

# Pick-Bins

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## Executive Summary

The application 'PICK BINS' is build to solve the waste management problems we've been facing. The confusion on specification between waste management company and customers not only leads to late service, time waste, diseases spread. There are situation when waste was not picked due to communication problem and misunderstanding which leads to overflowed waste polluting our environment. With the help of this app we can create mutual understanding between customers and company. People can use this application to request waste pickup whether it is one time or repeated pickup. The waste pickup request will be fulfilled by waste management agencies partnering with PICK BINS using agency portal of application

## Conceptual Design Phase

### 2.1 USER LAYER

The user layer represents the user interface of the application. This layer handles taking input from the user and displaying the output on the screen. This layer serves various UI templates such as Start Screen, Login, Dashboard, Request Form, Schedule Display Screen, Task List Screen, Pick Up Confirmation Screen. This layer has two subsystems: User Authentication and User Interface.

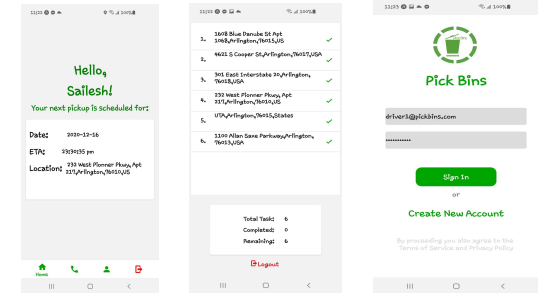
### 2.2 SERVER LAYER

Server layer is the bridge between user interface and database. It is also a control center for the application. Server layer includes Google Map API, Rest API as a subsystem for the application.

### 2.3 DATABASE LAYER

Database is the layer where all the information collected from the user or other important information will be stored for complete functioning of the application.

## Prototype & Test



## Background

Every household produce nearly 30-45 gallons of waste per day. These wastes are either dumped into the garbage container or left on the curbside to be collected by a waste management company. The major issue is that these wastes are exposed to the environment for several hours or days. This causes the waste to undergo biochemical reaction that produces the foul smell. This often leads to sanitation and hygiene issues. The solution to this problem is simple, get rid of the waste quickly. However, there is flaw in the waste management system which lead to the waste being uncollected for several days. Most waste management company has their own operational policies to collect the waste from a neighborhood. For example, some companies requires residents to leave the trash cart at the curb by 7 am on the pickup day. If the residents miss the deadline, they will have to wait certain days for their waste to be collected again. Most companies offer a customer service if the resident missed the waste collection. However, the response time takes at least 24 hours depending on the company. The goal of this project is to help residents to get rid of the waste as quickly as possible. To achieve this goal, there should be an effective communication channel between the waste management company and the resident. Through this communication channel, the company can send the notification to its customer regarding the arrival time of the garbage collecting vehicle. So that customer will not miss the waste collection. This communication channel can enhance the company to deliver the service the customer quickly and efficiently that can even promote their business.

## Detailed Design Phase

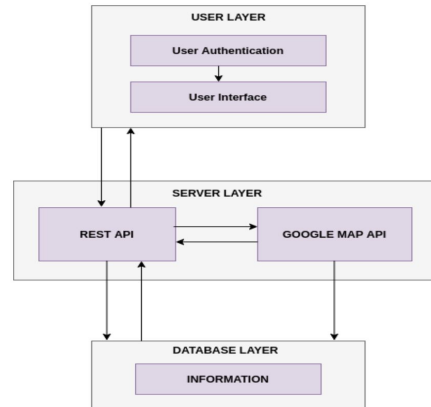


Figure 2: A simple data flow diagram

## Conclusions

Pick-Bins aims to create a communication link between the waste management company and its users. We are going to build an mobile application which serves as a communication channel. The goal of this application is to inform its users about the schedule to collect the waste. The application will be cross-platform i.e it can run on iOS and android phones. This capstone project has helped us a lot and provided us with the feel how the "real world" work feels like. We developed a native mobile app and web application from scratch starting from requirement gathering. We followed an agile method of development where we divided tasks for each sprint and came up with a deliverable after every sprint. This project allowed us to work as a part of the team and contribute.

## References