

PROJECT PROPOSAL

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1. Title of the project : GARBAGE TRUCK TRACKER
2. Overview and Objectives of the Project

This system is to make the garbage collecting system of an Urban Council, Municipal council and Town Council more efficient. Using this system, people can be aware of the garbage collecting trucks of their area and properly deliver garbage without any inconveniences. Finally, people can make their neighbourhood a clean and a pleasant.

The system includes a web application, hybrid mobile application for Android, IOS and Windows phone. And a text messaging service for mobile phones.

Real-time location data from GPS tracking devices are input to the system. A detailed real-time map is output with relevant notifications.

3. The Need for the Project

In most of the urban resident areas, there are not any garbage bins. So people have to handover their garbage to the garbage trucks. After doing a quick research, I found out that people face following inconveniences varied from area to area.

- Some areas, the garbage trucks has no tight time schedule. Here, people have two choices. Prepare the garbage parcels early in the day without any rush or right at the very moment when the truck comes with hustle. The first choice will cause bad results, if the truck is absent that day.
- In some areas (e.g. - around university), the garbage trucks are not allowed to use the siren. So the labourers shout, ring gate bells, knock at the gates and inform the neighborhood. So people has to run around and quickly deliver the garbage. If they have not prepared it previously, they faces even more difficulties.
- In some areas, the trucks come only in prescheduled due days. Sometimes they collect only one kind of garbage on some days. People are not fully aware of these variables.
- Garbage trucks usually do not go nook and corner. So the people from small lanes has to come to the main road to deliver the parcels. So they should be acknowledged some extra time ahead.
- In some areas, people have used to give money to the labourers and make them to wait some extra time to pick their garbage. These labourers do not wait much for the other people who does not tip them. So I think this is a bribe more than a tip. (“tips follow the rendering of a service, whereas bribes precede it”) [1]
- Some people are not present at the day time. They prepare the garbage parcels early in the morning and hang them on their gate or place them beside the road. The problem here is, if the truck is absent that day. When they are going to collect the garbage late, it may be staled or destroyed by stray dogs and crows.

4. Scope of the Project

Real-time location data acquired from GPS location tracker planted on each garbage truck is updated to the data base.

System administrator

- Updates and manages the system via web interface.
- Observe the truck fleet on a real-time map via web interface.

Townsmen

- Receive push notifications about garbage trucks via mobile application
- Receive text messages about garbage trucks via mobile phone
- Observe garbage trucks on real-time map via mobile application.
- Observe garbage trucks on real-time map via web application.

5. Deliverables.

This is a web based system. System administrator will get a web based user interface to update the system and observe the truck fleet.

The townspeople will get up to three user interfaces. A website, hybrid mobile application (Android, Windows phone and IOS) and a text messaging service.

6. Overview of Existing Systems and Technology

For now (08/03/2016) there is not a single mobile application related to this phenomena on online application repositories. But there is a web site for tracking garbage trucks in the town of Rothesay in Scotland. But the functionalities are limited. People can only view the current locations of garbage trucks that are travelling at a speed of 5 km/h or greater. Only vehicles in movement will be displayed on the screen. It also allows people to review truck history for the previous 2, 4, 12 and 24 hours. Nothing more than these functionalities. [2]

The fleet tracking systems for truck owners are common. But the fleet tracking is only a one functionality in this proposed system. [3]

After the initial requirement gathering and designing phases, I will try to use the new Meteor framework to build a prototype (Using Meteor I can easily build the web and mobile applications with one code base). If I do not success, I will use Cordova with Ionic to build the hybrid mobile application. And I will have to build a separate web application also. Finally the text messaging user interface using free dialog Ideamart APIs. [4] [5]

References

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- [3] T. Mobile, "TSO Mobile," 2015. [Online]. Available: <http://www.tsomobile.com/mobile-apps.html>.
- [4] "Meteor," [Online]. Available: <https://www.meteor.com/>.
- [5] "Ionic Framework," [Online]. Available: <http://ionicframework.com/>.