

HARITHA KERALA

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CERTIFICATE

This is to certify that this thesis entitled "HARITHA KERALA" submitted here with is an authentic record of the thesis work done by HARITHA P(AWH21MCA-2014)under our guidance in partial fulfillment of the requirements for the award of Master of Computer Applications from APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY during the academic year 2023.

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HARITHA P

ABSTRACT

Collecting garbage from houses regularly has become a difficult task nowadays. The main reason for this is that house members are not aware of when the Haritha Karma Sena members will come to collect garbage. This project is a solution to this problem and it collaborates with the Haritha Karma Sena. Clean City aims to make Kerala garbage-free by collecting non-biodegradable waste from houses regularly. The waste is segregated into different sections based on its features, such as H.M White, P.P, H.M, LD Print, Bajar, Ganny, Bulb, PVC, Steel, Tubes, Bottle, E-waste, Bottle caps, Spray bottle, etc.

Through this system, house owners will receive monthly notifications about the garbage collection details for that month. The collection will be based on user fees. Users can also make complaints against those who contribute to air pollution in the environment. If there is any excess food at functions, they can contact the authorities and distribute it to people in need. This system will help the government reduce manual work based on the Haritha Karma Sena.

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INTRODUCTION

1.INTRODUCTION

Garbage collection from the houses monthly become a difficult task for Haritha Karma Sena members because the house owners are not aware about when will they come to collect the garbages. This system will completely corporate with Haritha Karma Sena that is most of the process that doing now is manually so we can convert into online. In this system the admin will add district and the district will add each local body and the local body will add the ward and houses. The local body will allot ward and houses each month for the collection of garbages to Haritha Karma Sena members. The members will inform to the house owners about the collection details each month. Through this house owners will aware about the collection of garbages and the fee that are needed to be paid. In this system the house owners can also inform Haritha Karma Sena members about the function that are conducted to distribute the food items that are become balance in the functions. An employmenent opputunity also providing here the public can apply for job who are interested to work in Haritha Karma Sena. Remove garbages from the surrounding and make it more clean is the objective of this project. It will make the Haritha Karma Sena members work more easier.

SYSTEM ANALYSIS

2.SYSTEM ANALYSIS

2.1 Existing system

Todays garbages collection system in Haritha Karma Sena faces different problem. Because the Haritha karma Sena members will know the date and houses that are going to collect garbages but the house owners are aware about it. In such cases the Haritha Karma Sena members are difficult to collect the garbages and monthly fees. All the process related to house allotment to the members are made manually it make more difficult and paper works are needed. The current system have no ability to distribute the food items that are balance in the functions it will make wastage of food items. It's a time consuming process.

2.2 Proposed system

A new system was introduced as a solution to the existing system. In this system, most of the tasks related to Haritha Karma Sena were previously done manually, but now they can perform their work online with fewer paperwork requirements. The system consists of six modules: Admin, District Officer, Haritha Karma Sena Employees, House, and Public.

The Admin will manage districts by adding and removing them. They will also set fees for the collected items, and have the ability to add, update, and remove these fees. The District Officer will add the Local Body within their district. The Local Body will handle key processes such as ward management and house management. They will verify applications received from the public for jobs based on specific conditions. Additionally, the Local Body will assign duties to wards and allocate houses to employees for garbage collection. Haritha Karma Sena Members will have access to house details for collection purposes. They will inform the houses about collection details and handle tasks like verification and adding collection points. They will also add payment details for each house. The House module allows house owners to view details of items scheduled for collection. They can also generate complaints if needed. The Public module enables individuals to apply for jobs in Haritha Karma Sena.

This system aims to assist house owners in the monthly removal of garbage from their houses. One major problem they face is the lack of awareness about garbage collection dates, which will be resolved through this system. House owners will also be informed about the fees for garbage collection, including the amount to be paid and the payment deadline. Moreover, the system will reduce paperwork associated with each task.

2.3Module description

This project has 6 modules:

ADMIN

- Login
- District Management
 - Add District
 - Remove District
- Fee Management
 - Add Fee
 - Remove Fee
 - Update Fee

DISTRICT OFFICE

- Login
- Local Body Management
 - Add Local Body
 - Remove Local Body

LOCAL BODY

- Login
- Ward Management
 - Add Ward
 - Remove Ward
- House Management
 - Add House
 - Remove House

- Haritha Karma Sena Member Management
 - Verify Application
 - View Haritha Karma Sena Member
 - Remove Haritha Karma Sena Member
- Duty Calender
 - Add Duty
 - Remove Duty
 - Update Duty
- Duty Allotment
 - Allot Ward
 - Allot House
- View Report

HARITHA KARMA SENA MEMBERS

- Login
- View Ward
- View Houses
- Add collection details
- Function Management
 - Verify function details
 - Verify food balance details
 - Add collection point
- View request

HOUSES

- Login
- View Collection Date
- View Collection Member
- Function Section
 - Add function details
 - Update food balance details
- Generate Complaint
- View Food balance details
- View Collection point

- Generate Request

PUBLIC

- Apply for employment in Haritha Karma Sena

2.3 Sprint

Sprint 1

Module	Task	Pending task if any	Hours for Completion	Expected date of Completion	Actual date of Completion	Reason for deviation
Admin, District officer, Local Body, House	Login	-	6 hours.	07/02/2023	07/02/2023	-
Admin	District Management	-	14 hours.	10/02/2023	10/02/2023	-
	Fees Management	-	14hours.	15/02/2023	15/02/2023	-
	View Complaint		10hours.	17/02/2023	17/02/2023	
District Office	Local Body Management	-	15 hours.	22/02/2023	22/02/2023	-

Sprint 2

Module	Task	Pending task if any	Hours for Completion	Expected date of Completion	Actual date of Completion	Reason for deviation
Local Body	Ward Management	-	8 hours.	27/02/2023	27/02/2023	-
	House Management	-	10 hours.	02/03/2023	02/03/2023	-
	Haritha Karma Sena member Management	-	20 hours.	08/03/2023	08/03/2023	-
	Duty Calender	-	8 hours.	10/03/2023	10/03/2023	-
	Duty Allotment	-	8 hour	15/03/2023	15/03/2023	-

Sprint 3

Module	Task	Pending task if any	Hours for Completion	Expected date of Completion	Actual date of Completion	Reason for deviation
Haritha Karma Sena Employee	View ward details	-	8hours.	16/03/2023	16/03/2023	-
	View house details	-	7hours.	20/03/2023	20/03/2023	-
	Add collection details	-	12 hours.	23/03/2023	23/03/2023	-
	Function Management	-	12 hours.	27/03/2023	27/03/2023	-
	Payment	-	15 hours	30/03/2023	30/03/2023	-

Sprint 4

Module	Task	Pending task if any	Hours for Completion	Expected date of Completion	Actual date of Completion	Reason for deviation
Houses	Function Section	-	15hours.	05/04/2023	05/04/2023	-
	Generate Complain -t	-	10hour	13/04/2023	13/04/2023	-
	View Food Balance details	-	9hours.	20/04/2023	20/04/2023	-
	View Collection Point	-	10hours.	25/04/2023	25/04/2023	-
Public	Job Application	-	10hours.	28/04/2023	28/04/2023	-

2.5 User Stories

Haritha Kerala was a web portal that consisted of 6 modules: Admin, District Officer, Local Body, Haritha Karma Sena Member, Houses, and Public. The Admin logged into the system and added or removed districts. They also managed fees by adding, removing, and updating them. Additionally, the Admin could view complaints.

The District Office logged into the system and added or removed Local Bodies. The Local Body logged into the system and managed wards by adding or removing them. They also managed houses by adding or removing them. The Local Body verified applications from the public for jobs and accepted or removed members based on the condition that the applicant's annual income had to be less than or equal to 60000 and Ration card Type should be BPL for Haritha Karma Sena management. Additionally, the Local Body prepared duties, added or removed them, and allotted duties to the wards and houses for garbage collection.

Haritha Karma Sena members logged into the system and viewed the allotted houses. They also verified function details, food balance details, and viewed reports. They added collection points for collecting food items and generated complaints. They updated house collection details. They also added payment details for each house.

House Owners logged into the system and viewed collection details. They added function details and updated food balance details. They viewed food availability details and generated complaints.

The Public could apply for a job in Haritha Karma Sena.

FEASIBILITY STUDY

3. FEASIBILITY STUDY

An analysis of the ability to complete a project successfully, taking into account legal, economic, technological, scheduling, and other factors is considered a feasibility study. Rather than just diving into a project and hoping for the best, feasibility study allows project managers to investigate the possible negative and positive outcomes of a project before investing too much money and time..

3.1 Economical Feasibility

The economic analysis is done to determine the benefits and savings that are expected from candidate system and compare them with costs. This system is cost effective as well as time effective, thereby making it economically feasible.

3.2 Technical Feasibility

The technical requirements for the system are economic and it does not use additional software. This system can be implemented using the existing technologies. This application is developed using python, whose development kits are easily available and free of cost, thus making our system technically feasible.

3.3 Operational Feasibility

This analysis involves how it will work when it is installed and the assessment of political and managerial environment in which it is implemented. The new proposed system is very much useful to the users and therefore it will accept broad audience.

3.4 Behavioural Feasibility

This analysis involves how it will work when it is installed and the assessment of the political and managerial environment in which it is implemented. People are inherently resistant to change and computers have been known to facilitate change. The new proposed system is very much useful to the users and therefore it will accept a broad audience.

3.5 Software Feasibility

Even though this application is developed in a very high software environment, it is also supported by many other environments with minimal changes. The system is fully feasible to be executed on any kind of operating systems and browsers. Software can be developed with the existing resources.

SOFTWARE ENGINEERING PARADIGM

4. SOFTWARE ENGINEERING PARADIGM

The software engineering paradigm which is also referred to as a software process model or Software Development Life Cycle (SDLC) model is the development strategy that encompasses the process, methods and tools. SDLC describes the period of time that starts with the software system being conceptualized.

4.1 Agile model

Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software products. Agile Methods break the product into small incremental builds. These builds are provided in iterations. Each iteration typically lasts from about one to three weeks. At the end of the iteration, a working product is displayed to the customer and important stakeholders.

In Agile, the tasks are divided into time boxes (small time frames) to deliver specific features for a release. Iterative approach is taken and working software build is delivered after each iteration. Each build is incremental in terms of features; the final build holds all the features required by the customer.

4.2 Scrum

Scrum is an agile framework for managing knowledge work, with an emphasis on software development. It is designed for teams of three to nine members, who break their work into actions that can be completed within time-boxed iterations, called "sprints", no longer than one month and most commonly two weeks, then track progress and re-plan in 15-minute stand-up meetings, called daily scrums.

Scrum is an iterative and incremental framework for managing product development. It defines "a flexible, holistic product development strategy where a development team works as a unit to reach a common goal", challenges assumptions of the "traditional, sequential approach to product development, and enables teams to self organise by encouraging physical co-location or close online collaboration of all team members, as well as daily face-to-face communication among all team members and disciplines involved.

SYSTEM REQUIREMENT SPECIFICATION

5. SYSTEM REQUIREMENTS SPECIFICATION

5.1 Software Requirements

- Operating system : Windows 7 or above
- Frontend : HTML,CSS, PYTHON
- Backend : MySQL
- Web browser : Internet Explorer/Google Chrome/Firefox

5.2 Hardware Requirements

- A device with an internet connection
- Processor : Intel core i3 or above
- Hard Disk :128GB and above processor Intel Core i3 and above
- RAM : 4 GB
- Storage : 500GB Hard disk

SYSTEM DESIGN

6. SYSTEM DESIGN

System design is the first in the development phase for many engineered product or system. It may define the process of applying various techniques and principles for the purpose of defining a device, a process or system in sufficient detail to permit its physical realization.

6.1 Database Design

Database design is the process of producing a detailed data model of a database. This logical data model contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a data definition language, which can then be used to create a database. The term database design can be used to describe many different parts of the design of an overall database system. Principally, and most correctly, it can be thought of as the logical design of the base data structures used to store the data.

In the relational model these are the tables and views. In an object database the entities and relationships map directly to object classes and named relationships. However, the term database design could also be used to apply to the overall process of designing, not just the base data structures, but also the forms and queries used as part of the overall database application within the database management system. The process of doing database design generally consists of a number of steps which will be carried out by the database designer. Usually, the designer must: Determine the relationships between the different data elements and superimpose a logical structure upon the data on the basis of these relationships.

Normalization

It is a process of converting a relation to a standard form. The process is used to handle the problems that can arise due to data redundancy i.e., repetition of data in the database, maintain data integrity as well as handling problems that can arise due to insertion, updation, deletion anomalies.

Insertion anomaly: Inability to add data to the database due to absence of other data.

Deletion anomaly: Unintended loss of data due to deletion of other data.

Update anomaly: Data inconsistency resulting from data redundancy and partial update.

Normal Forms: These are the rules for structuring relations that eliminate anomalies.

1. First Normal Form (1NF)

A relation is said to be in first normal form if the values in the relation are atomic for every attribute in the relation. This mean simply that no attribute value can be a set of values or, as it is sometimes expressed, a repeating group.

2. Second Normal Form (2NF)

A relation is said to be in second Normal form is it is in first normal form and itshould satisfy any one of the following rules.

- Primary key is a not a composite primary key
- No non key attributes are present
- Every non key attribute is fully functionally dependent on full set of primarykeys.

3. Third normal Form(3NF)

A relation is said to be in third normal form if there exist no transitive dependencies.

Transitive dependency: If two non-key attributes depend on each other as well on the primary key then they are said to be transitively dependent. the above normalization principle was applied to decompose the data in multiple tables thereby making the data tobe maintained in a consistent state.

6.2 Tables

Login

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	User_id	Integer(10)	Primary Key
2	Password	Varchar(10)	Not null
3	Type	Varchar(10)	Not null

District

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	District_id	Varchar(10)	Primary key
2	District Name	Varchar(30)	Not null

Local Body

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	Local_Body_id	Varchar(10)	Primary key
2	District_id	Varchar(30)	Foreign Key
3	Category	Varchar(30)	Not null
4	Name	Varchar(30)	Not null

Ward

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	Ward_Number	Integer(10)	Primary key
2	Local_body_id	Varchar(10)	Foreign Key
3	Ward_member_name	Varchar(30)	Not null
4	Contact_Number	Varchar(30)	Not null
5	Email	Varchar(30)	Not null

House

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	House_number	Integer(10)	Primary key
2	Ward_Number	Integer(10)	Foreign Key
3	House_name	Varchar(30)	Not null
4	Location	Varchar(30)	Not null
5	Address	Varchar(30)	Not null
6	House_owner_Name	Varchar(30)	Not null
7	Aadhar_Number	Varchar(30)	Not null
8	Contact_Number	Varchar(30)	Not null
9	Remark	Varchar(30)	Not null
10	Status	Varchar(30)	Not null

Fee

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	Fee_id	Integer(30)	Primary key
2	Fee_Name	Varchar(30)	Not null
3	Description	Varchar(30)	Not null
4	Amount	Integer(30)	Not null

Haritha karma Sena Employee Request

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	Request_id	Integer(30)	Primary key
2	Applicant_Name	Varchar(30)	Not null
3	Address	Varchar(30)	Not null
4	Date_of_Birth	Integer(30)	Not null
5	Gender	Varchar(30)	Not null
6	Photo	Varchar(30)	Not null
7	Qualification	Varchar(30)	Not null
8	District	Varchar(30)	Not null
9	Ward_Number	Integer(30)	Not null

10	Ration_Card_Type	Varchar(30)	Not null
11	Annual_Income	Integer(30)	Not null
12	Phone_Number	Integer(30)	Not null
13	Email	Varchar(30)	Not null

Haritha karma Sena Employee

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	HKS_id	Varchar(30)	Primary key
2	Request_id	Varchar(30)	Foreign Key
3	Name	Varchar(30)	Not null
4	Address	Varchar(30)	Not null
5	Phone	Integer(30)	Not null
6	Email	Varchar(30)	Not null
7	Photo	File	Not null
8	Gender	Varchar(30)	Not null
9	Age	Varchar(30)	Not null
10	Appointment_Date	Varchar(30)	Not null

11	Ward_Number	Varchar(30)	Not null
12	Remark	Varchar(30)	Not null

Duty

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	Job_id	Varchar(30)	Primary key
2	Job_Name	Varchar(30)	Not null
3	Description	Varchar(30)	Not null

Ward Allotment

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	Duty_id	Varchar(30)	Primary key
2	Ward_Number	Varchar(30)	Foreign key
3	Job_id	Varchar(30)	Foreign key
4	Starting_Date	Varchar(30)	Not null
5	Ending_Date	Varchar(30)	Not null

House Allotment

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	HKS_ward_house_id	Varchar(30)	Primary key
2	HKS_id	Varchar(30)	Foreign key
3	Ward_Number	Varchar(30)	Foreign key
4	House_Number	Varchar(30)	Foreign key

Ward house collection

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	W_H_C_id	Varchar(30)	Primary key
2	HKS_Id	Varchar(30)	Foreign key
3	House_No_Start	Varchar(30)	Not null
4	House_No_End	Varchar(30)	Not null
5	Collection_Date	Integer(30)	Not null
6	Collection_Time	Integer(30)	Not null
7	Month	Integer(30)	Not null
8	Year	Integer(30)	Not null

House collection

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	House_collection_id	Varchar(30)	Primary key
2	House_Number	Integer(30)	Foreign key
3	Ward_Number	Integer(30)	Foreign key
4	Month	Integer(30)	Not null
5	Year	Integer(30)	Not null
6	Collection_Date	Integer(30)	Not null
7	Collection_Fee	Integer(30)	Not null
8	Remark	Varchar(30)	Not null

House Owner

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	House_owner_id	Varchar(30)	Primary key
2	House_Number	Integer(30)	Foreign key
3	Collection_Date	Integer(30)	Not null
4	Collection_Month	Integer(30)	Not null

5	Amount	Integer(30)	Not null
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Function Details

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	Function_id	Varchar(30)	Primary key
2	House_Number	Varchar(30)	Foreign key
3	Ward_Number	Varchar(30)	Foreign key
4	Function_Date	Varchar(30)	Not null
5	Function_Type	Varchar(30)	Not null

Food Balance Details

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	Food_balance_id	Varchar(30)	Primary key
2	Function_id	Varchar(30)	Foreign key
3	Food_type	Varchar(30)	Not null
4	Balance_quantity	Varchar(30)	Not null
5	Prepration_Time	Varchar(30)	Not null
6	Used_before	Varchar(30)	Not null

7	Collection_point	Varchar(30)	Not null
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House Complaint

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	Complaint_id	Varchar(30)	Primary key
2	House_number	Varchar(30)	Foreign key
3	Complaint	Varchar(30)	Not null

Haritha Karma sena Complaint

SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	Complaint_id	Varchar(30)	Primary key
2	HKS_id	Varchar(30)	Foreign key
3	Complaint	Varchar(30)	Not null

Payment

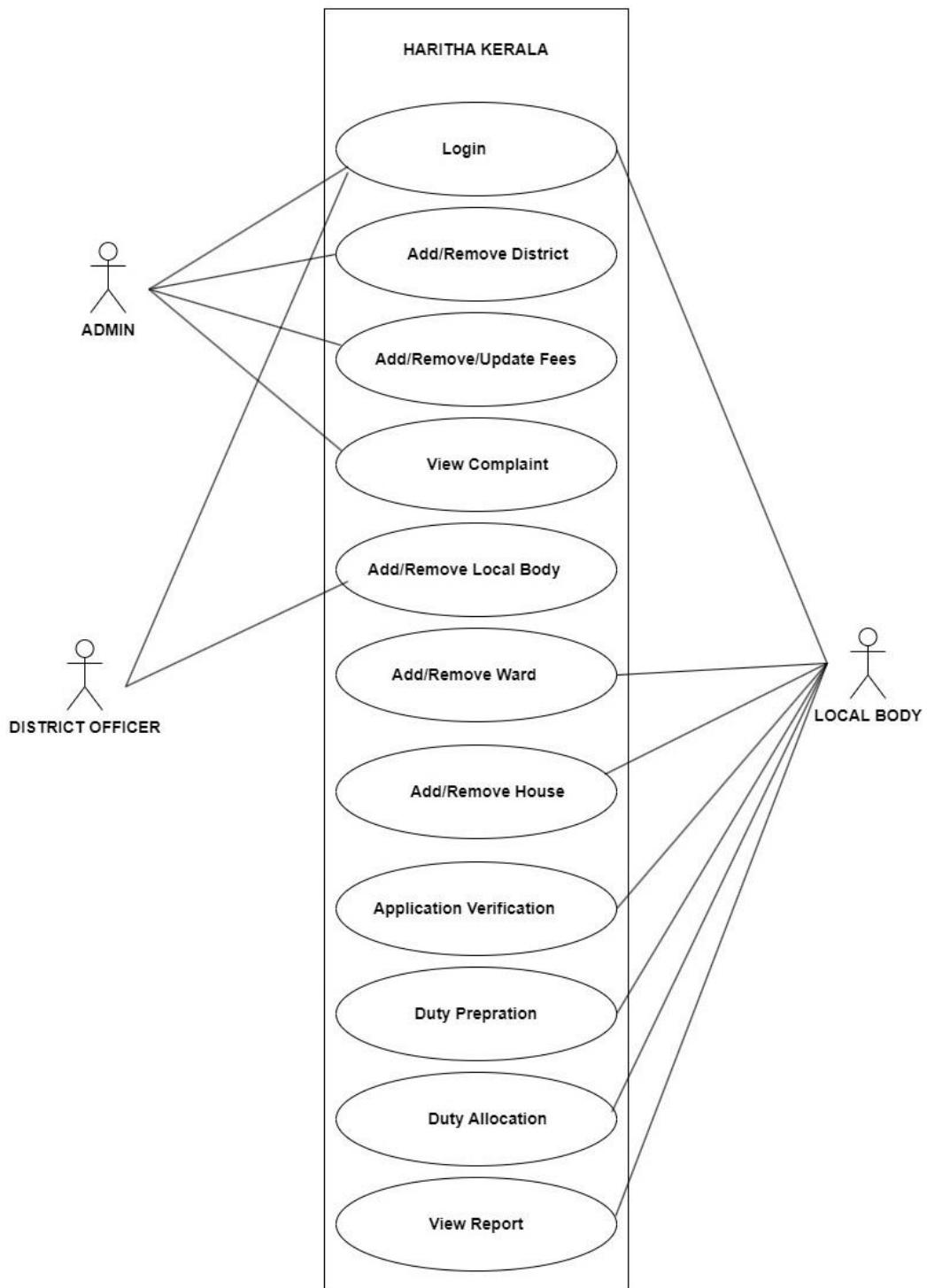
SL NO	FIELD NAME	DATATYPE	CONSTRAINTS
1	Payment_id	Varchar(30)	Primary key
2	HKS_id	Varchar(30)	Foreign key

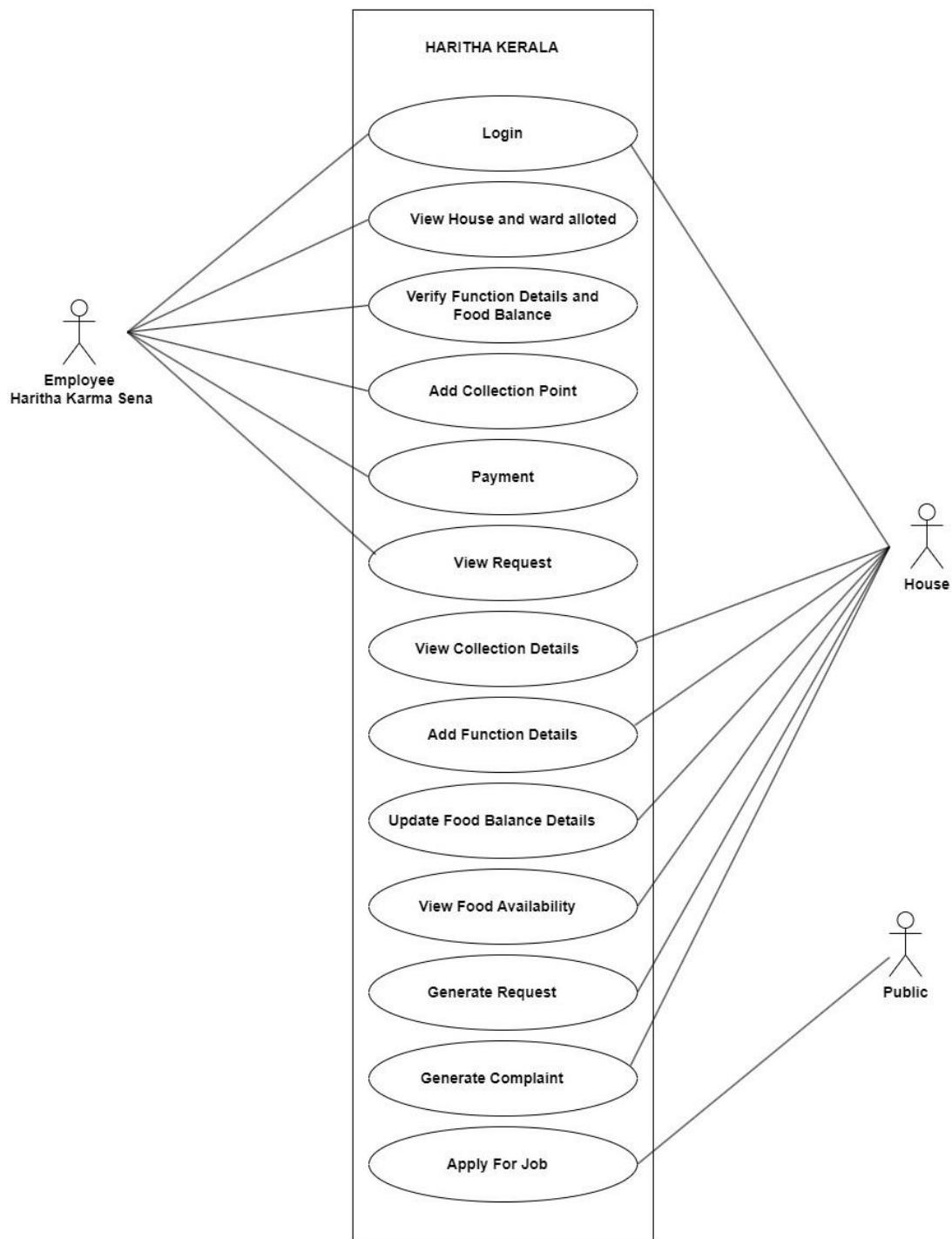
3	House_number_id	Varchar(30)	Foreign key
4	Payment_amount	Varchar(30)	Not null
5	Payment_date	Varchar(30)	Not null
6	Payment_month	Varchar(30)	Not null

6.3 UML Designs

The Unified Modelling Language (UML) is indeed a standardized language used for specifying, visualizing, constructing, and documenting software systems, as well as for business modelling and other non-software systems. It encompasses a collection of best engineering practices that have been proven successful in modelling large and complex systems. UML provides a set of graphical notations that allow software developers and other stakeholders to express and communicate the design of software projects effectively. By using UML, project teams can visualize and explore potential designs, communicate design decisions, and validate the architectural design of the software system. UML diagrams serve as a means to represent various aspects of the system being developed. These diagrams can be used to depict the structure of the system, its behaviour, interactions between components, and the overall flow of activities. The graphical nature of UML diagrams makes them intuitive and easier to understand for both technical and non-technical stakeholders involved in the software development process. UML provides a standardized and widely accepted notation, which promotes consistency and clarity in design documentation. This allows for better collaboration among team members and facilitates the understanding and maintenance of software systems over time. The use of UML in software development can enhance communication, facilitate design exploration, and provide a solid foundation for developing and documenting complex software systems.

6.1 Use case diagram





6.3 Scenario

Admin:

- District Management – Add and Remove District
- Fee Management– Add, Remove and Update fees

District Office:

- Local Body Management – Add and Remove Local Body

Local Body:

- Ward management – Add and Remove ward
- House Management – Add and Remove house
- Haritha Karma Sena Member Management – Verify , Appoint and Remove Member Application
- Duty Management – Add, Update and Remove duty
- Duty Allotment – Allot ward and Houses
- View Report

Haritha Karma Sena Employee:

- View Ward
- View House
- Verify Function Details
- Verify Food Balance Details
- Add Collection Point
- View Report
- Payment

Houses:

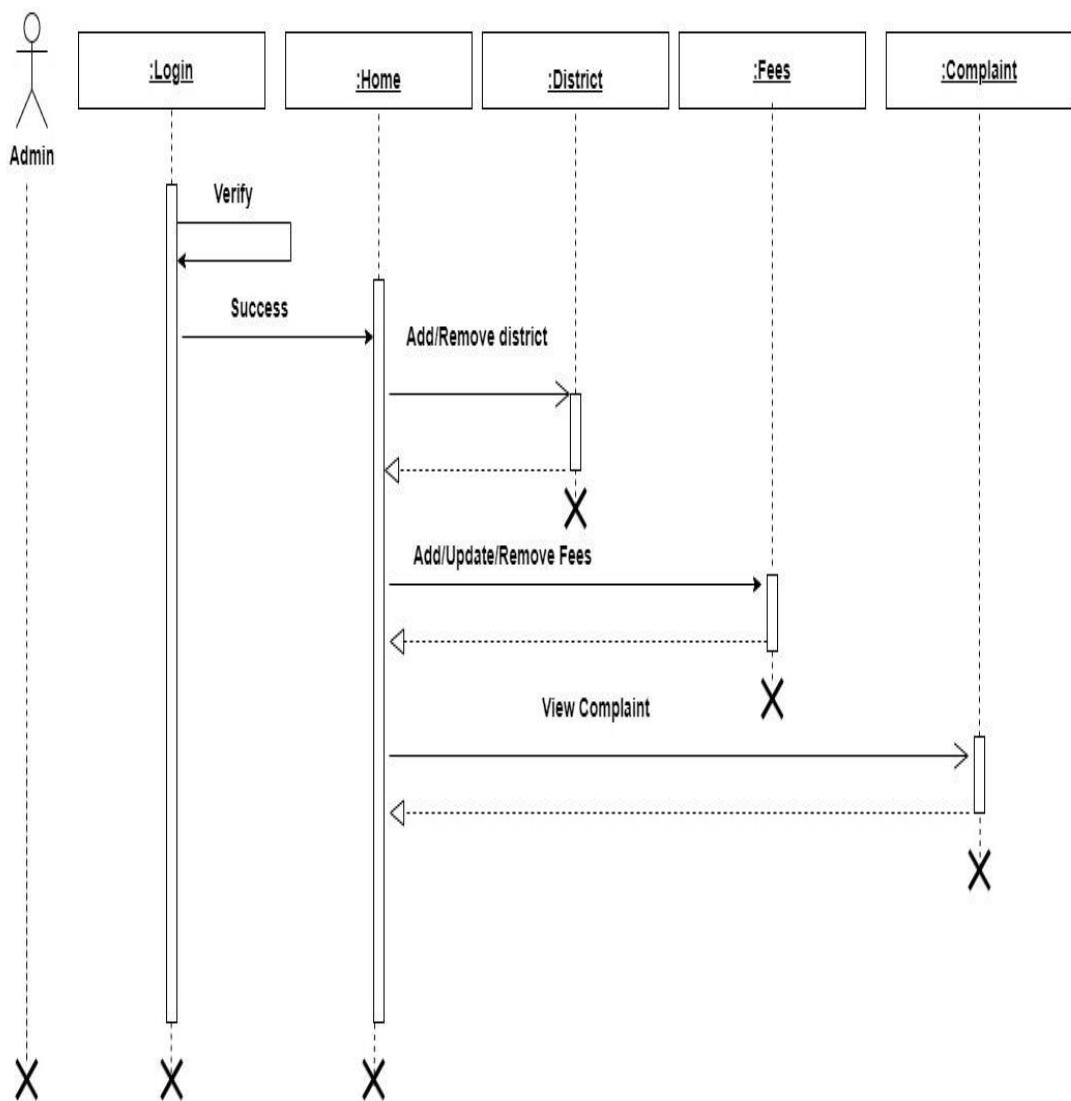
- View Collection Point
- Add Function details
- Update Food Balance Details
- View Food Availability
- Generate Request
- Generate Complaint

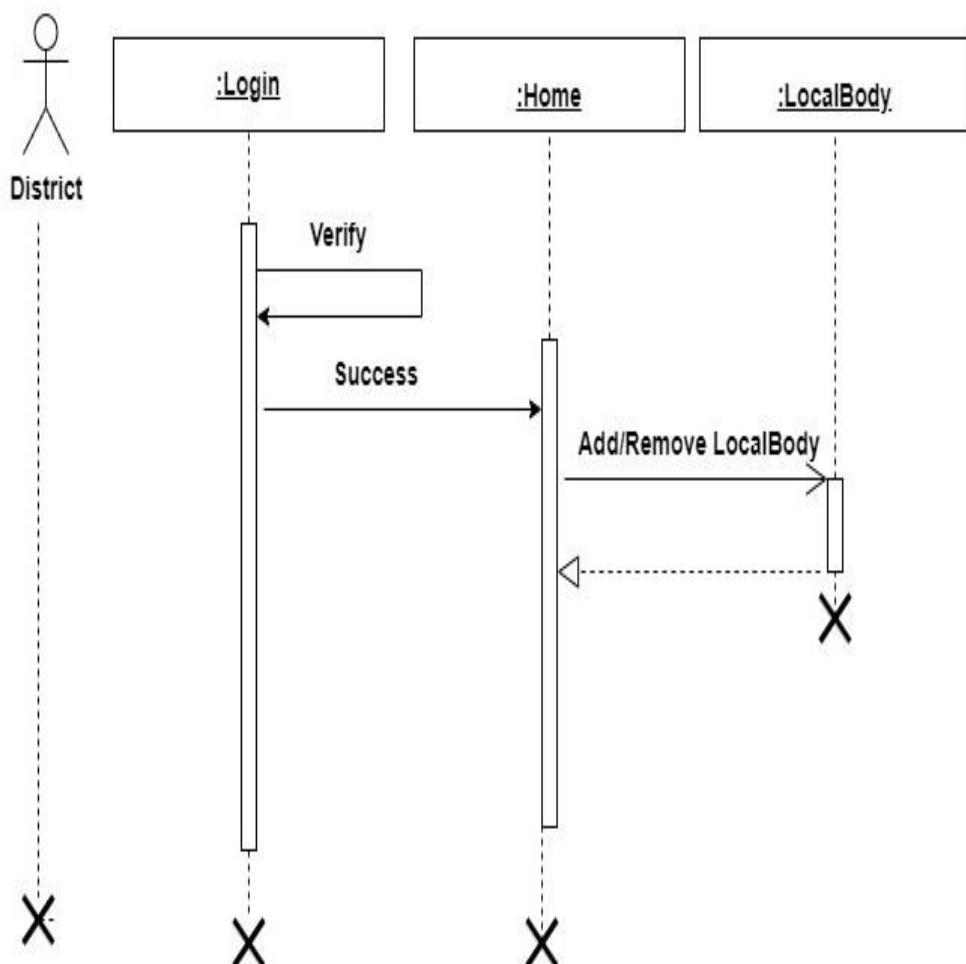
Public:

- Apply for Job In Haritha Karma Sena

6.4 Sequence Diagram

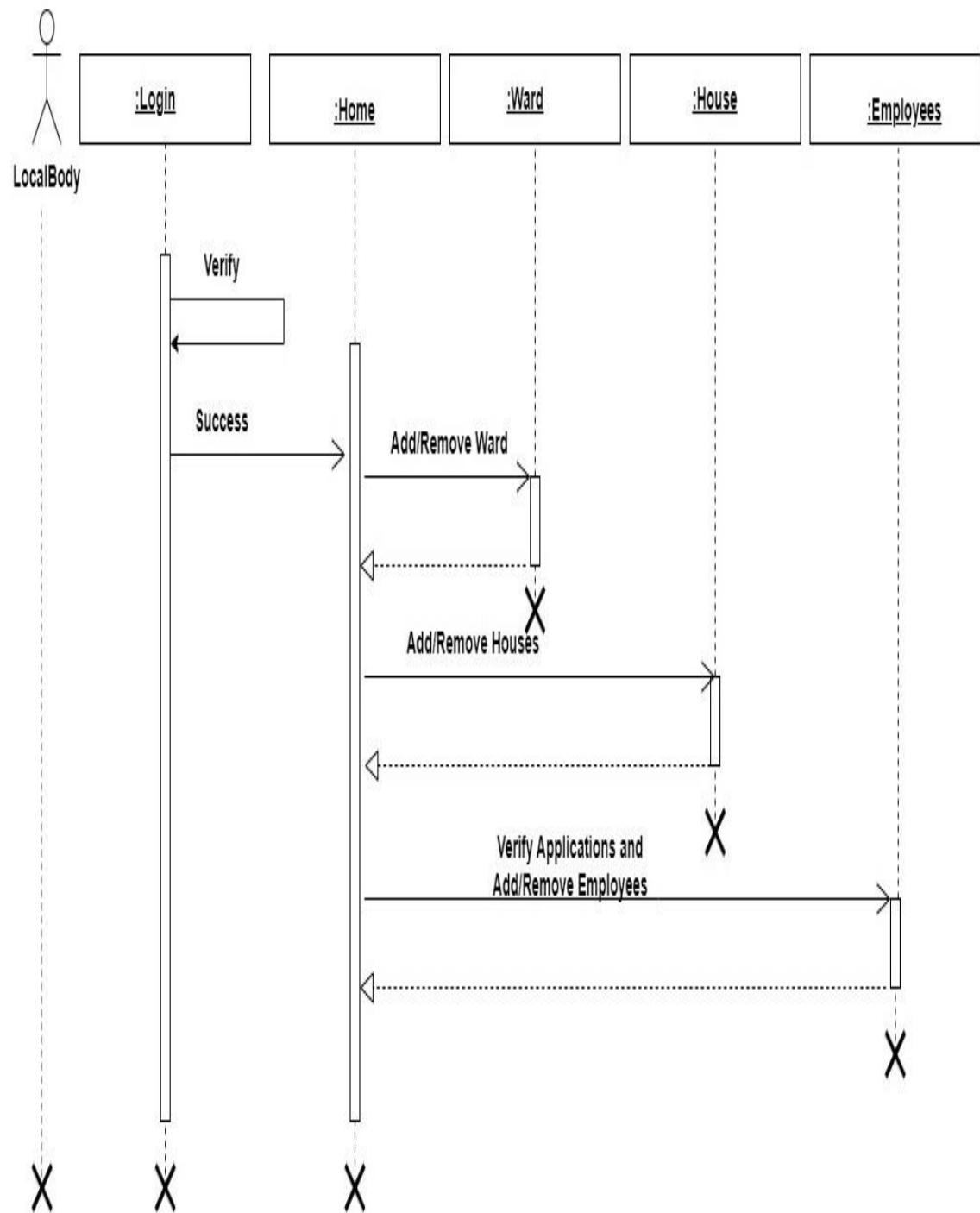
Admin



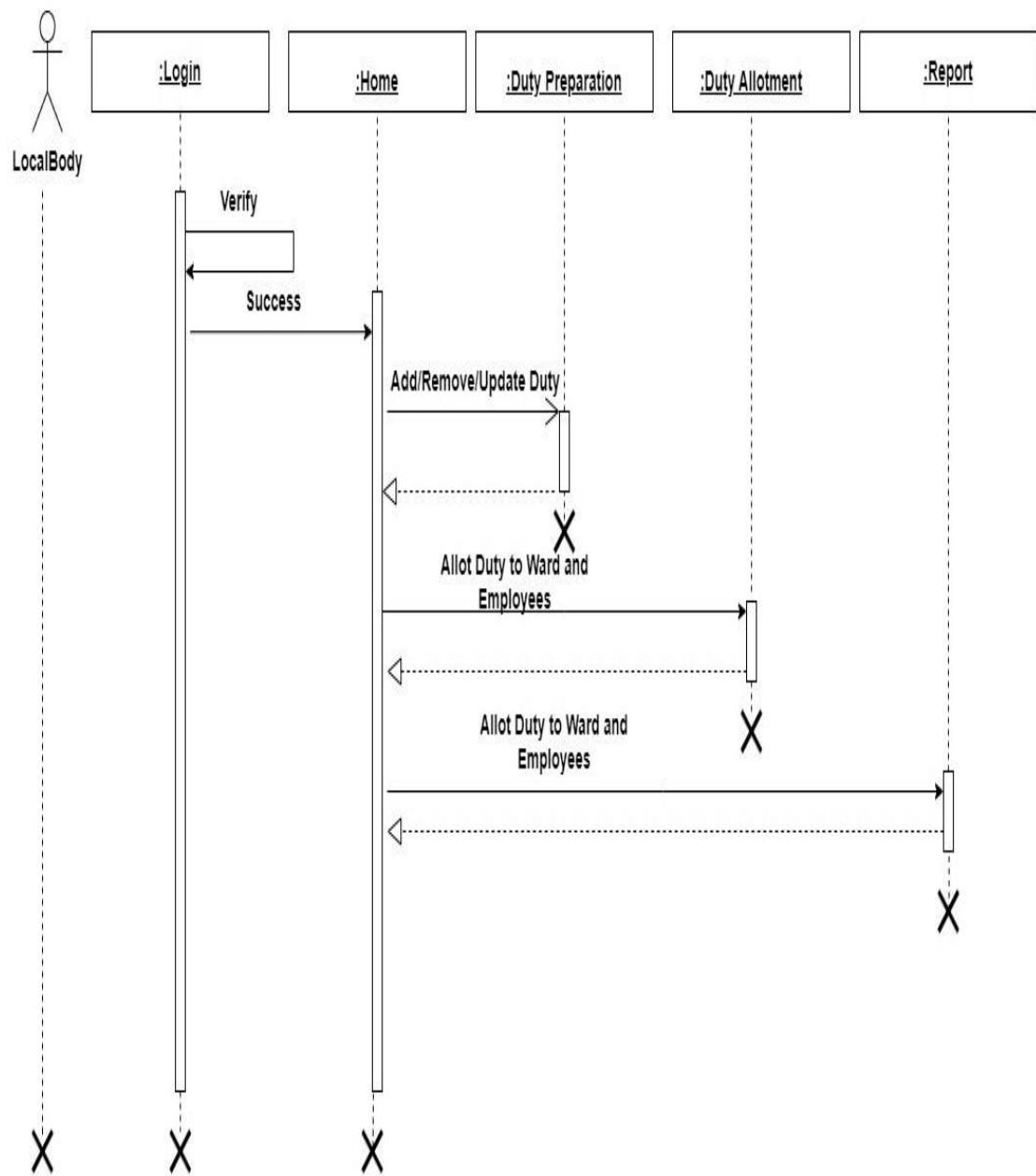
District

Local Body

1)

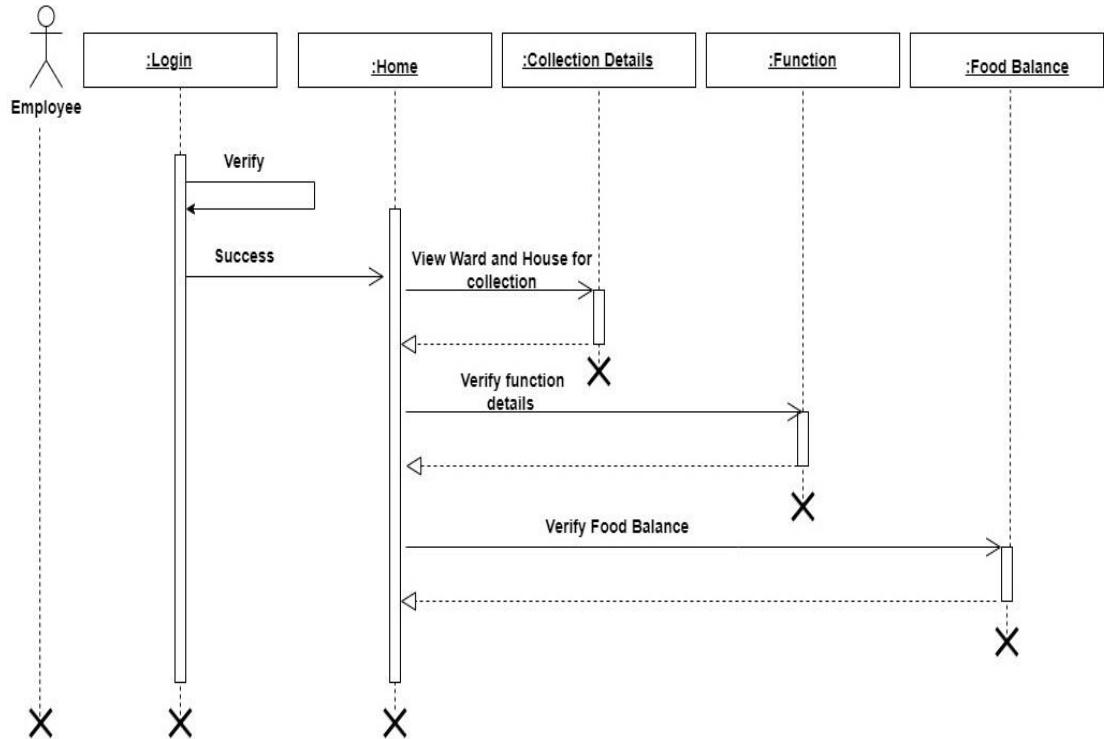


2)

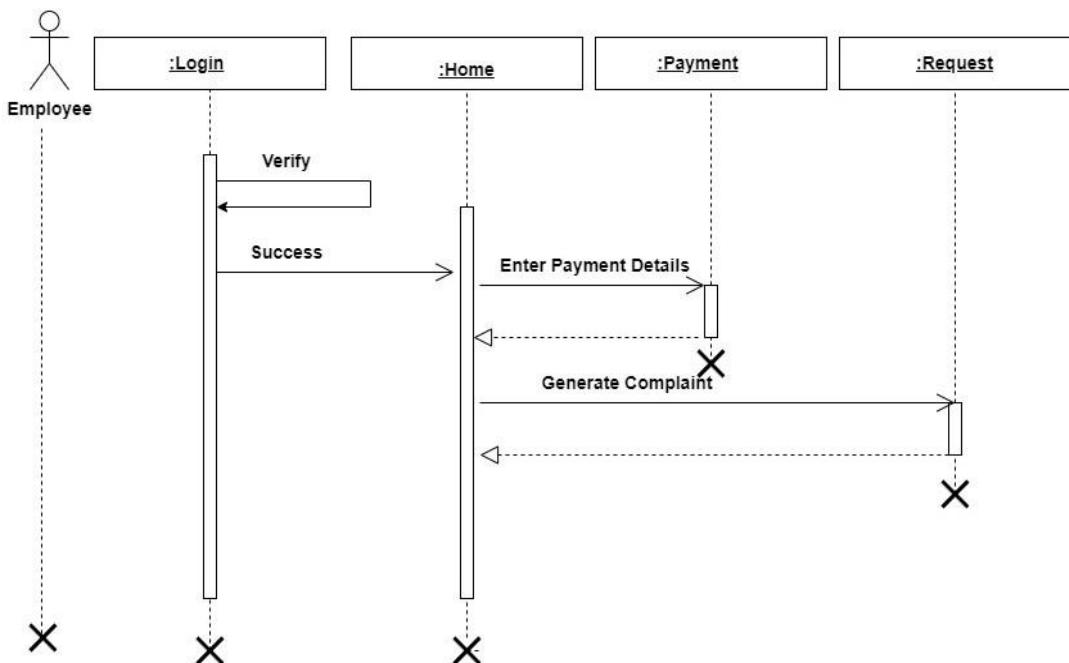


Haritha Karma Sena Employee

1)

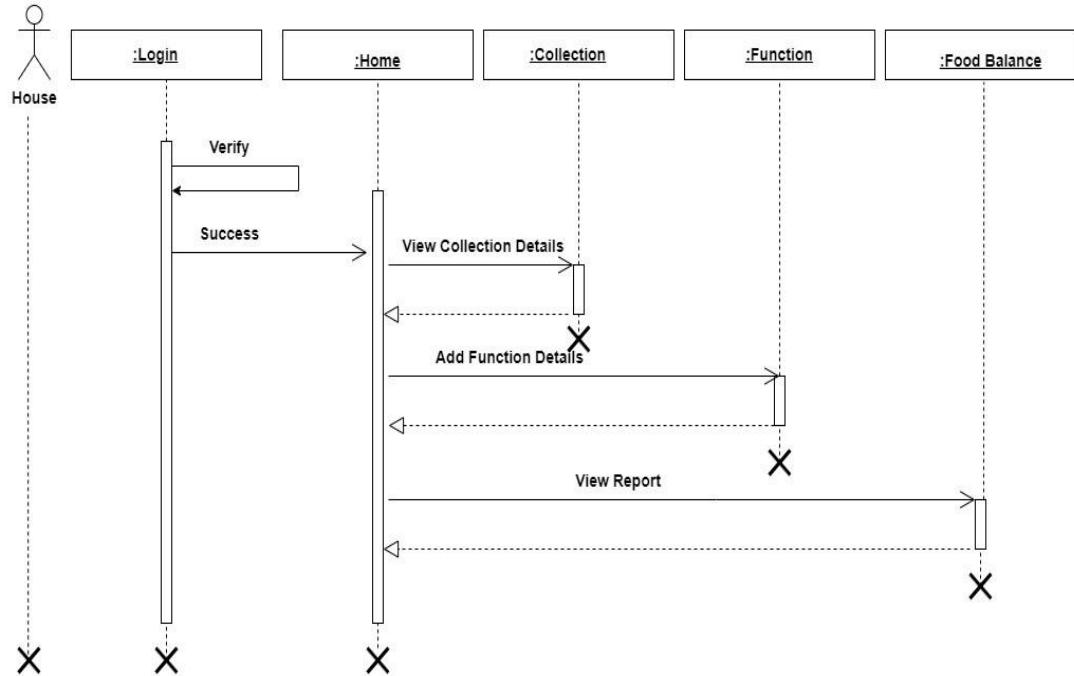


2)

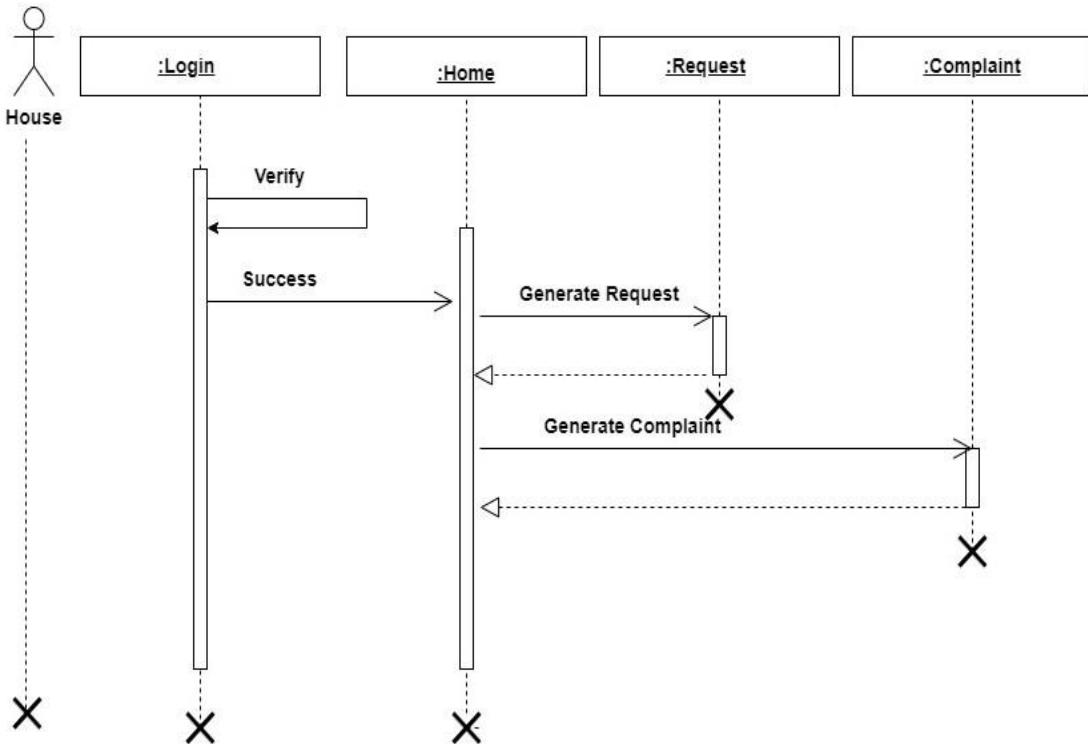


House

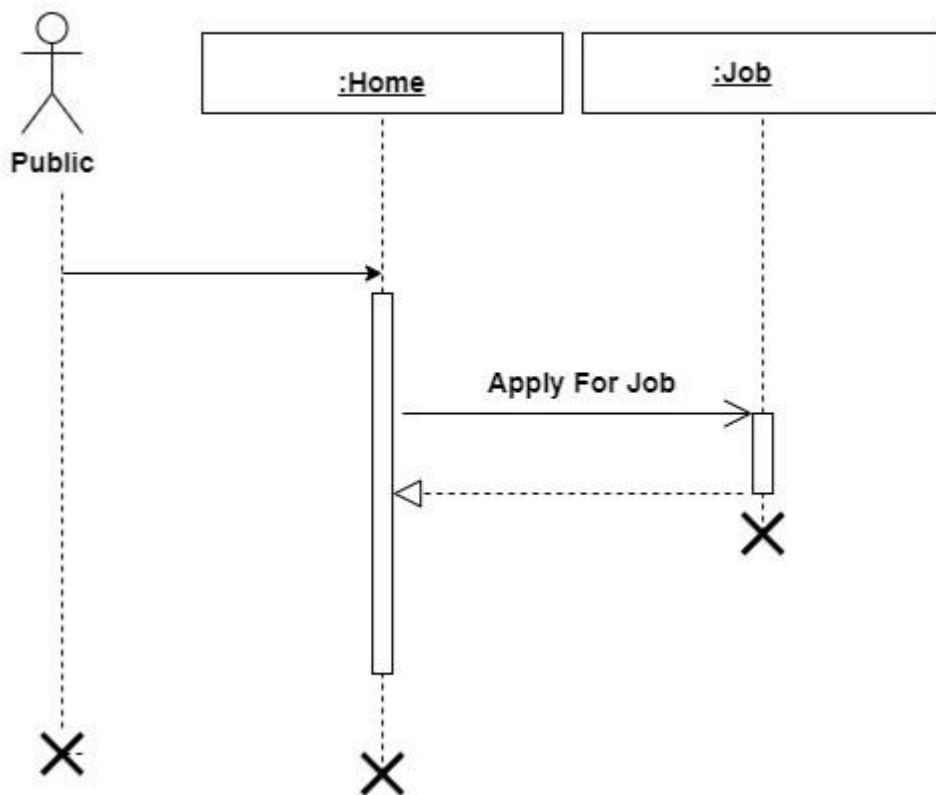
1)



2)



Public



SYSTEM DEVELOPMENT

7.SYSTEM DEVELOPMENT

System development is series of operations to manipulate data to produce output from computer system. The principal activities performed during the development phase can be divided into two major related sequences.

- External system development
- Internal system development

The major external system activities are:

- Implementation
- Planning
- Equipment acquisition
- Installation

7.1 Coding

The purpose of code is to facilitate the identification and retrieval of items of information. A code is an ordered collection of symbols designed to provide unique identification of entity or an attribute. Code also show interrelationship among different items. Codes are used to identify, access, sort, matching records. The code ensures that only one value of code with a single meaning is applied to give entity or attribute as described in various ways.

Python

Python is a multi-paradigm programming language. Object-oriented programming and structured programming are fully supported, and many of its features support functional programming and aspect-oriented. Python uses dynamic typing, and a combination of reference counting and a cycle detecting garbage collector for memory management. It also features dynamic name resolution (late binding), which binds method and variable names during program execution.

Python is a multi-paradigm programming language. Object-oriented programming and structured programming are fully supported, and many of its features support functional programming and aspect-oriented programming (including meta programming and metaobjects(magic methods)). Many other paradigms are supported via extensions, including design by contract and logic programming.

Python uses dynamic typing and a combination of reference counting and a cycle-detecting garbage collector for memory management. It also features dynamic numeric solution(latebind-ing),which binds method and variable names during program execution.

Libraries

Python's large standard library, commonly cited as one of its greatest strengths, provides tools suited too many tasks. For Internet-facing applications, many standard formats and protocols such as MIME and HTTP are supported. It includes modules for creating graphical user interfaces, connecting to relational databases, generating pseudorandom numbers, arithmetic with arbitrary precision decimals, manipulating regular expressions, and unit testing.

Mysqlclient

License GPL Platforms OS Independent Python version 2.7 and 3.4+PyPI. <https://pypi.org/project/mysqlclient/mysqlclient> is a fork od MySQL-Python. It adds Python 3 supports and fixed many bugs. It is the MySQL library that is recommended bt the Django documentation.

Django

Django is a popular and powerful web framework for building web applications using the Python programming language. It provides developers with a high-level, model-view-controller (MVC) architecture, which allows them to easily build and maintain complex, data-driven web applications.

Django includes a number of built-in features and modules that make web development easier and more efficient. For example, it provides an Object-Relational Mapping (ORM) system that allows developers to interact with their database using Python code, without having to write raw SQL queries. It also includes a powerful templating engine for generating HTML pages, a robust authentication and authorization system, and support for handling user sessions, form submissions, and file uploads.

Django is designed to be modular and extensible, so developers can easily add new functionality to their applications by installing and integrating third-party apps and packages. It also includes a built-in administrative interface that provides a web-based interface for managing the data in the application's database.

Overall, Django is a powerful and flexible web framework that can help developers build complex, data-driven web applications quickly and easily, while still providing the flexibility and extensibility needed to handle even the most challenging development tasks.

MySQL Database

Microsoft SQL Server is a relational database management system developed by Microsoft. As a database server, it is a software product with the primary function of storing and retrieving data as requested by other software applications—which may run either on the same computer or on another computer across a network (including the Internet). Microsoft markets at least a dozen different editions of Microsoft SQL Server, aimed at different audiences and for workloads ranging from small single-machine applications to large Internet-facing applications with many concurrent users. Structured Query Language is a domain-specific language used in programming and designed for managing data held in a relational database management system(RDBMS), or for stream processing in a relational data stream management system(RDSMS). Originally based upon relational algebra and tuple relational calculus, SQL consists of a data definition language, data manipulation language, and data control language. The scope of SQL includes data insert, query, update and delete, schema creation and modification, and data access control. Although SQL is often described as, and to a great extent is, a declarative language (4GL), it also includes procedural elements. SQL was one of the first commercial languages for Edgar F. Codd's relational model, as described in his influential 1970 paper, "A Relational Model of Data for Large Shared Data Banks". Despite not entirely adhering to the relational model as described by Codd, it became the most widely used database language.

SYSTEM TESTING AND IMPLEMENTATION

8.SYSTEM TESTING AND IMPLEMENTATION

Testing is the vital to the success of the system. It makes a logical assumption that if all the parts of the system are correct, the goal will be successfully achieved in this project. It is the stage of implementation, which ensures that system works accurately and effectively before the live operation commences. It is a confirmation that all are correct and opportunity to show users that the system must be tested and show that the system will operate successfully and produce expected results under expected conditions. Software testing is a crucial element of software quality assurance and represents the unlimited review of specification, design and coding. Testing represents an interesting anomaly for the software. During the earlier definition and development phase, it was attempted to build the software from an abstract concept to implement. Testing is a set of activity that can be planned in advance and conducted. Systematically, this is aimed at ensuring that the system works accurately and efficiently before live operations commences.

8.1 Types of Testing

Different types of testing are,

- Unit testing
- Integration testing
- Functional testing
- Performance testing

Unit Testing

Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases. All modules were tested and individually as soon as they were completed and were checked for their correct functionality. Unit testing deals with testing a unit as a whole. This would test the interaction of many functions but confine the test within one unit. This testing is carried out during programming stage itself. In this testing step each Module is found to be working satisfactorily as regard to the expected output from the module.

Integration Testing

Integration testing is a systematic technique for testing to overcome the errors associated within the interface. In this System all the modules such as login, registration, admin in web, user in web, and the final hardware and software are combined and then the entire program is tested as a whole. Thus, in the integration testing step all the errors in the implementation of the system are corrected. Data can be lost across an interface one module can have an adverse effect on others; sub-functions when combined may not produce the desired major functions integration testing is a systematic testing for constructing the program structure. The objective is to take unit tested modules and to combine them and test it as a whole.

- The system contains various components and they have to be combined and tested.
- The software is embedded into hardware and tested.
- The modules are combined and tested.
- The hardware part tested separately.

Functional Testing

Functional testing is a type of software testing that verifies that an application or system functions correctly and meets the specified requirements. It is a black-box testing technique that focuses on the external behavior of the system and ensures that it performs the tasks it is intended to do. Functional testing involves creating test cases that cover various scenarios, inputs, and outputs to validate the expected behavior of the system. The goal of functional testing is to ensure that the application or system works as expected from the user's perspective and that it meets the business requirements. Functional testing can be manual or automated and can be performed at different stages of the software development life cycle, from unit testing to system testing and acceptance testing.

Performance Testing

Performance testing is a type of software testing that evaluates the speed, responsiveness, stability, scalability, and resource usage of an application or system under different conditions. It is typically conducted to identify performance bottlenecks and measure the system's performance in terms of response time,

throughput, and resource utilization. Performance testing can involve different types of testing, such as load testing, stress testing, endurance testing, and spike testing. It involves simulating realistic workloads and traffic patterns to measure how the system behaves and performs under different scenarios. The goal of performance testing is to ensure that the system meets the performance requirements and can handle the expected workload and user traffic. It is an essential part of the software development life cycle and helps to identify and address performance issues before they affect the end-user experience.

8.2 Implementation

Implementation is the stage of project, when theoretical design is turned in to a working system. The most crucial stage is achieving a successful system and confidence that the new system will work effectively. It involves careful planning, investigation of the manual system and to new system. Implementation means converting a new or revised system design into an operational one. The implementation includes all those activities that take place to convert from the old system to the new one.

There are several activities involved while implementing a project:

- Careful planning.
- Investigating the current system and its constraints on implementation.
- Design of methods to achieve the changeover.
- Training of the staff in the changeover procedure and evaluation of change over method.

Implementation is the final stage and it is an important phase. The first task in implementation was the implementation planning, that is deciding on methods to be adopted. After the system was implemented successfully, training of the user was one of the most important subtasks of the developer. For this purpose, the user or system manual were prepared and handed over to the user to operate the developed system. So, changeover plays a vital role, which checks the developed tool for the following requirements, and then only the user accepted the developed tool. The changeover took place only when the system had been proved to the satisfaction of the system analysis and other implementation activities have been completed.

SYSTEM MAINTENANCE

9.SYSTEM MAINTENANCE

Maintenance is making adaptation of the software for external changes (requirements changes or enhancements) and internal changes (fixing bugs). When changes are made during the maintenance phase all preceding steps of the model must be revisited.

There are 3 types of maintenance:

- Corrective (Fixing bugs/errors)
- Adaptive (Updates due to environment changes)
- Perfective (Enhancements, requirements changes)

Maintenance is enigma of the system development. The definition of the software maintenance can be given describing four activities that are undertaken after the program is released for use.

The maintenance activity occurs since it is unreasonable to assume that software testing will uncover all in a large system. The second activity that contributes the definition of maintenance occurs since rapid changes are encountered in every aspects of computing. The third activity involves recommendation for new capabilities, modification to the existing functions and general enhancements when the software is used. The fourth maintenance activity occurs when software is changed to improve future maintainability or reliability.

FUTURE ENHANCEMENT

10. FUTURE ENHANCEMENT

At present the collection of Garbages and distribution of balance food items in the function and complaint are only doing. In future we can add companies for recycling the garbage items that are collecting Haritha Karma Sena Members. We can also provide a facility to provide home appliances those who need it to the person from who are trying remove it from the house. The Users can also provide an opportunity to select the items that are needed to give Haritha Karma Sena.

CONCLUSION

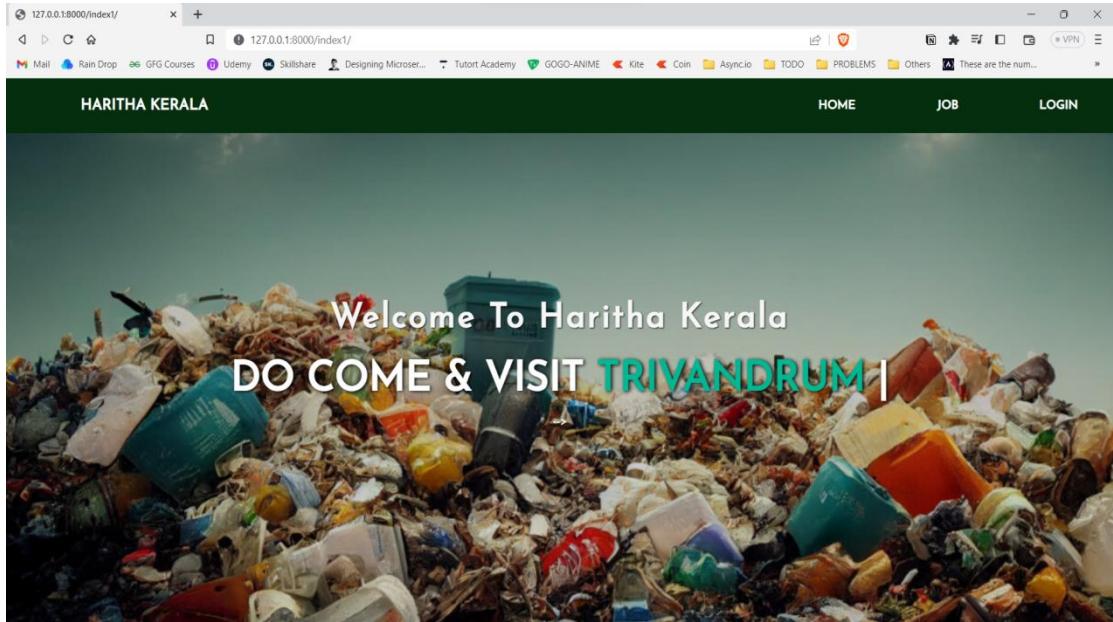
11.CONCLUSION

Haritha Kerala is a system that corporate with Haritha Karma Sena for the collection of garbages monthly from the houses. This system will be able to overcome many problems that are facing by Haritha Karma sena members while collecting garbages from the houses. In this system the admin will add district and districts will add local bodies. Then the local bodies will appoint Haritha Karma sena Members , add wards, Allot the houses and ward for garbage collection, Add houses in each ward. The Haritha Karma Sena members will inform the house owners about the collection details and they will verify the function details that are provided by the house owners. The house owners can view the collection details that are provided by the Haritha Karma Sena Members and they can also collect food items that are coming balance in the functions. This system will help to do so many works tht are done in manually in to online. It will save time and cost.

APPENDIX

PUBLIC:

Home



Job Application

A screenshot of a web browser showing the 'APPLICATION FORM' section of the website at 127.0.0.1:8000/application/. The form is overlaid on a background image of a city street. The form fields include: APPLICANT NAME (Anjana S), ADDRESS (Anther House Vengeri), DATE OF BIRTH (07/08/1998), GENDER (Female), AGE (25), QUALIFICATION (PlusTwo), DISTRICT (Kozhikode), and LOCAL BODY (Kozhikode Corporation). The browser's address bar shows '127.0.0.1:8000/application/'.

The screenshot shows a web-based application for an auditions registration. The form is overlaid on a background image of a city street and buildings. The form fields are as follows:

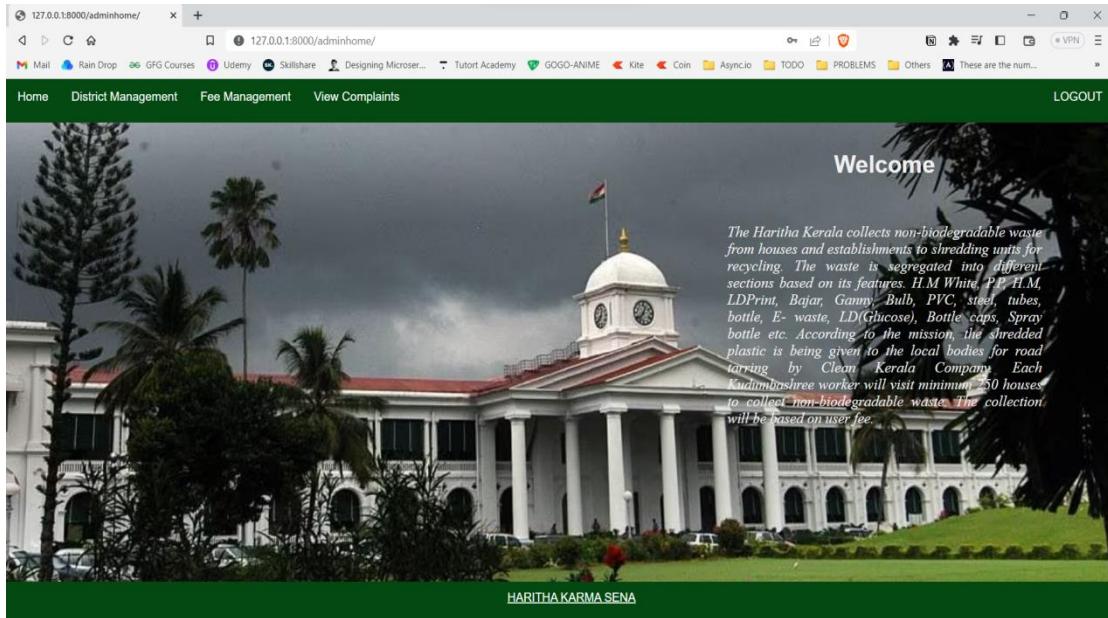
- AGE: 25
- QUALIFICATION: PusTwo
- DISTRICT: Kozhikode
- LOCAL BODY: Kozhikode Corporation
- WARD NUMBER: 1
- RATION CARD TYPE: BPL
- ANNUAL INCOME: 50000
- PHONE NUMBER: 7896543210
- EMAIL: anjana@gmail.com
- UPLOAD PHOTO: Choose File img2.jpg
- SUBMIT button

ADMIN:

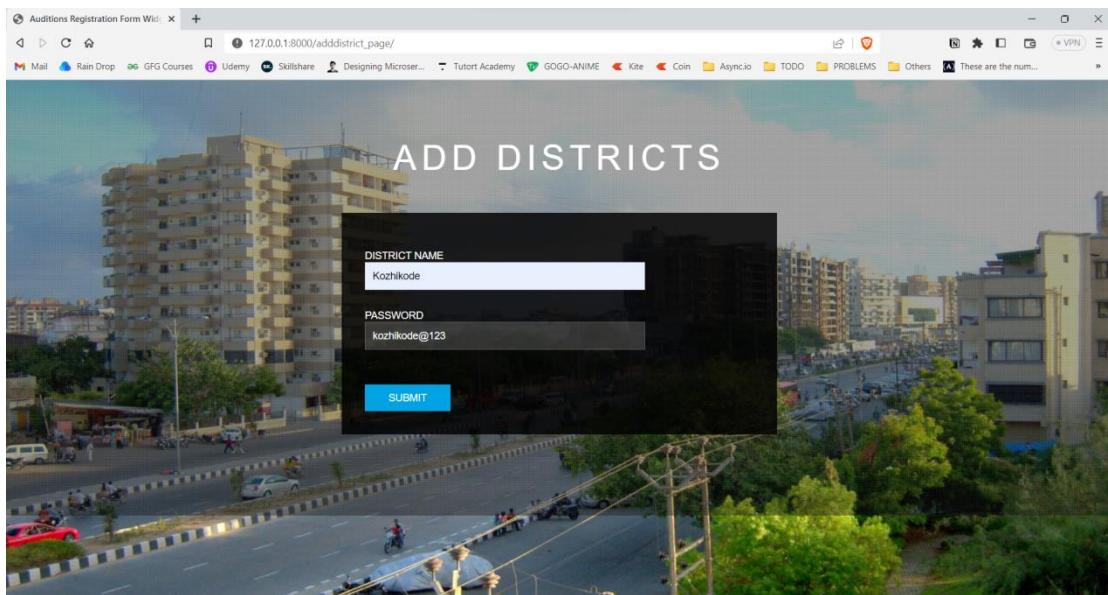
Login

The screenshot shows a simple login interface with a green header bar containing the word "Login". Below the header are two input fields: one for the username "admin" and another for the password, which contains four dots as a placeholder. At the bottom is a large green "Login" button.

Home



Add District



Add Fee

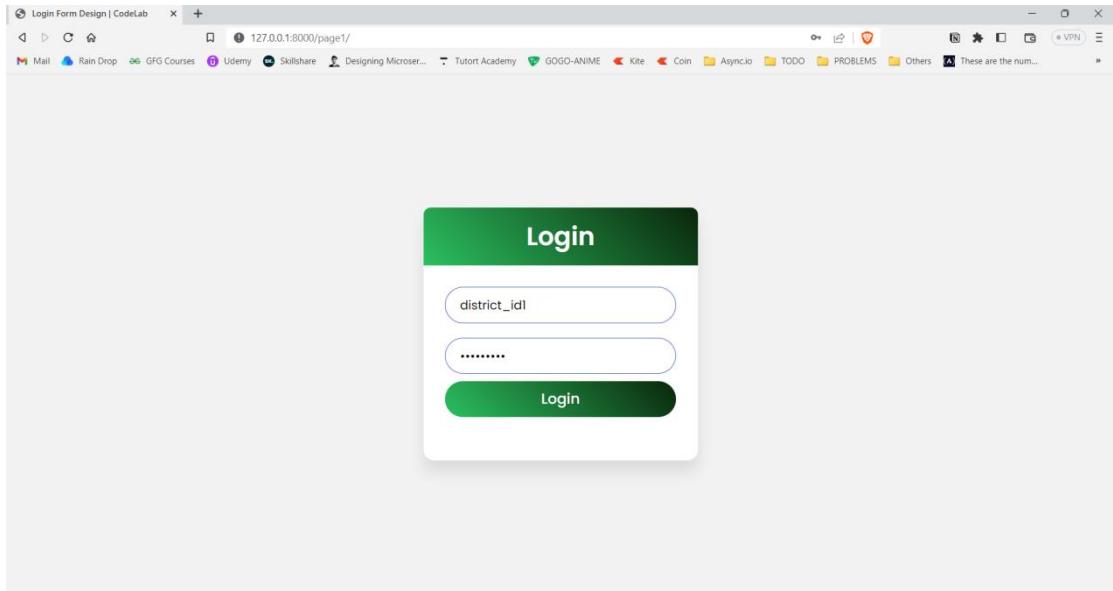
The screenshot shows a web browser window with the URL 127.0.0.1:8000/addfee/. The page title is "ADD FEE DETAILS". The form has four input fields: "FEE NAME" (Plastic), "TITLE" (Garbage), "AMOUNT" (50), and "DATE" (05/20/2023). Below the form is a blue "SUBMIT" button. The background of the page is a photograph of a city street with buildings and trees.

View Complaint

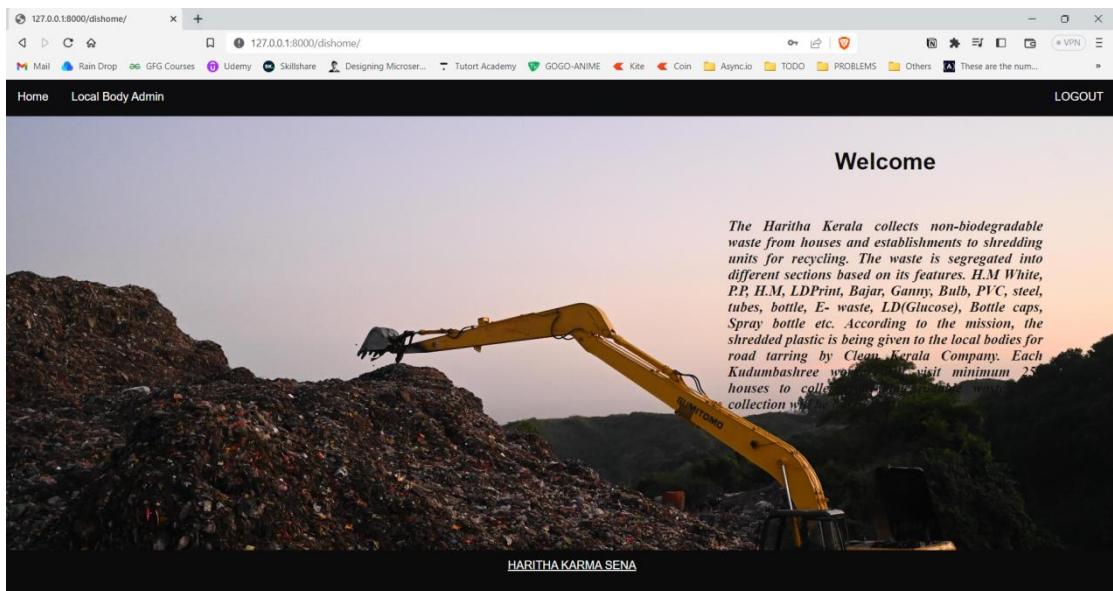
The screenshot shows a web browser window with the URL 127.0.0.1:8000/viewcomplaint/. The page title is "VIEW COMPLAINTS". There is a single table row with two columns: "House Number" (001) and "Complaint" (I am writing to express my deep concern about the).

DISTRICT OFFICER:

Login



Home



Add Local Body

The screenshot shows a web browser window with the URL `127.0.0.1:8000/addlocalbody/`. The page title is "ADD LOCAL BODY". The form contains the following fields:

- NAME: kozhikode-corporation
- DISTRICT: district_id1
- CATEGORY: Corporation
- PASSWORD: Locallbody@123

A blue "SUBMIT" button is located at the bottom of the form.

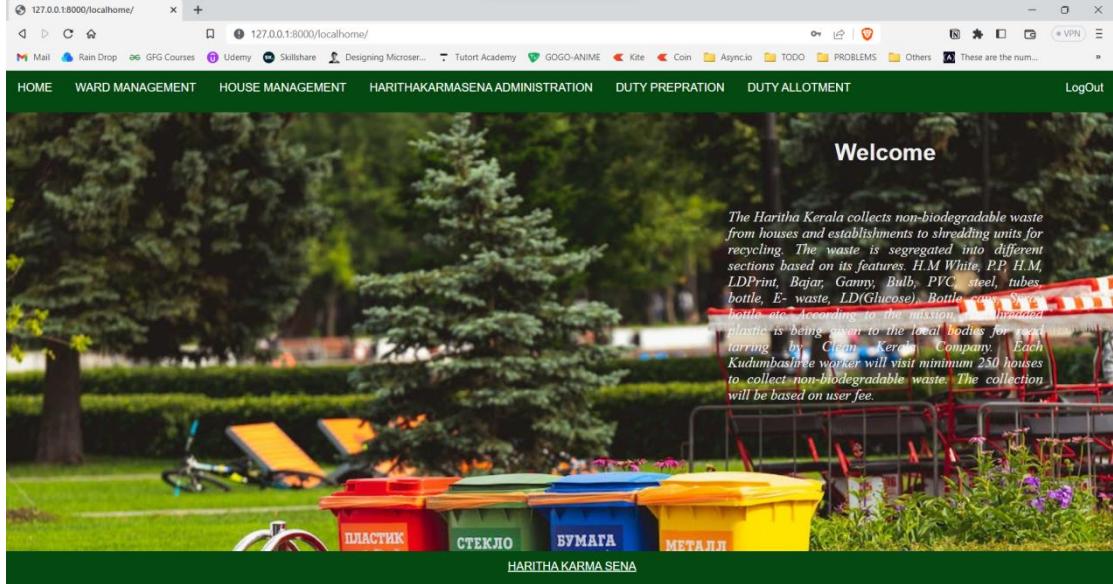
LOCAL BODY:

Login

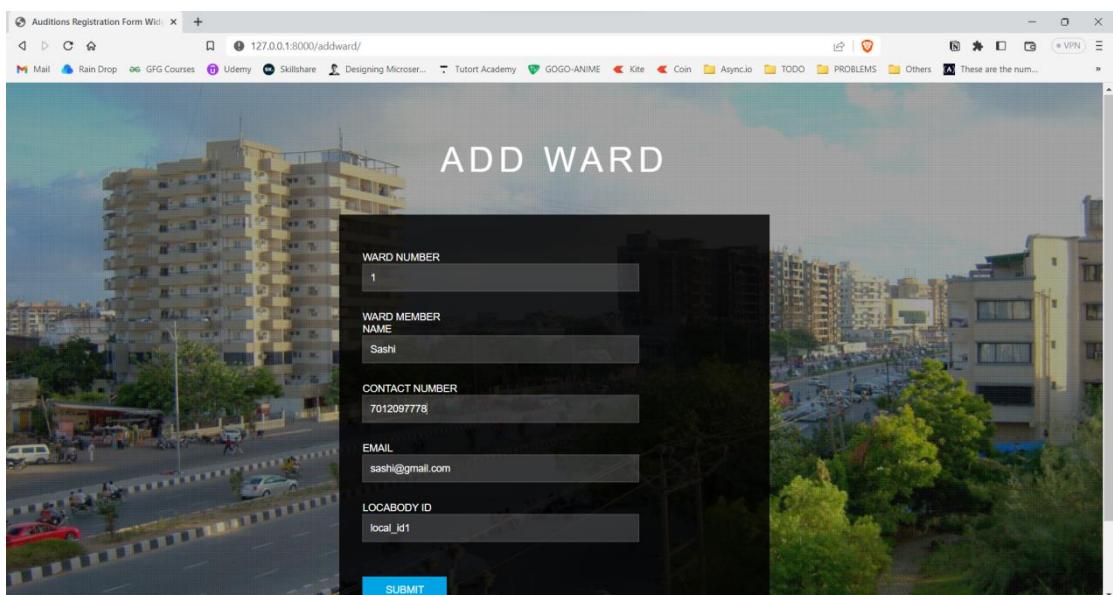
The screenshot shows a web browser window with the URL `127.0.0.1:8000/page1/`. The page title is "Login". The form consists of two input fields and a green "Login" button:

- Input field 1: local_id (placeholder: local_id1)
- Input field 2: password (placeholder:)
- Green "Login" button

Home



Add Ward



Add House

ADD HOUSE

HOUSE NUMBER	001
WARD NUMBER	1
HOUSE NAME	Karthika
HOUSE OWNER NAME	Karthik M
LOCATION	Karapamba
ADDRESS	Karthika House Karapamba

ADD HOUSE

WARD NUMBER	1
HOUSE NAME	Karthika
HOUSE OWNER NAME	Karthik M
LOCATION	Karapamba
ADDRESS	Karthika House Karapamba
AADHAR NUMBER	023541698715
CONTACT NUMBER	8523697410
EMAIL	karthik@gmail.com

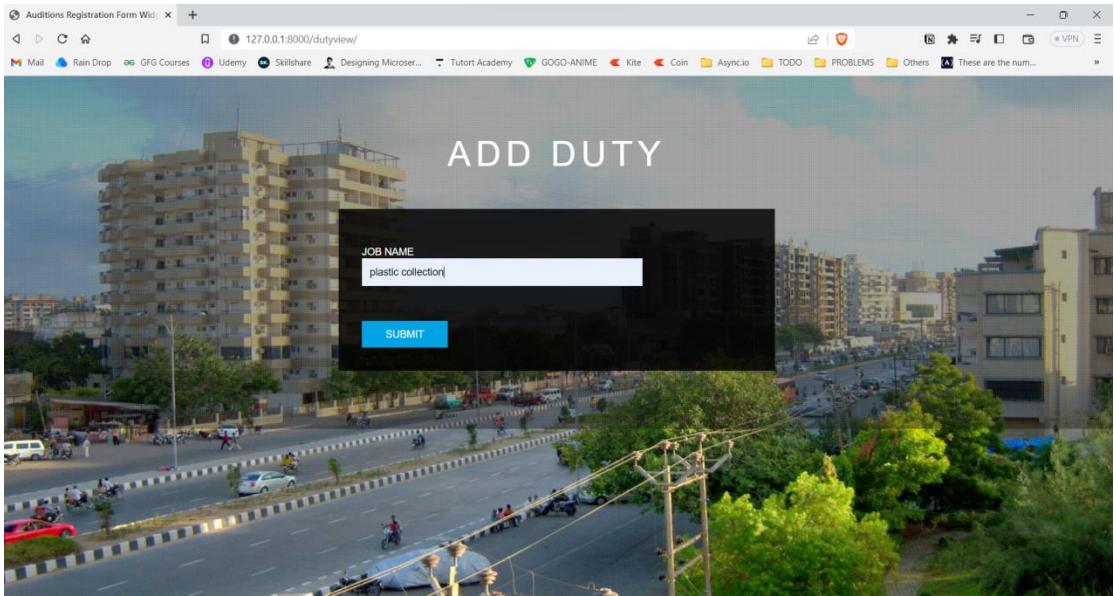
SUBMIT

Verify Application

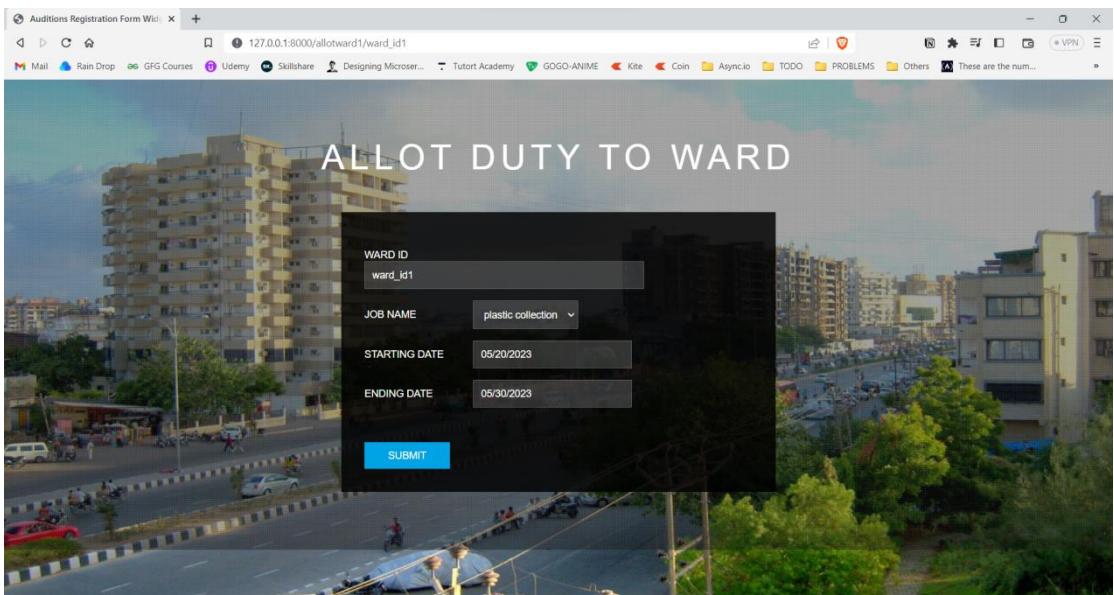
VERIFY APPLICATION FOR EMPLOYEMENT									
Applicant Name	Address	Date Of Birth	Gender	Age	Qualification	District	Ward Number	Ration Card Type	Anual Inc.
Nadhira M	Nahimath House Vengeri	06/12/1997	Female	26	PusTwo	Kozhikode	1	BPL	450

VERIFY APPLICATION FOR EMPLOYEMENT						
District	Ward Number	Ration Card Type	Anual Income	Phone Number	Email	Photo
Kozhikode	1	BPL	45000	9856320147	nadhira@gmail.com	

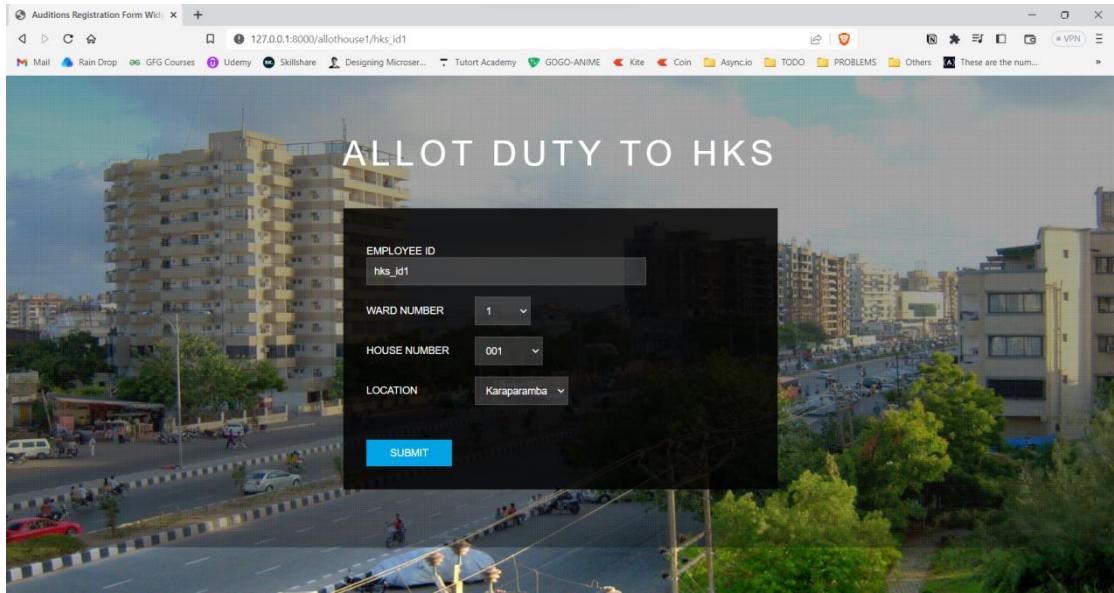
Add Duty



Allot Duty to Ward

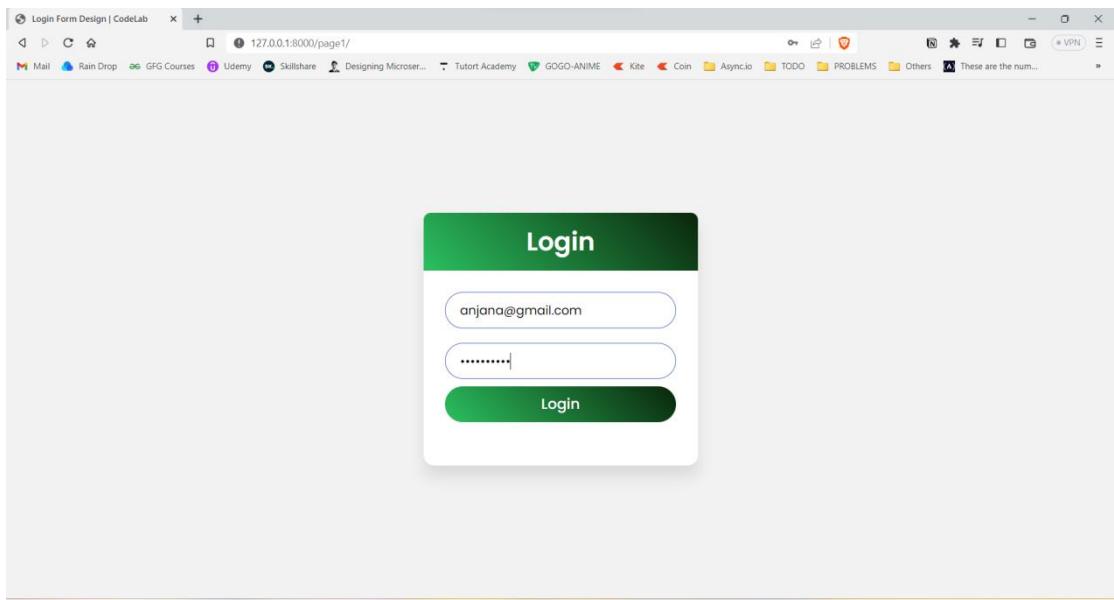


Allot Duty to Haritha Karma Sena Employee



HARITHA KARMA SENA EMPLOYEE:

Login



Home

Welcome

The Clean City collects non-biodegradable waste from houses and establishments to shredding units for recycling. The waste is segregated into different sections based on its features. H.M White, P.P, H.M, LDPrint, Bajar Gamy, Bulb, PVC, steel, tubes, bottle, E-waste, LD(Glucose), Bottle caps, Spray bottle etc. According to the mission, the shredded plastic is being given to the local bodies for road tiling. In Clean Kerala Company, each Kudamukku worker will visit minimum 200 houses to collect non-biodegradable waste. The collection will be done on user fee.

HARITHA KARMA SENA

View Ward Alloted

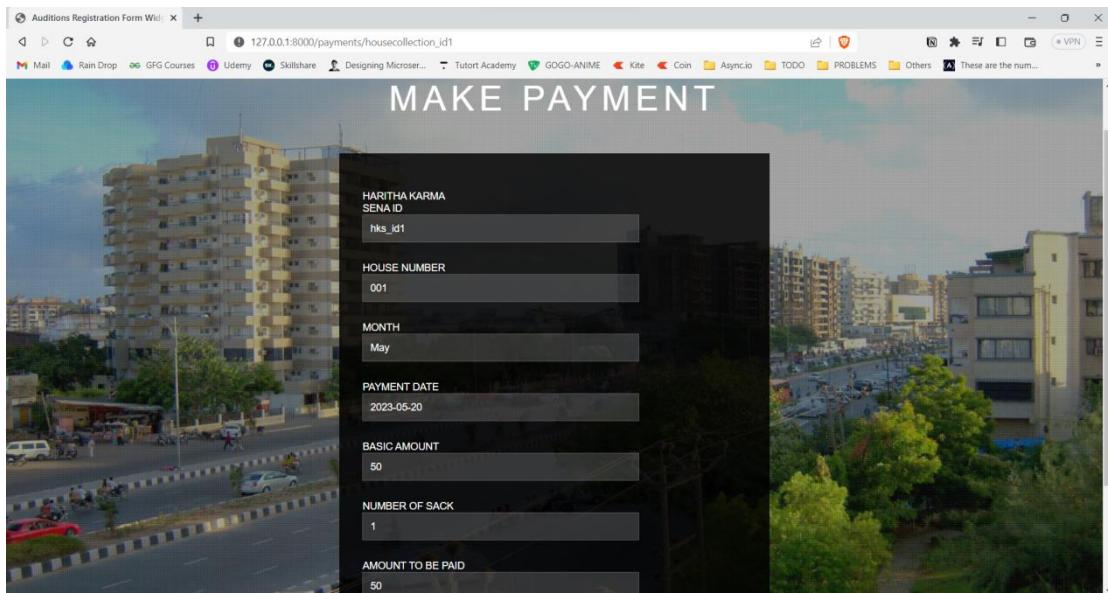
Ward Number	Job Name	Starting Date	Ending Date	Member Name
1	plastic collection	05/20/2023	05/30/2023	Sashi

View House Alloted

HOUSE DETAILS				
Ward Number	House Number	House Owner	Location	Address
1	001	Karthik M	Karaparamba	Karthika House Karaparamba ADD COLLECTION DETAILS

Payment Entry

HOUSE PAYMENT DETAILS							
House Number	House Owner	Ward Number	Material	Month	Year	Collection Date	Collection Fee
001	Karthik M	1	plastic collection	May	2023	05/28/2023	50 PAYMENT



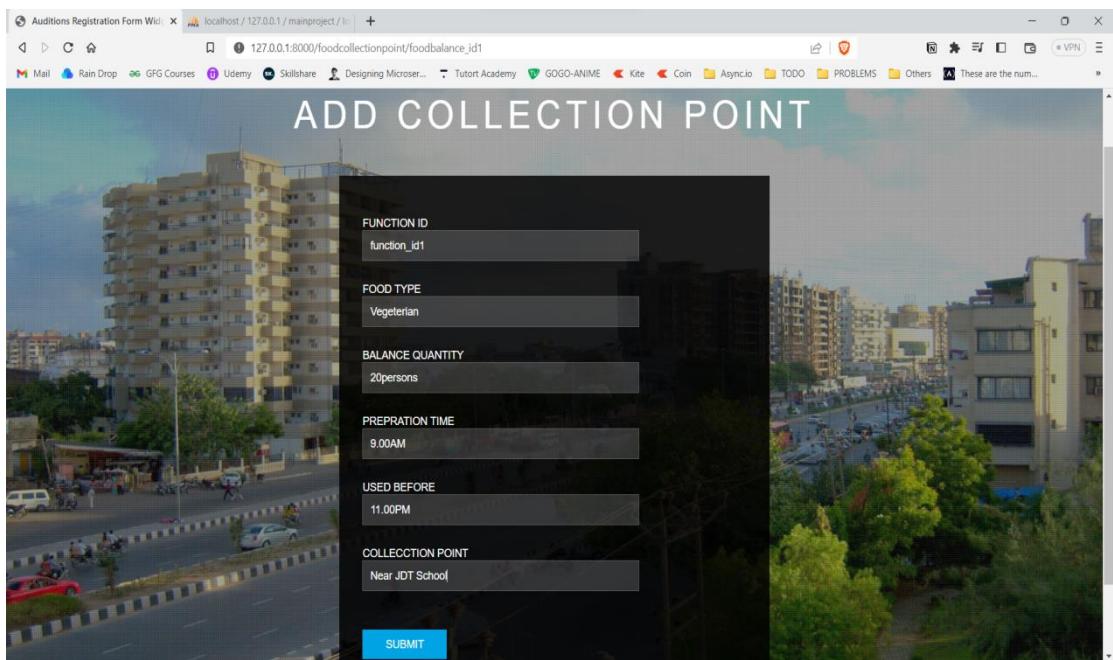
Verify Function Details

VERIFY FUNCTION DETAILS						
House Number	Ward Number	House Name	House Owner	Function Name	Function Date	
001	1	Karthika	Karthik M	Marriage	05/22/2023	ACCEPT REJECT

Food Balance Details

VIEW FOOD BALANCE DETAILS								
House Number	Ward Number	Function Name	Function Date	Food Type	Food Quantity	Food prepared Time	Food use Before	
001	1	Marriage	05/22/2023	Vegetarian	20persons	9.00AM	11.00PM	ADD COLLECTION POINT

Add Collection Point



The screenshot shows a web application interface for adding a collection point. The form is centered over a blurred background image of a city street with buildings and trees. The form fields are as follows:

- FUNCTION ID: function_id1
- FOOD TYPE: Vegetarian
- BALANCE QUANTITY: 20persons
- PREPARATION TIME: 9.00AM
- USED BEFORE: 11.00PM
- COLLECTION POINT: Near JDT School

A blue "SUBMIT" button is located at the bottom of the form.

View Food Request

Table 01

127.0.0.1:8000/viewfoodrequest/

House Number	Ward Number	Function Name	Function Date	Food Type	Food Quantity	Collection Point	Request Time	Request Date
001	1	Marriage	05/22/2023	Vegetarian	20persons	Near JDT School	2023-05-20	2023-05-20

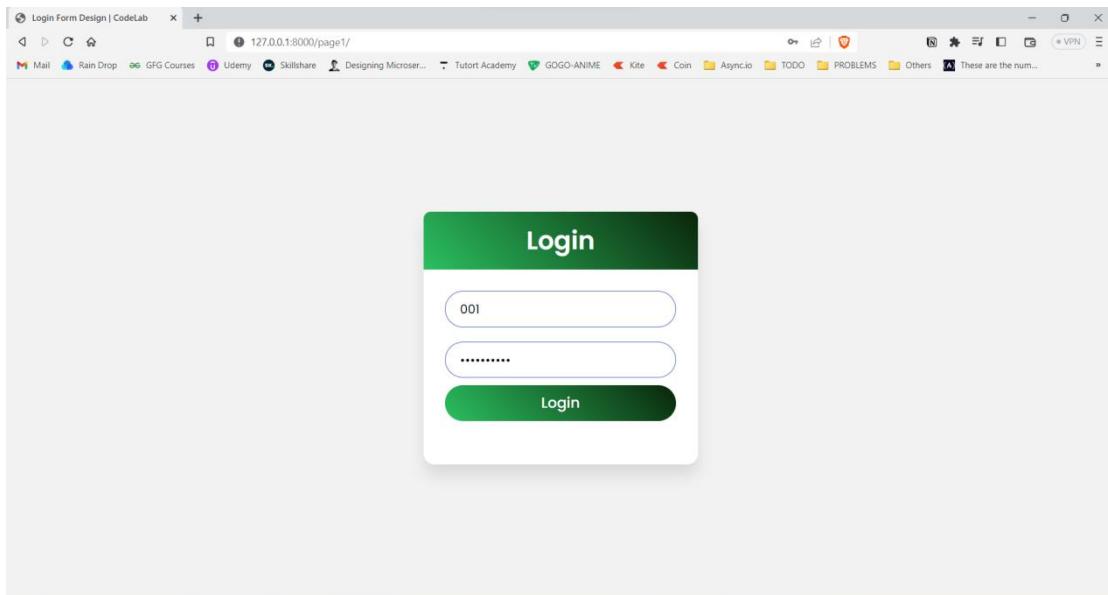
Table 01

127.0.0.1:8000/viewfoodrequest/

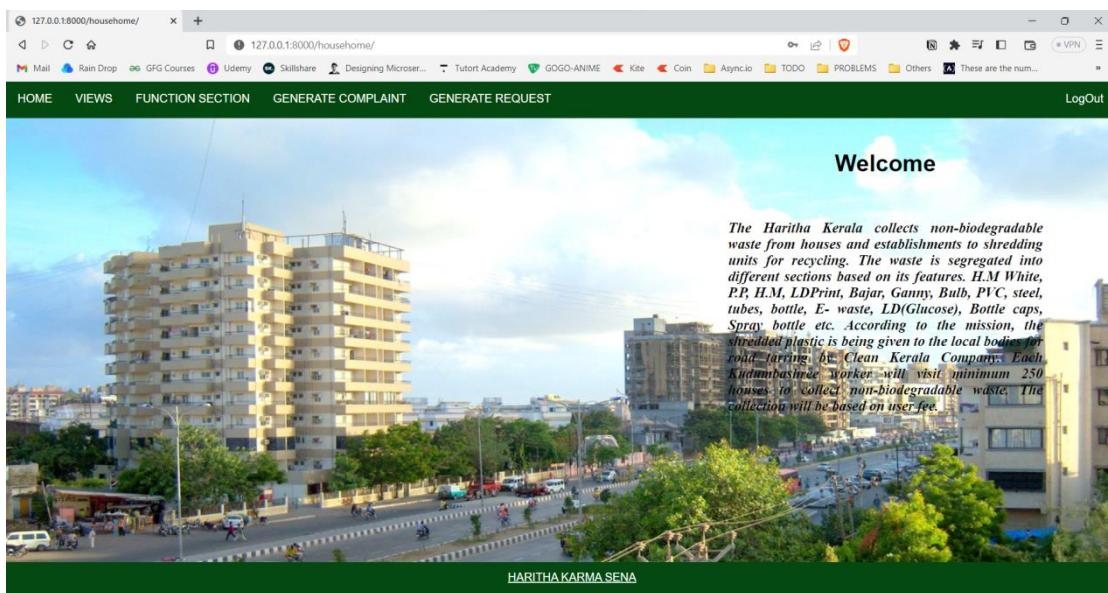
Function Name	Function Date	Food Type	Food Quantity	Collection Point	Request Time	Request Date	ACCEPT	REJECT
Marriage	05/22/2023	Vegetarian	20persons	Near JDT School	2023-05-20	2023-05-20		

HOUSE:

Login



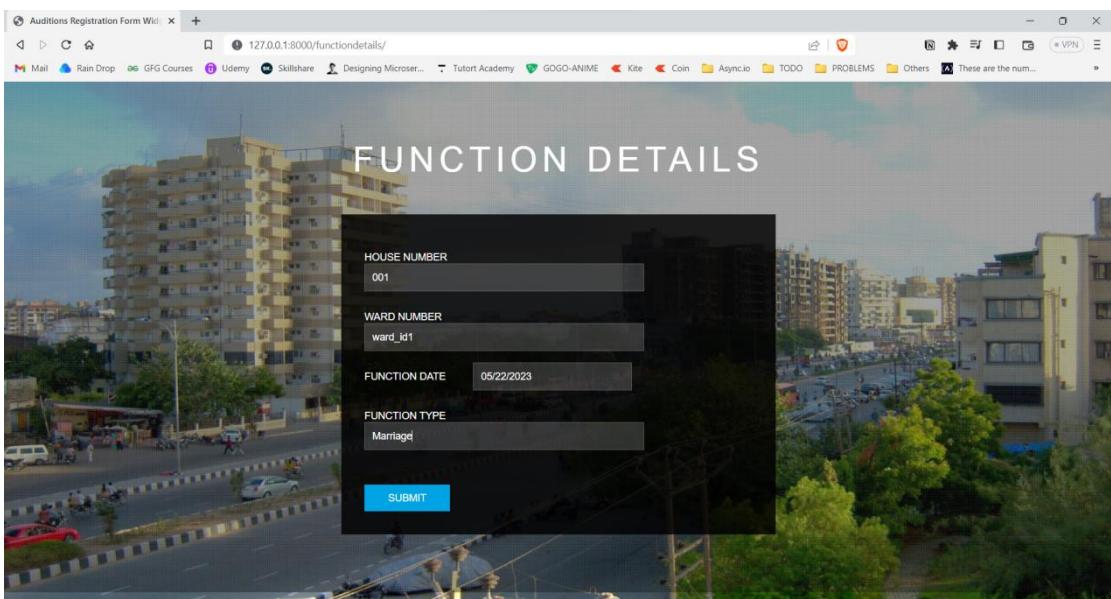
Home



View Collection Details

HOUSE COLLECTION DETAILS					
House Number	Ward Number	Month	Year	Collection Date	Collection Fee
001	1	May	2023	05/28/2023	50

Add Function Details



The screenshot shows a web application interface for adding function details. The background is a photograph of a city street with a multi-story building and greenery. In the foreground, a dark overlay contains the following form fields:

- HOUSE NUMBER: 001
- WARD NUMBER: ward_id1
- FUNCTION DATE: 05/22/2023
- FUNCTION TYPE: Marriage

A blue "SUBMIT" button is located at the bottom of the form.

Update Food Balance Details

Table 01

127.0.0.1:8000/viewfunctiondetails/

Function Date: 05/22/2023 | Function Name: Marriage | UPDATE FOOD BALANCE DETAILS

Auditions Registration Form Widi

127.0.0.1:8000/foodbalances/function_id1

FUNCTION ID: function_id1
FOOD TYPE: Vegetarian
BALANCE QUANTITY: 20personS
PREPARATION TIME: 9.00AM
USED BEFORE: 10.00PM

FOOD BALANCE DETAILS

SUBMIT

View Collection Point

Function Date	Function Name	
05/22/2023	Marriage	VIEW COLLECTION POINT

VIEW FOOD BALANCE DETAILS	
House Number	001
Ward Number	1
Function Name	Marriage
Function Date	05/22/2023
Food Type	Vegetarian
Food Quantity	20persons
Food prepared Time	9.00AM
Food use Before	11.00PM
Collection Point	Near JDT School

Generate Request

Table 01

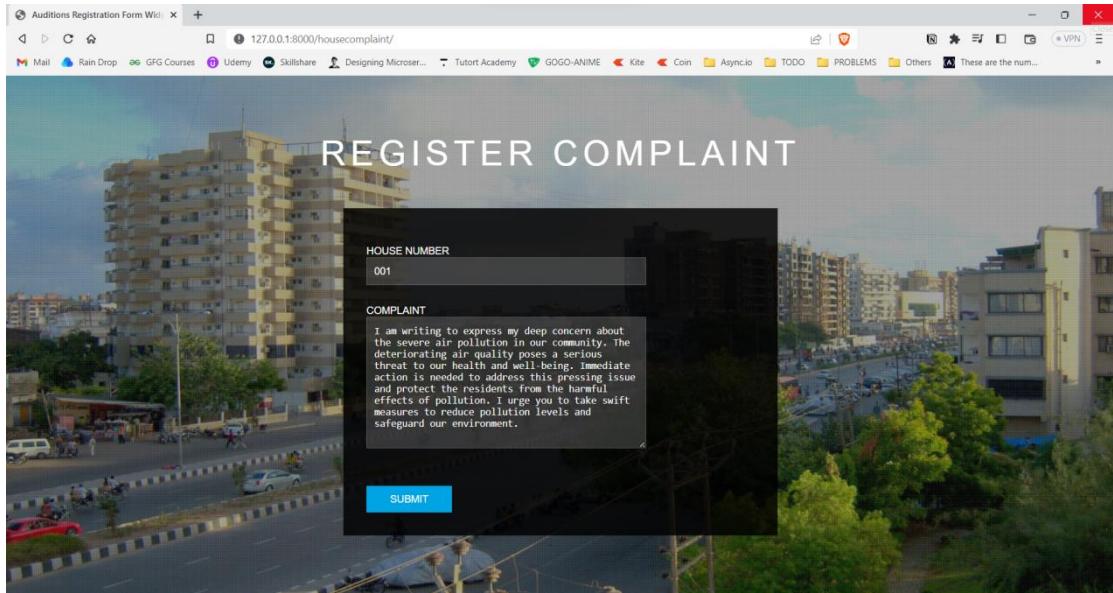
Function Number	Function Name	Function Date	Food Type	Food Quantity	Food prepared Time	Food use Before	Collection Point
	Marriage	05/22/2023	Vegeterian	20persons	9.00AM	11.00PM	Near JDT School GENERATE REQUEST

Auditions Registration Form Widi

REQUEST GENERATION

FOOD ID	foodbalance_id1
HOUSE NUMBER	001
TIME	14:07:35
FUNCTION DATE	2023-05-20
SUBMIT	

Generate Complaint



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 - "Python Programming: An Introduction to Computer Science" by John Zelle (3rd Edition).
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 - "Django for Beginners: Learn Web Development with Django" by William S. Vincent (3rd Edition).
- [4] Django Basics and Fundamentals:
 - "Django for Beginners: Learn Web Development with Django" by William S. Vincent (3rd Edition).
 - "Python Crash Course: A Hands-On, Project-Based Introduction to Programming" by Eric Matthes (2nd Edition) - Includes Django basics.

