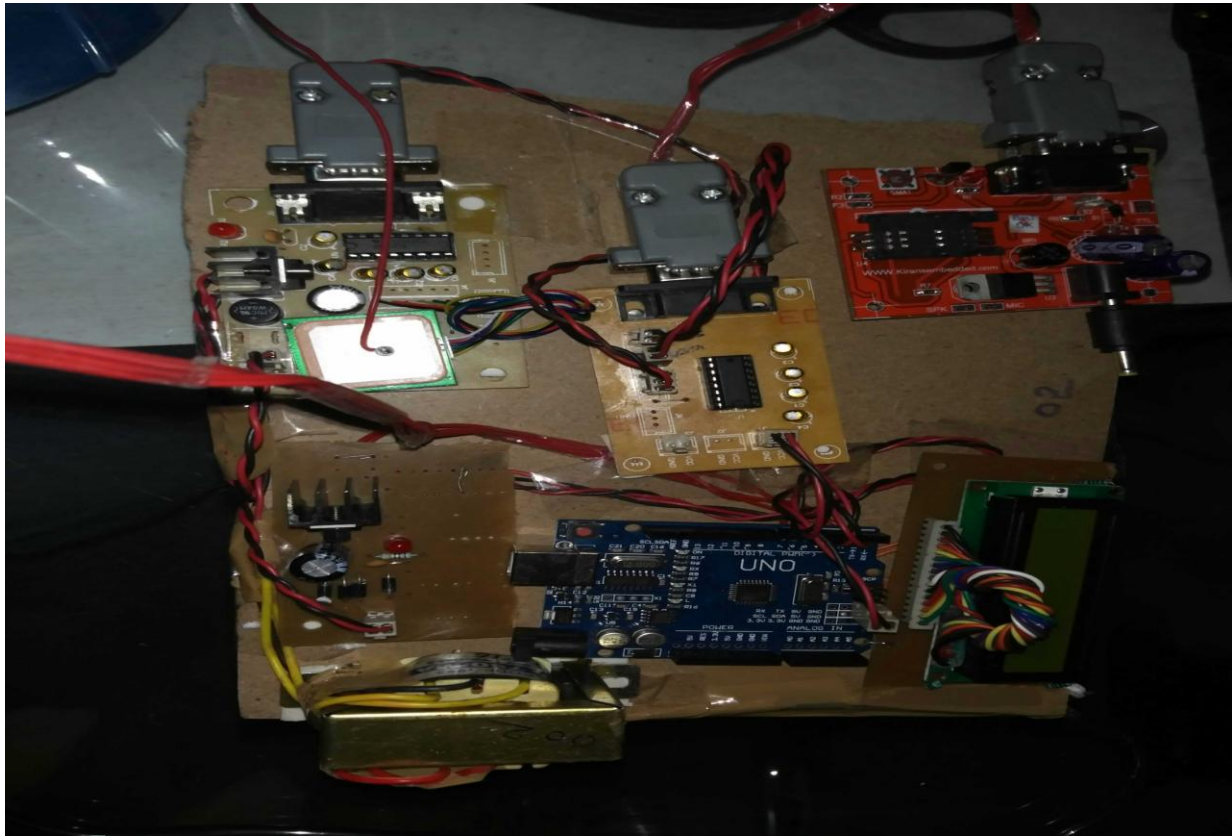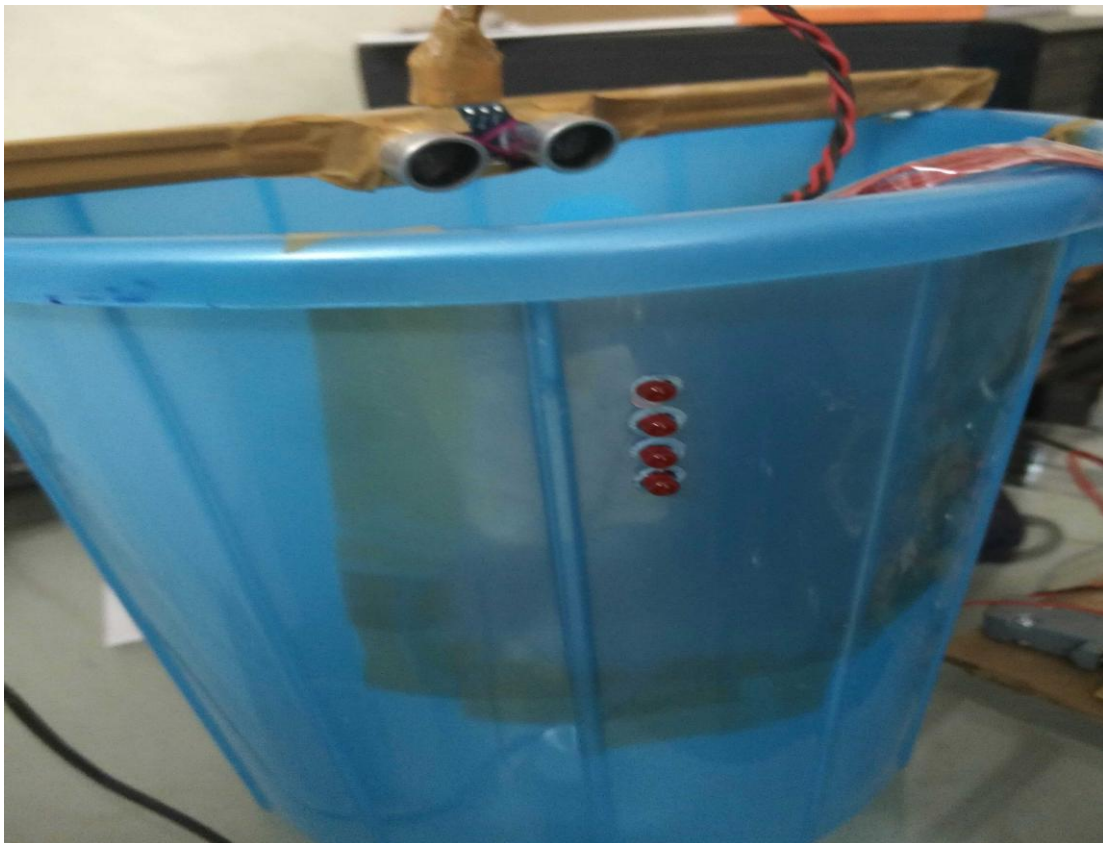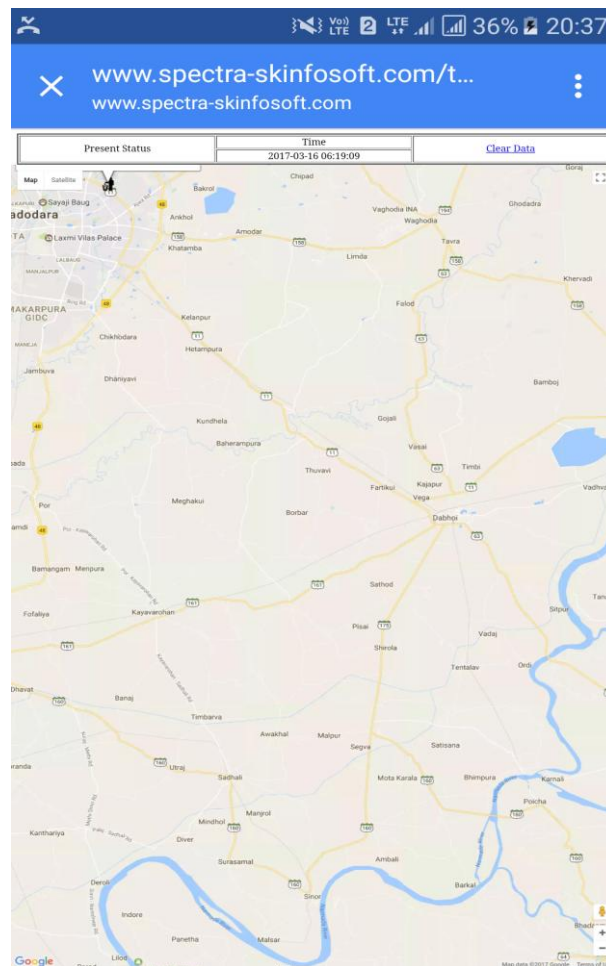*Figure 4.2 Registration page*

Figure 4.3 Web page

Figure 4.4 Device

Figure 4.5 Device

Figure 4.6 GPS Dustbin location view

V.   CONCLUSION AND FUTURE WORK

 We are designing an IOT based android application "SMART DUSTBIN" which provides various facilities such as Monitoring the garbage level of the dustbin, Tracking down the waste for a particular area, Providing additional dustbins and Finding the nearby dustbin. It allows user to access the app easily and make Complain or Request for additional dustbins. It will help the corporatist to track down each dustbin individually and action can be made accordingly. In future we can work on some other important functionalities of this application. We can provide dustbin with 3 different slots for garbage like decomposable, non decomposable and recycle so that the waste can be easily separated.

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