Online Waste Management System

Guide : Sangam Reddy

Github link - https://github.com/anuj-rathore/Waste-Management-System.git

Team 5

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Agenda

- Problem at hand..!
  - Problem Statement
  - Features
  - Flow Diagram
  - Assumptions
- Stakeholders
  - Categories of Stakeholders
  - Roles of Direct Stakeholders
- Requirements
- Sequence Diagrams
  - Raise Pickup Request
  - Create Order
- Design and Architecture
  - High Level Architecture
  - Class Diagram
  - Data Model
- Technologies

Problem at hand..!

Problem statement

The purpose of the project is to make the process of waste management easier by bridging the gap between Waste Generators like households, hospitals, schools, industry, environmental organizations etc and Waste Managers(recycle and sell the products).

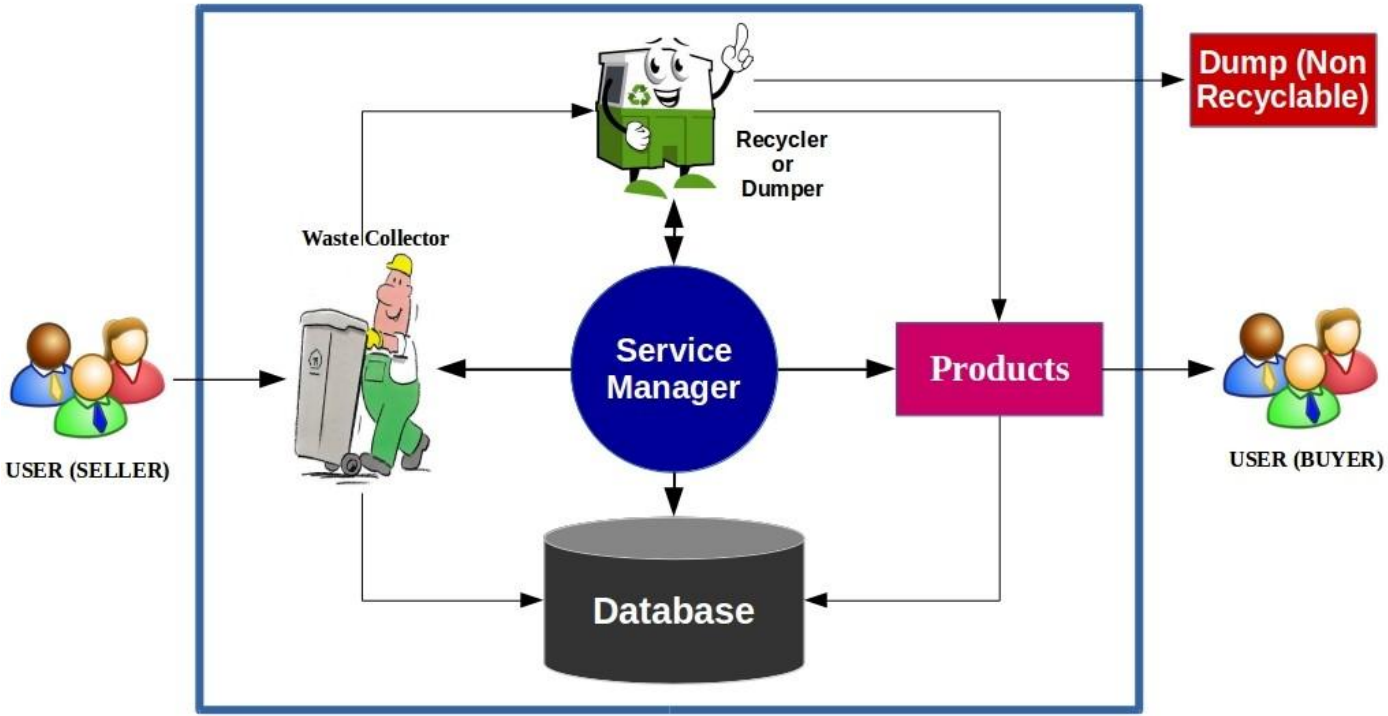
In brief, this system provide a method to characterize and collect wastes from different users, treat/recycle it and sell it further.

So, this system will define waste, request for collection of waste and schedule collection and charge/pay based on the type of waste. The proposed system is a computerized system with centralized databases.

Features

- An interface for waste generators to create request for waste collection. It includes details like location, type of waste, charges for collection.
- The system will provide admin access to Service Manager through admin interface.
- The system will assign available waste Collector to handle and process the request.
- After processing and segregation, the waste will be sent for recycling or disposed off to some interested parties like NGOs and Govt Agencies.
- The system will enable buyers to purchase the recycled product, get notified/track the order.
- The system will involve some notification system such as sending mails which will be used to send regular updates to involved parties.

Flow Diagram



Assumptions

- We are not handling, though we are collecting, any non-recyclable wastes. It is disposed of to external agencies. **(Boundary of our problem)**
- Largely, the user is expected to know the type of waste. However, we will provide the short description of categories of wastes in the web page.
- We assume the availability of working Internet Connection.

Stakeholders

Who are the Stakeholders

Direct Stakeholders

- Waste Generator
- Service Manager
- Waste Collector/Delivery Boy
- Buyer

Indirect Stakeholders

- Environmental Agencies
- Government of State/Central Govt

Roles of Direct Stakeholders

- **Waste Generator** : Entities like households, hospitals, schools, industry, environmental organizations etc. that generate the waste and sell them to the company.

- **Service Manager** : A person who is having admin access and is responsible for tasks such as add/delete waste collectors, add/modify/delete charges, add/modify/delete category of waste, track/cancel/place order as per company's policy, view/respond to feedbacks.

- **Waste Collector/Delivery Boy** : They collect waste from the user upon his/her request or delivery the ordered products. Waste Collectors have special permissions like cancelling the request if the user enters the wrong garbage details.

- **Buyer** : A person who purchases the recycled product.

Requirements

Requirements

- Provides provision to request for collection of waste (sell) by defining the type of waste eg. industrial waste/degradable waste/e-waste/household waste etc and quantity of waste.
- Provides ability to delete request by the collector when the details of the waste entered by the user is wrong in terms of either type of waste or quantity.
- Provides provision to assign waste collector based on the user request.
- Provides facility to add/remove waste collectors, category of waste and view/change cost per quantity for each category of waste.
- Provides provision to sell the recycled products.
- Provides ability to track/cancel the shipment/order.
- Provides ability to give feedback about the product..
- Provides ability to Service Manager to get notified every activity, status of the transactions and respond to feedbacks.

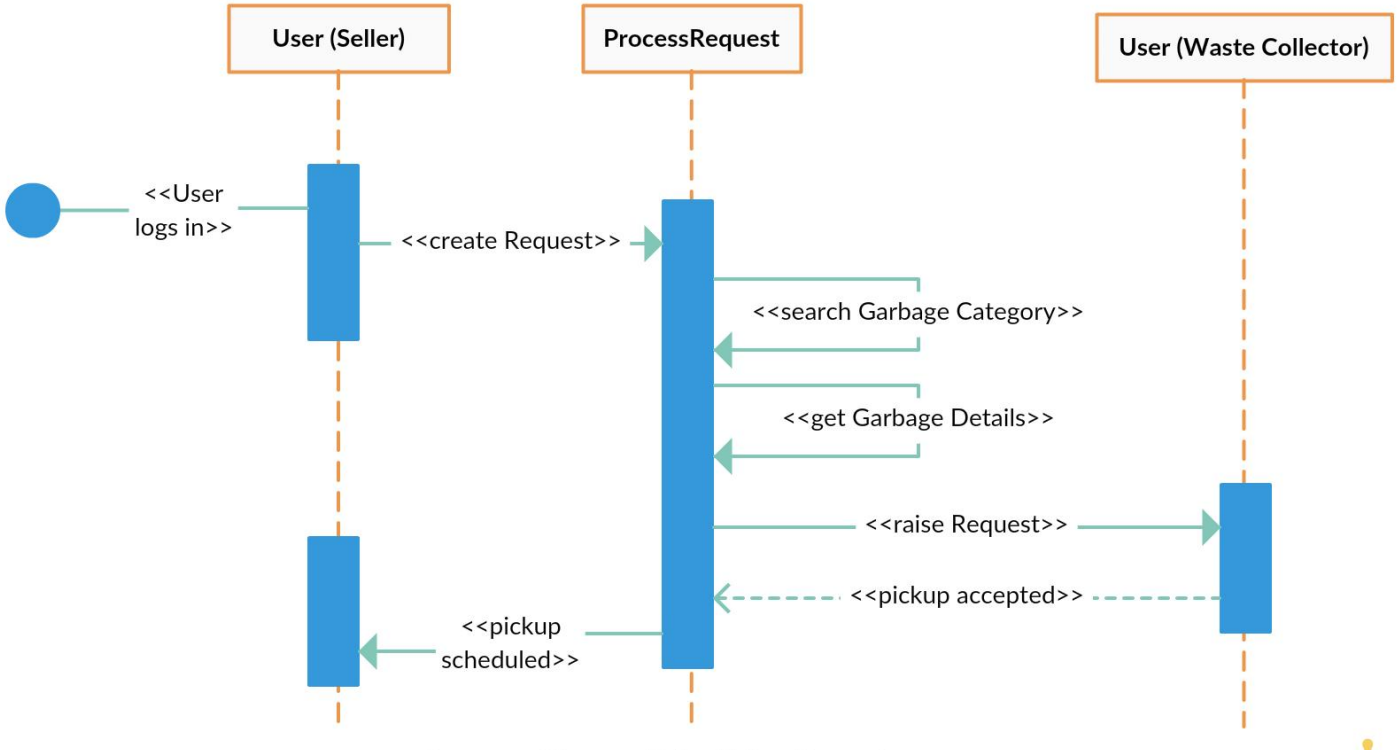
Non-Functional Requirements

Performance : 95% of the time, delay for every user actions is below 2 sec.

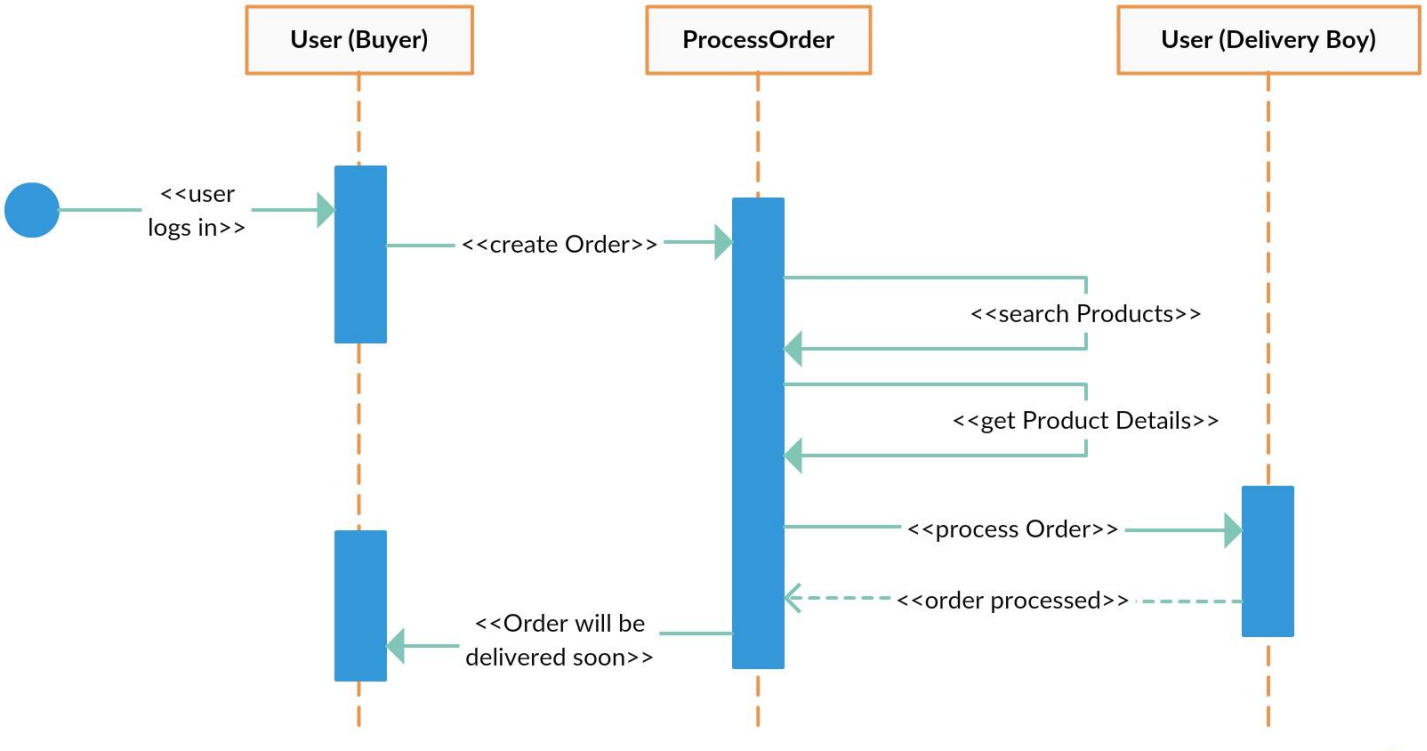
Availability : The system shall meet or exceed 2 Nines.

Sequence Diagrams

Raise Pickup Request

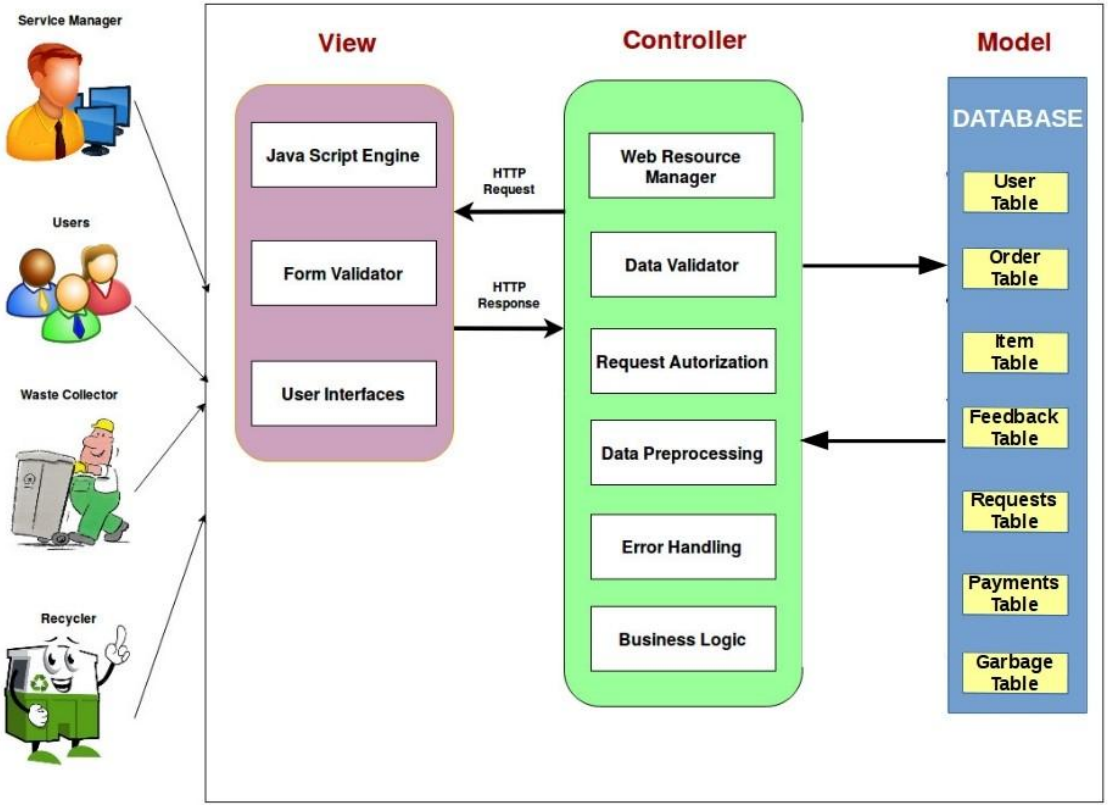


Create Order

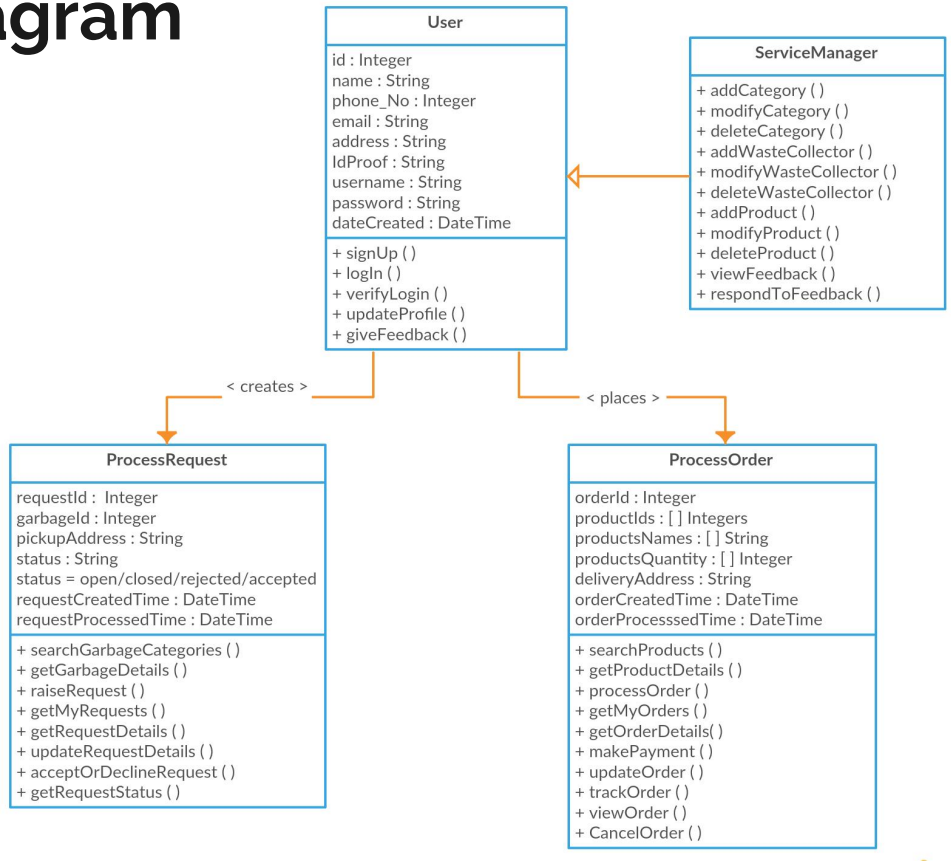


Design and Architecture

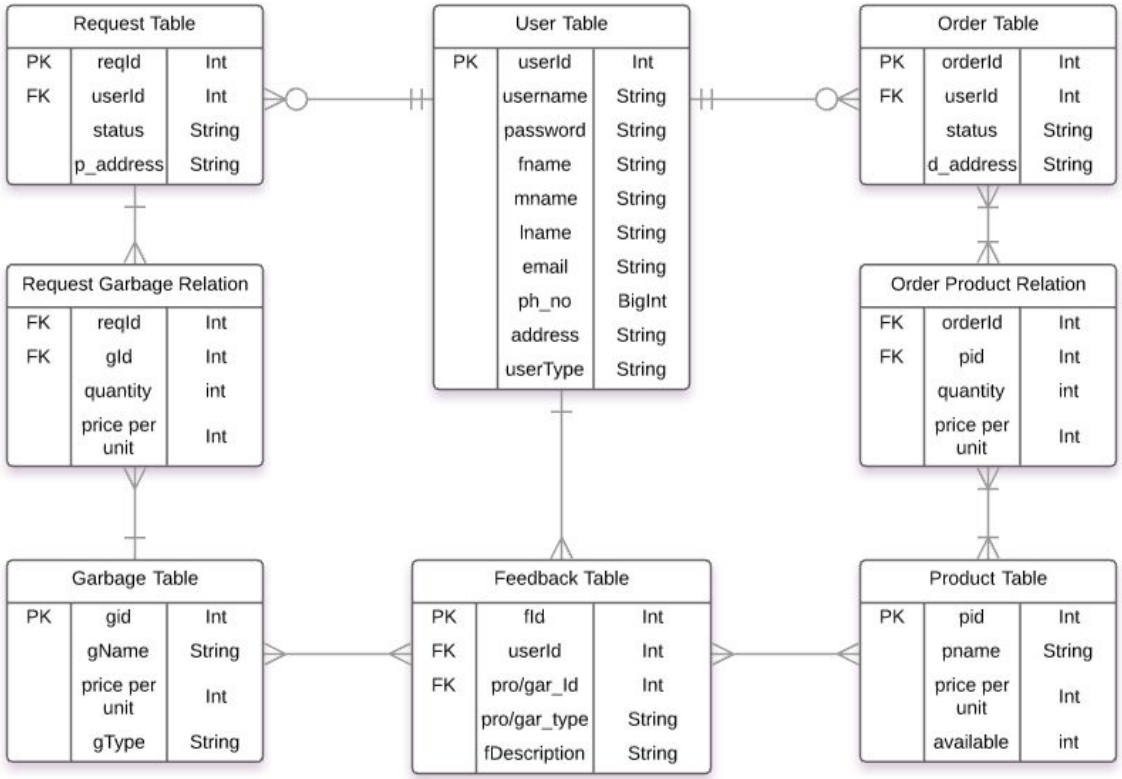
High Level Architecture



Class diagram



Data Model


Request Table
PK reqId Int
FK userId Int
status String
p_address String
User Table
PK userId Int
username String
password String
fname String
mname String
lname String
email String
ph_no BigInt
address String
userType String
Order Table
PK orderId Int
FK userId Int
status String
d_address String
Request Garbage Relation
FK reqId Int
FK gId Int
quantity int
price per unit Int
Order Product Relation
FK orderId Int
FK pid Int
quantity int
price per unit Int
Garbage Table
PK gid Int
gName String
price per unit Int
gType String
Feedback Table
PK fId Int
FK userId Int
FK pro/gar_Id Int
pro/gar_type String
fDescription String
Product Table
PK pid Int
pname String
price per unit Int
available int

Technologies

Technologies

- **Django** - Django provides an easy to use MVC architecture with inbuilt functionality for user authentication.
- **MySQL** - We will be using MySQL database system for maintaining databases.
- **Front End** - Javascript, CSE, HTML

Thank You ..!