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Documentation On

“SMART CITY”

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Project Guide

Table of Contents

1. Introduction	1
Document Purpose	2
Problem Statement	2
Product Scope	2
Aim & Objectives	2
2. Overall Description	3
Product Perspective	3
Benefits of Smart City Portal	3
User and Characteristics	3
Operating Environment	3
Design and Implementation Constraints	3
3. Requirements Specification	4
External Interface Requirements	4
Non-Functional Requirements	12
4. System Diagram	11
Activity Diagram	11
Data Flow Diagram	13
Class Diagram	15
Use Case Diagram	16
ER Diagram	16
5. Table Structure	17
Admin	17
Citizen	17
Complaints	17
Dept	18
Property tax	18
6. Conclusion	19
Future Scope	19
7. References	20

List of Figures

Figure 1 Admin Activity Diagram	11
Figure 2 User Activity Diagram	12
Figure 3 Level 0 Data Flow Diagram	13
Figure 4 Level 1 Data Flow Diagram	13
Figure 5 Level 2 Data Flow Diagram for Admin	14
Figure 6 Level 2 Data Flow Diagram for User	14
Figure 7 Class Diagram	15
Figure 8 Use Case Diagram	16
Figure 9 ER Diagram	16

1. Introduction

Smart city is web portal based java technology which provide various facilities to citizens. This infrastructure is used 24 hours, seven days a week by various citizens. There is wide range of services and applications. These services cover fields such as public utilities, social care public safety. Emerging application and services are extended into diverse fields such as everyday life of citizen. Smart city services and applications are focusing on how to shape future Internet based services and applications from smart city perspective. It is technological solution and communication platform for development of city services in relation to the improvement of urban systems and services. This web portal to ensure a view of the citizen and real time updates of information across city systems. This portal permits to better communicate with constituents.

Document Purpose

The advancement in Information Technology and internet penetration has greatly enhanced various business processes and communication. This Smart City web portal is developed to provide the following services:

General Information About City:

It will provide an information of events that are currently going on in that city.

E-services:

In that, which govt. services are available for that particular citizen.

News:

Current affairs in that city.

Complaint & Feedback:

Feedback and complaint given by citizens about service.

Problem Statement

Visitors of city are dependent on citizens for getting information based on traditional way keeping records and details on paper and registers. It is hard to manage all the system with pen and paper. It gets really hard to maintain the records and then keep track of past records. Hence this system is proposed to overcome the flaws of the existing system and giving power to the admin so that he/she will be able to manage records of visitors.

Product Scope

This project traverses a lot of areas ranging from business concept to computing field, and required to perform several researches to be able to achieve the project objectives. The area covers include:

- It can be accessed by unlimited number of users.
- Each user will be assigned a different set of permissions for each module of the system.
- The user can have access to all the information in the site with limited services and provide extra services to registered users.
- Track all the transaction details of the customer.
- Confirmation of end user identity and will verify which users are authorized to receive support. Maintain history of each customer and their related Maintain history of each customer and their related information.
- Every user must have their ID & PASSWORD for security purpose and AC.NO for transaction purpose.
- Only registered members will be provided with communication between user, experts and general public through poll/chat/emails.
- Administrator is created in the system already.
- The administrator has to generate daily/weekly/monthly reports of the business and political news of the city.
- This site is best designed to be useful through internet to people of different places.

Aims & Objectives

Specific goals are: -

- To produce a web-based system that allow the administrator to provide functionalities to its role.
- To ease users by providing different functionalities to it.
- To ease the supply of information about the city.

Overall Description

Product Perspective:

2.1.1 Existing system function:

In Existing system the person who are visiting a particular city need to gather information from the person who is staying in the city or take the help of the guide in the city. Gather of all these information you need to visit the city. This poses a lot of time and pre-planning. In order to get each piece of information we need to go for help desk.

2.1.2 Limitations of existing system:

- The existing system is a manual system. Here the city information needs to save his information in the form of excel sheets or Disk Drives.
- There is no sharing is possible if the data is in the form of paper or Disk drives.
- The manual system gives us very less security for saving data; some data may be lost due to mismanagement.
- It's a limited system and fewer users friendly.

● III. Proposed System

The Proposed System provides an online information about the particular city going to visit. It also provides additional services to the registered user. The development of this new system contains the following activities, which try to automate the entire process keeping in the view of database integration approach.

- User Friendliness is provided in the application with various controls provided by system Rich User Interface.
- The system makes the overall project management much easier and flexible.
- It can be accessed over the Intranet.
- The city information files can be stored in centralized database which can be maintained by the system.

Benefits of Smart City Portal

- This online smart city portal is fully functional and flexible.
- It is very easy to use.
- This online smart city portal helps in back office administration by streamlining and standardizing the procedures.
- It saves a lot of time, money and labour.
- Eco-friendly: The monitoring and the overall use becomes easy and includes the least of paper work.
- The application acts as an office that is open 24/7.
- It increases the efficiency of the management at offering quality services to the users.
- It provides custom features development and support with the application.

Users and Characteristics:

Admin:

- Admin can login to the system.
- View the list of all Users of the portal.
- Add new User.
- Delete User.
- Update User.
- View Complaints of visitors.
- View feedbacks provided by visitors

Users:

- User can login to the system.
- View his/her details.
- View information about city.
- Generate complaints.
- Give feedback.
- Update their personal credentials.

Operating Environment:

Server Side:

Processor: Intel® Xeon® processor 3500 series

HDD: Minimum 500GB Disk Space

RAM: Minimum 2GB

OS: Windows 8.1, Linux 6

Database: MySQL

Client Side (minimum requirement):

Processor: Intel Dual Core

HDD: Minimum 80GB Disk Space

RAM: Minimum 1GB

OS: Windows 7, Linux

Design and Implementation Constraints:

- The application will use JavaScript, jQuery and css as main web technologies.
- HTTP and FTP protocols are used as communication protocols. FTP is used to upload the web application in live domain and the client can access it via HTTP protocol.
- Several types of validations make this web application a secured one and SQL Injections can also be prevented.
- Since Smart City is a web-based portal, internet connection must be established.
- The Smart City will be used on PCs and will function via internet or intranet in any web browser.

Specific Requirement

External Interface Requirements:

User Interfaces:

- All the users will see the same page when they enter in this website. This page asks the users a username and a password.
- After being authenticated by correct username and password, user will be redirect to their corresponding profile where they can do various activities.
- The user interface will be simple and consistence, using terminology commonly understood by intended users of the system. The system will have simple interface, consistence with standard interface, to eliminate need for user training of infrequent users.

Hardware Interfaces:

- No extra hardware interfaces are needed.
- The system will use the standard hardware and data communication resources.
- This includes, but not limited to, general network connection at the server/hosting site, network server and network management tools.

Application Interfaces:

OS: Windows 7, Linux

Web Browser:

The system is a web-based application; clients need a modern web browser such as Mozilla Firefox, Internet Explorer, Opera, and Chrome. The computer must have an Internet connection in order to be able to access the system.

Communications Interfaces:

- This system uses communication resources which includes but not limited to, HTTP protocol for communication with the web browser and web server and TCP/IP network protocol with HTTP protocol.
- This application will communicate with the database that holds all the user information. Users can contact with server side through HTTP protocol by means of a function that is called HTTP Service. This function allows the application to use the data retrieved by server to fulfil the request fired by the user.

System Design

Activity Diagram

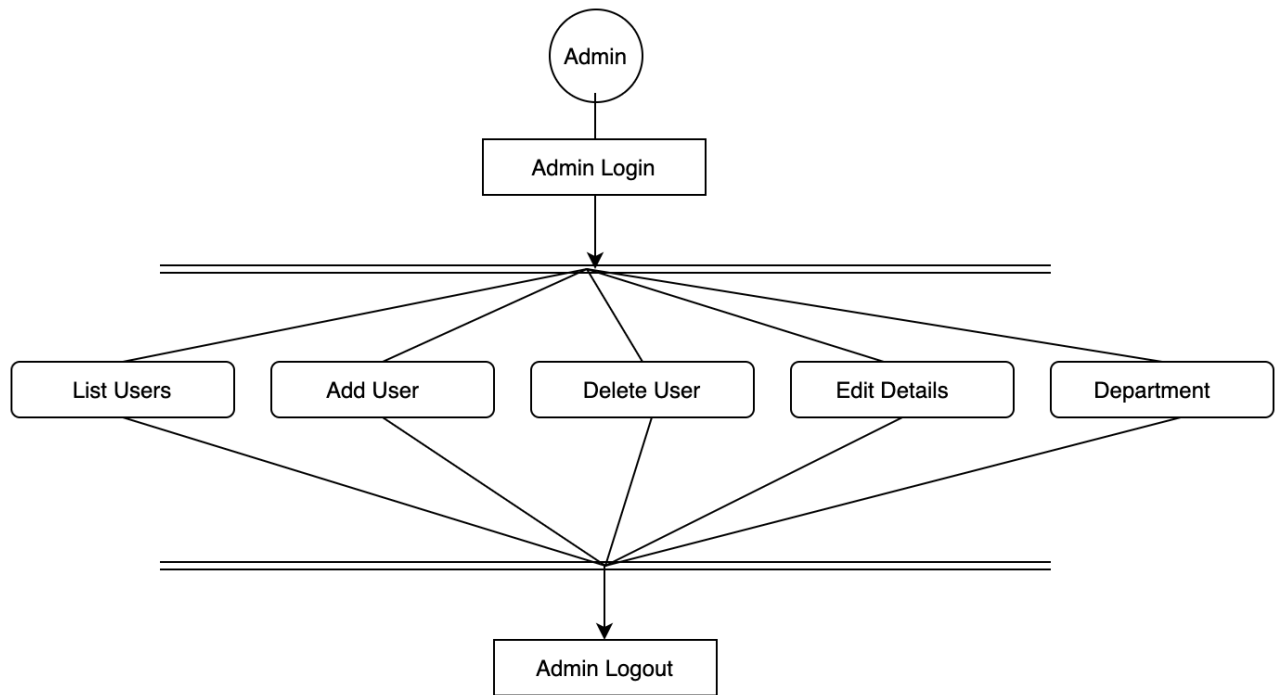


Figure 1: Admin Activity Diagram

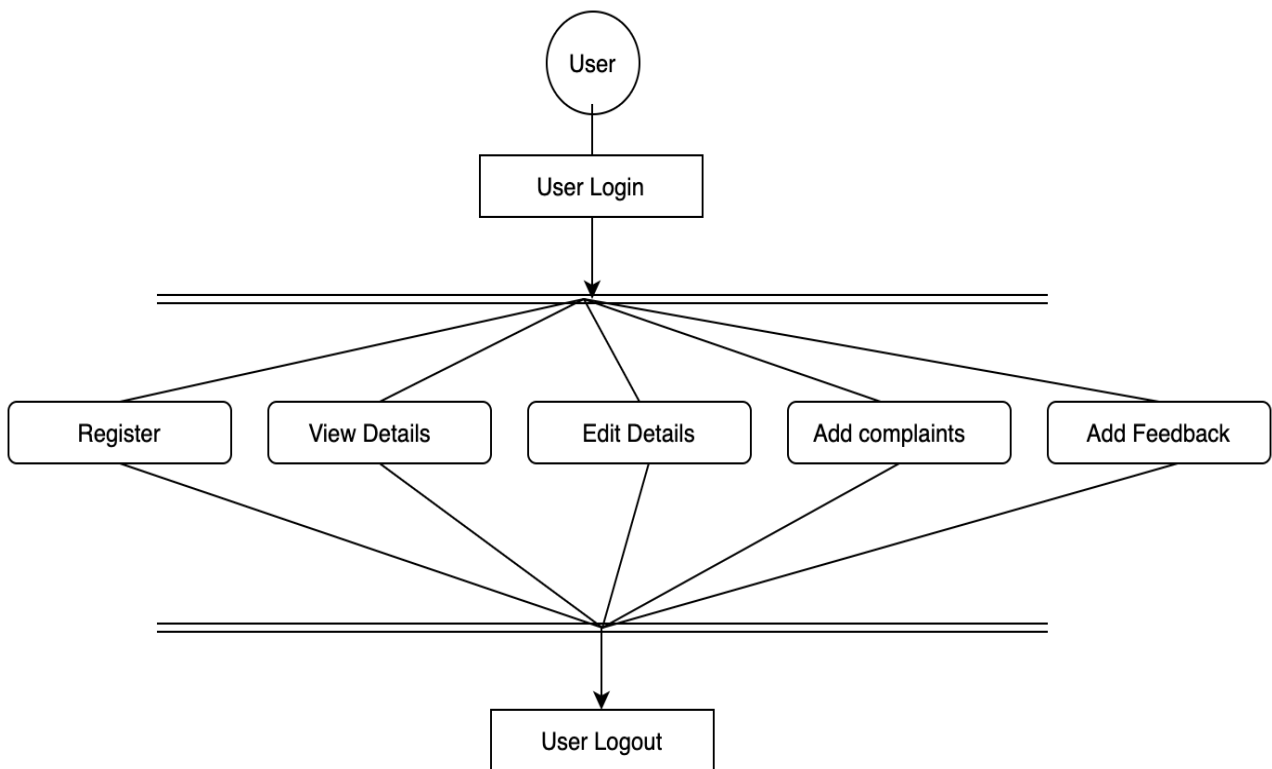


Figure 2: User Activity Diagram

Data Flow Diagram



Figure 3: Level 0 Data Flow Diagram

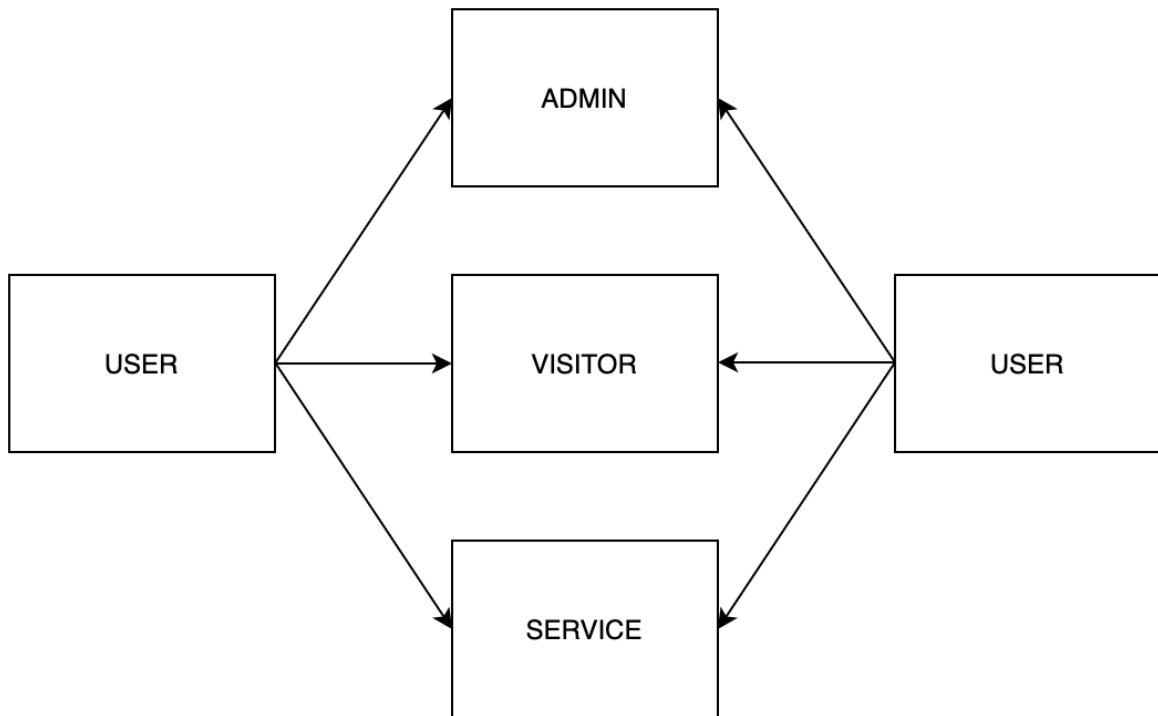


Figure 4: Level 1 Data Flow Diagram

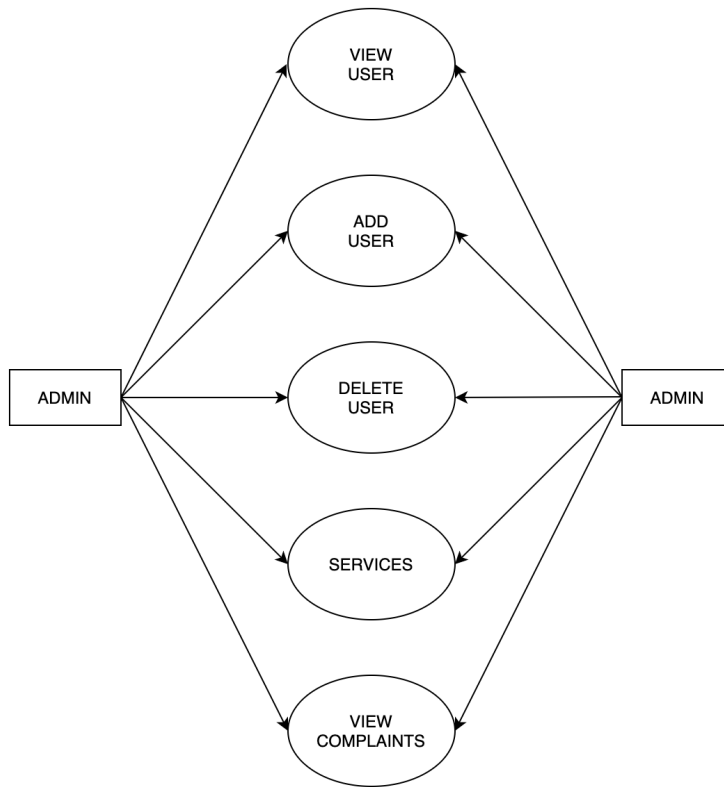


Figure 5: Level 2 Data Flow Diagram for Admin

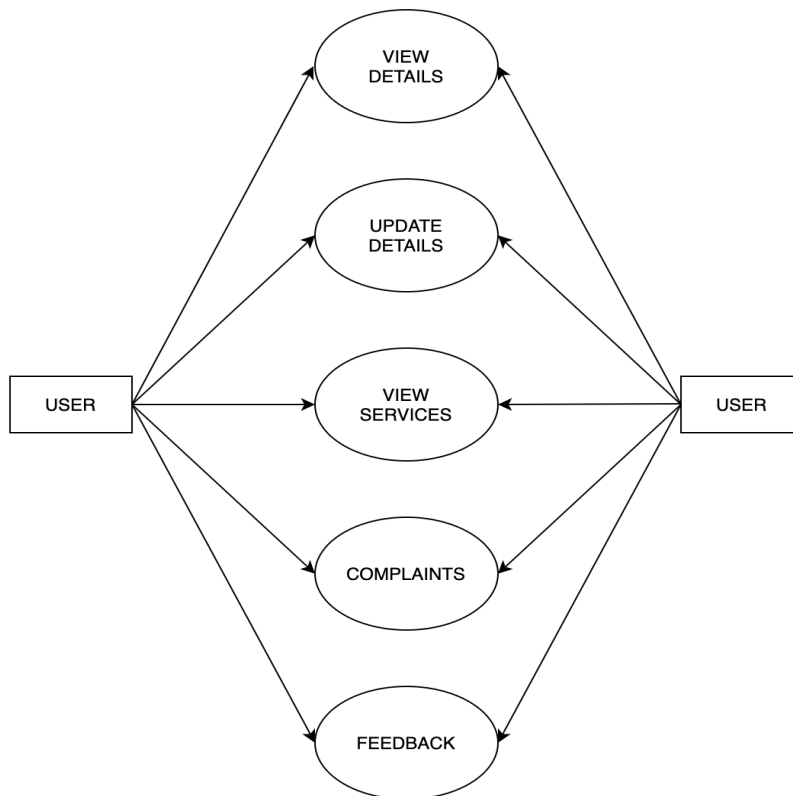


Figure 6: Level 2 Data Flow Diagram for User

Class Diagram

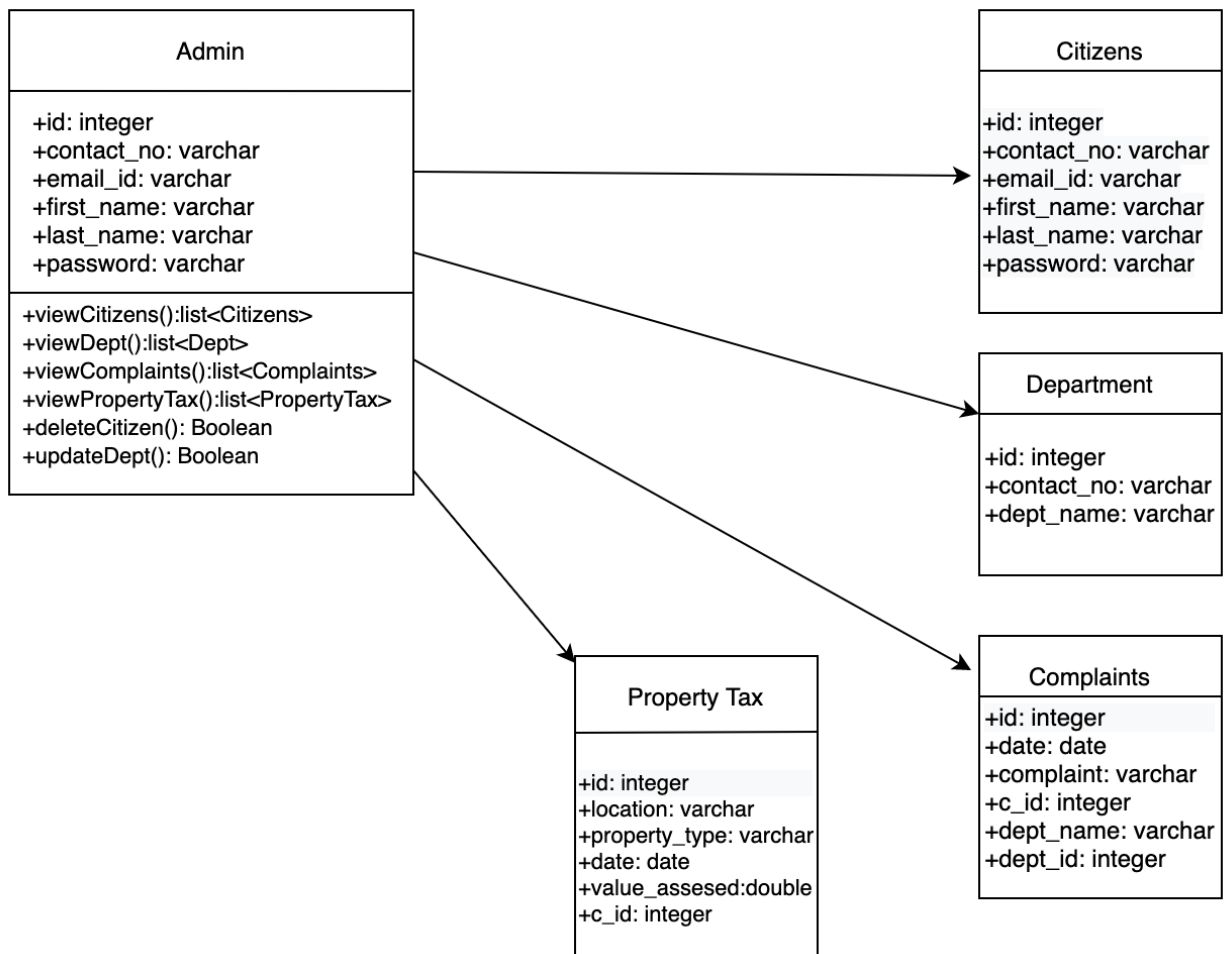


Figure 7: Class Diagram

Use Case Diagram

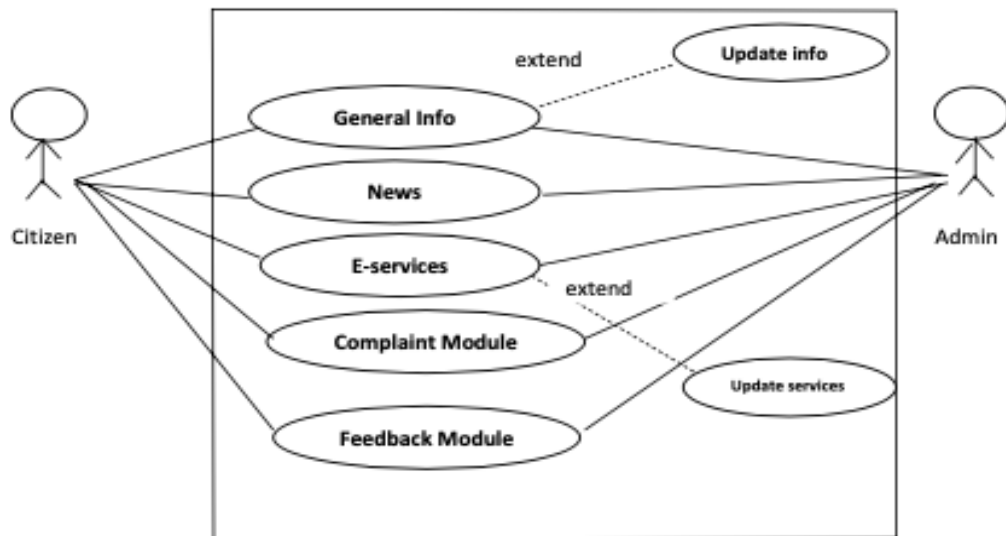


Figure 8: Use case Diagram

ER Diagram

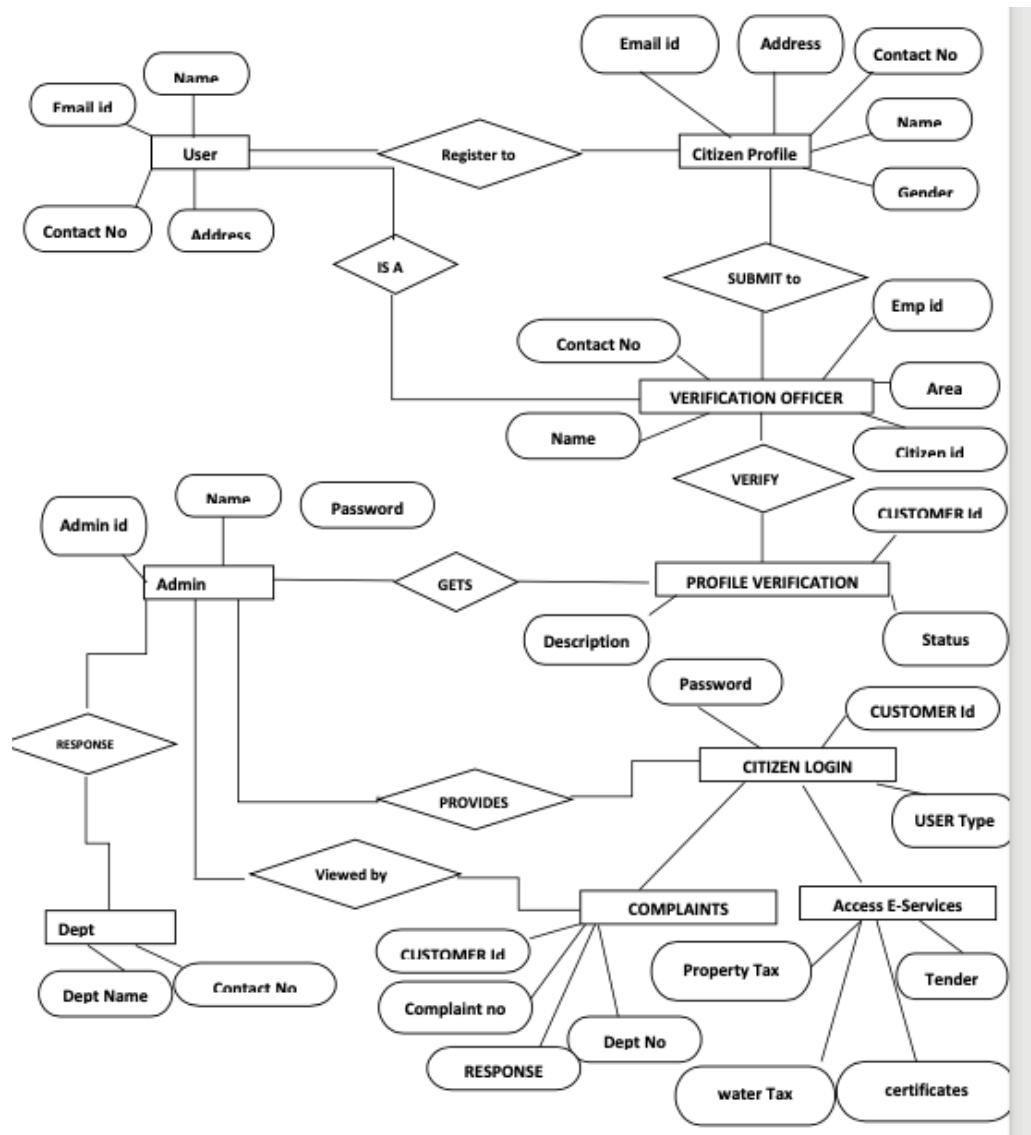


Figure 9: ER Diagram

Table Structure

Admin:

```
MySQL 8.0 Command Line Client - Unicode
+-----+
| dept  |
| property_tax |
+-----+
5 rows in set (2.94 sec)

mysql> desc admin;
+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+
| id         | bigint        | NO   | PRI | NULL    |       |
| contact_no | varchar(255)  | YES  |     | NULL    |       |
| email_id   | varchar(255)  | YES  |     | NULL    |       |
| first_name | varchar(255)  | YES  |     | NULL    |       |
| last_name  | varchar(255)  | YES  |     | NULL    |       |
| password   | varchar(20)   | NO   | UNI | NULL    |       |
+-----+
6 rows in set (0.59 sec)

mysql>
```

Citizen:

```
MySQL 8.0 Command Line Client - Unicode
+-----+
6 rows in set (0.59 sec)

mysql> desc citizens;
+-----+
| Field      | Type          | Null | Key | Default | Extra      |
+-----+
| id         | bigint        | NO   | PRI | NULL    | auto_increment |
| contact_no | varchar(255)  | YES  |     | NULL    |               |
| email_id   | varchar(255)  | YES  |     | NULL    |               |
| first_name | varchar(255)  | YES  |     | NULL    |               |
| last_name  | varchar(255)  | YES  |     | NULL    |               |
| password   | varchar(20)   | NO   | UNI | NULL    |               |
+-----+
6 rows in set (0.84 sec)

mysql>
```

Complaints:

```
MySQL 8.0 Command Line Client - Unicode
mysql> desc complaints;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id     | bigint | NO   | PRI | NULL    | auto_increment |
| date   | date   | YES  |     | NULL    |                |
| complaint | varchar(255) | YES |     | NULL    |                |
| c_id   | bigint | YES  | MUL | NULL    |                |
| dept_name | varchar(100) | YES | MUL | NULL    |                |
| dept_id | bigint | YES  | MUL | NULL    |                |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.05 sec)

mysql> _
```

Dept:

```
MySQL 8.0 Command Line Client - Unicode
mysql> desc dept;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id     | bigint | NO   | PRI | NULL    | auto_increment |
| contact_no | varchar(10) | YES |     | NULL    |                |
| dept_name | varchar(100) | YES | UNI | NULL    |                |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.09 sec)

mysql>
```

5.4 Property Tax:

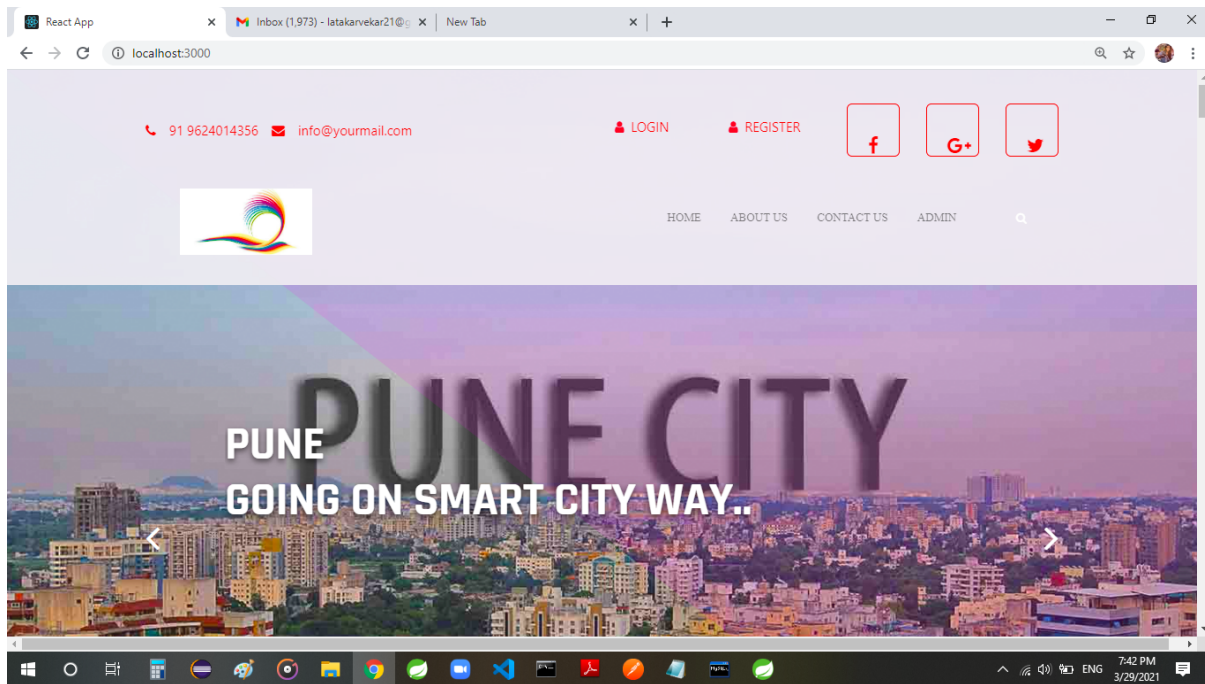
```
MySQL 8.0 Command Line Client - Unicode
+-----+-----+-----+-----+-----+
| complaint | varchar(255) | YES | NULL | |
| c_id | bigint | YES | MUL | NULL |
| dept_name | varchar(100) | YES | MUL | NULL |
| dept_id | bigint | YES | MUL | NULL |
+-----+-----+-----+-----+
6 rows in set (0.05 sec)

mysql> desc property_tax;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id | bigint | NO | PRI | NULL | auto_increment |
| location | varchar(255) | YES | | NULL | |
| date | date | NO | | NULL | |
| property_type | varchar(255) | YES | | NULL | |
| value_assessed | double | NO | | NULL | |
| c_id | bigint | YES | MUL | NULL | |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.05 sec)

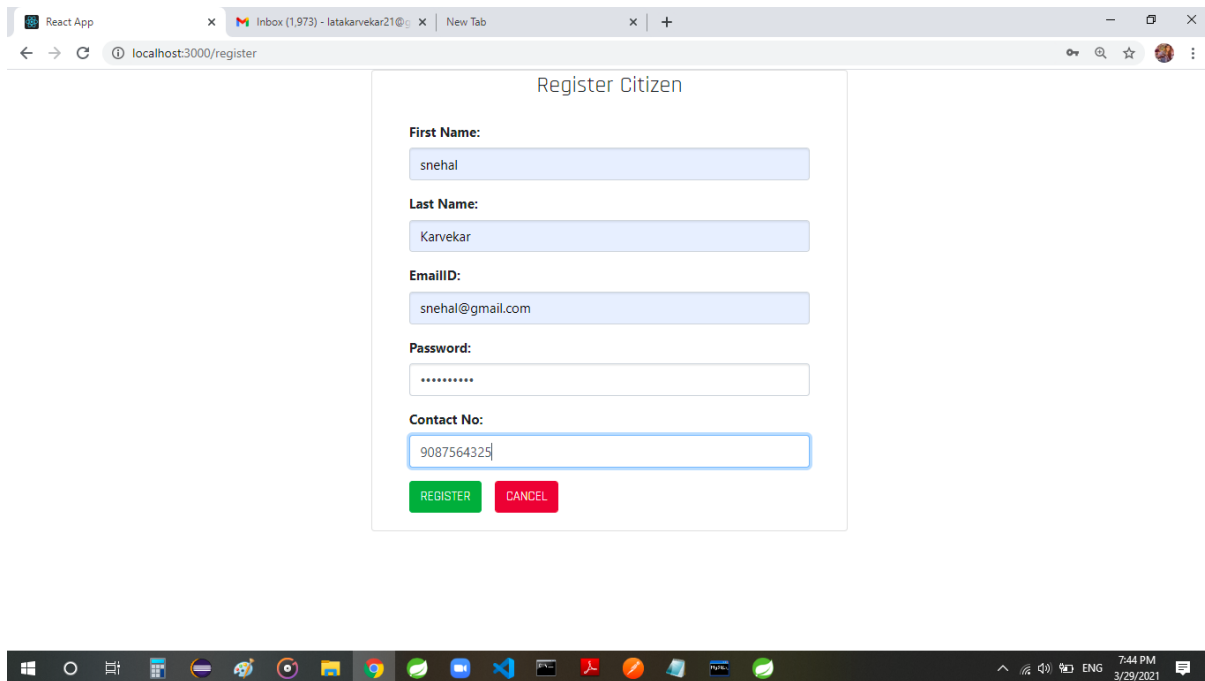
mysql> _
```

Screenshots:

Home Page:



Register:



Login:

Citizen Login

Email

latakarvekar21@gmail.com

Password

LOGIN

Update Details:

Update Citizen Details

Citizen ID:

1

First Name:

Lata

Last Name:

Karvekar

EmailID:

latakarvekar21@gmail.com

Password:

Lata@123

Contact No:

9623087656

Update Cancel

Property tax:

React App x Inbox (1,973) - latakarvekar21@ x New Tab x +

localhost:3000/proptax

Pay Property Tax

location:

Property Type:

Assessed Value:

Property Tax:

[Proceed to payment](#) [Cancel](#)

Windows taskbar: 7:48 PM 3/29/2021

Update department:

React App x Inbox (1,973) - latakarvekar21@ x New Tab x +

localhost:3000/update-dept/1

Update Department Details

Dept Id:

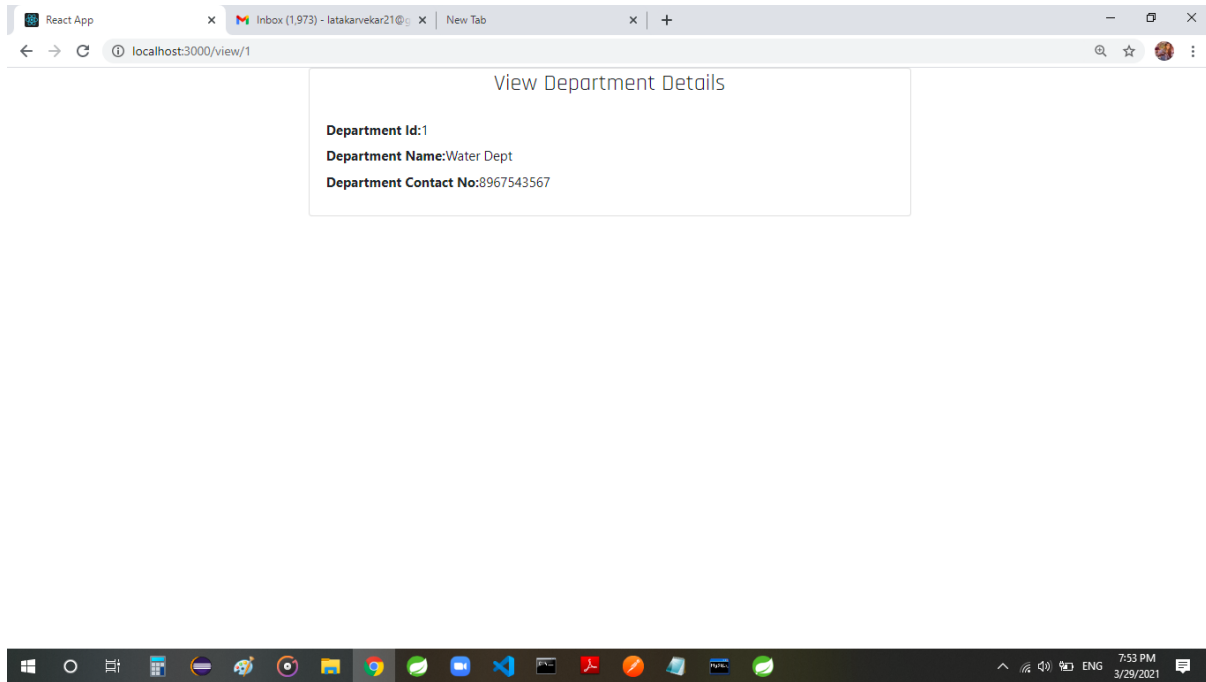
Department Name:

Contact No:

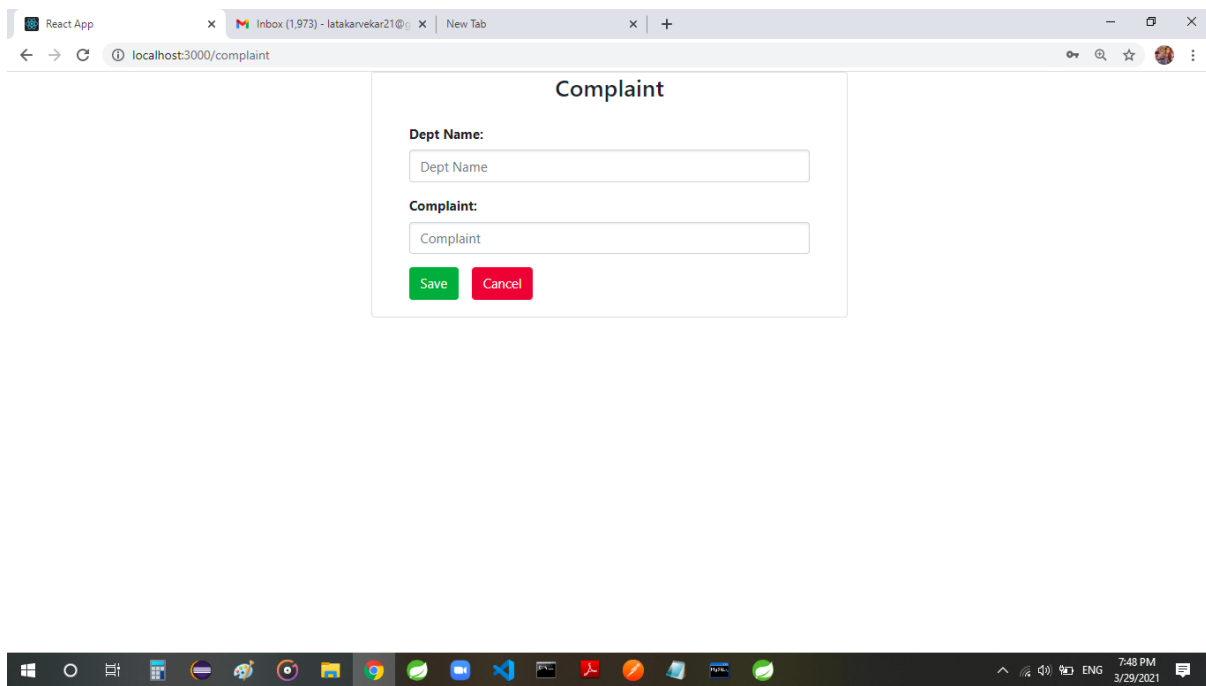
[UPDATE](#) [CANCEL](#)

Windows taskbar: 7:51 PM 3/29/2021

View department:



Complaints:



Admin login:

React App x Inbox (1,973) - latakavkar21@ x New Tab x +

localhost:3000/admin-login

Admin Login

Email

admin@gmail.com

Password

LOGIN

Windows taskbar: 7:50 PM 3/29/2021

View citizen:

React App x Inbox (1,973) - latakavkar21@ x New Tab x +

localhost:3000/view-citizen/id

View Citizen Details

Logout

Citizen First Name: Lata	Citizen Last Name: Karvekar	Citizen EmailId: latakavkar21@gmail.com	Citizen Contact No: 9623087656
------------------------------------	---------------------------------------	---	--

Update Details Give Complaint Pay Property Tax Apply For BirthCertificate Apply For DeathCertificate

Windows taskbar: 7:47 PM 3/29/2021

Death certificate:

React App x Inbox (1,973) - latakarvekar21@ x New Tab x +

localhost:3000/deathcer


Application form of DeathCertificate

Deceased name:

Father/Husband Name:

Age:

Gender: ☐ Male ☐ Female

DateOfDeath:
 

Death location:

Address:

Nationality:

Windows taskbar: 7:49 PM 3/29/2021

Department complaint:

React App x Inbox (1,973) - latakarvekar21@ x New Tab x +

localhost:3000/getcomplaint/1

Complaint List

Complaint Id	Dept Name	Complaint	Actions
1	Water Dept	service is not good	DELETE
4	Water Dept	service is not good	DELETE

Windows taskbar: 7:57 PM 3/29/2021

Birth certificate:

React App x Inbox (1,973) - latakarvekar21@ x New Tab x +

localhost:3000/birthcer

BirthCertificate Application List

Certificate ID	Beneficiary Name	Beneficiary Father Name	Beneficiary Mother Name	Beneficiary date of birth	Beneficiary birth location	Beneficiary Address
1	lata karvekar	shankar	anita	2021-03-19	pune	pune
2	purva ghodke	sunil	anita	2021-03-10	pune	pune

BACK TO MAIN

Birth certificate application:

React App x Inbox (1,973) - latakarvekar21@ x New Tab x +

localhost:3000/birth

Application form of BirthCertificate


Beneficiary Name:

Father Name:

Mother Name:

Gender: ☐ Male ☐ Female

DateOfBirth:

Birth Location:

Address:

Conclusion

In conclusion, Smart City Project in Java provides info regarding the various aspects of city. The implementation of this project solves most of the problems a new visitor faces while coming to a new city. Administration, user, visitor management, etc. similar to a city are the key features of our project. User can access services and functionalities from the society anywhere and anytime for their own comfort.

Future Scope

- The scope may be expanded to include more cities by the state in future.
- Online collaborative sensor data management platforms are on-line database services that allow sensor owner to register and connect their devices to feed data into database.
- We can include telecommuting, telehealth.

7.0 References

The following books and manuals provided a lot of help to us in making this project a reality.

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