ST. TERESA'S COLLEGE (AUTONOMOUS), ERNAKULAM

AFFILIATED TO MAHATMA GANDHI UNIVERSITY, KOTTAYAM

PROJECT REPORT ON

TRASH TO TREASURE

In partial fulfillment of the requirements for the

Award of the degree of

B Voc SOFTWARE DEVELOPMENT

By

ANISHKA ANTONY

III B Voc Software Development

Register No: VB22SWD007

Under the guidance of

Ms. MARY SONA N.X

Department of Computer Applications

2022-2025

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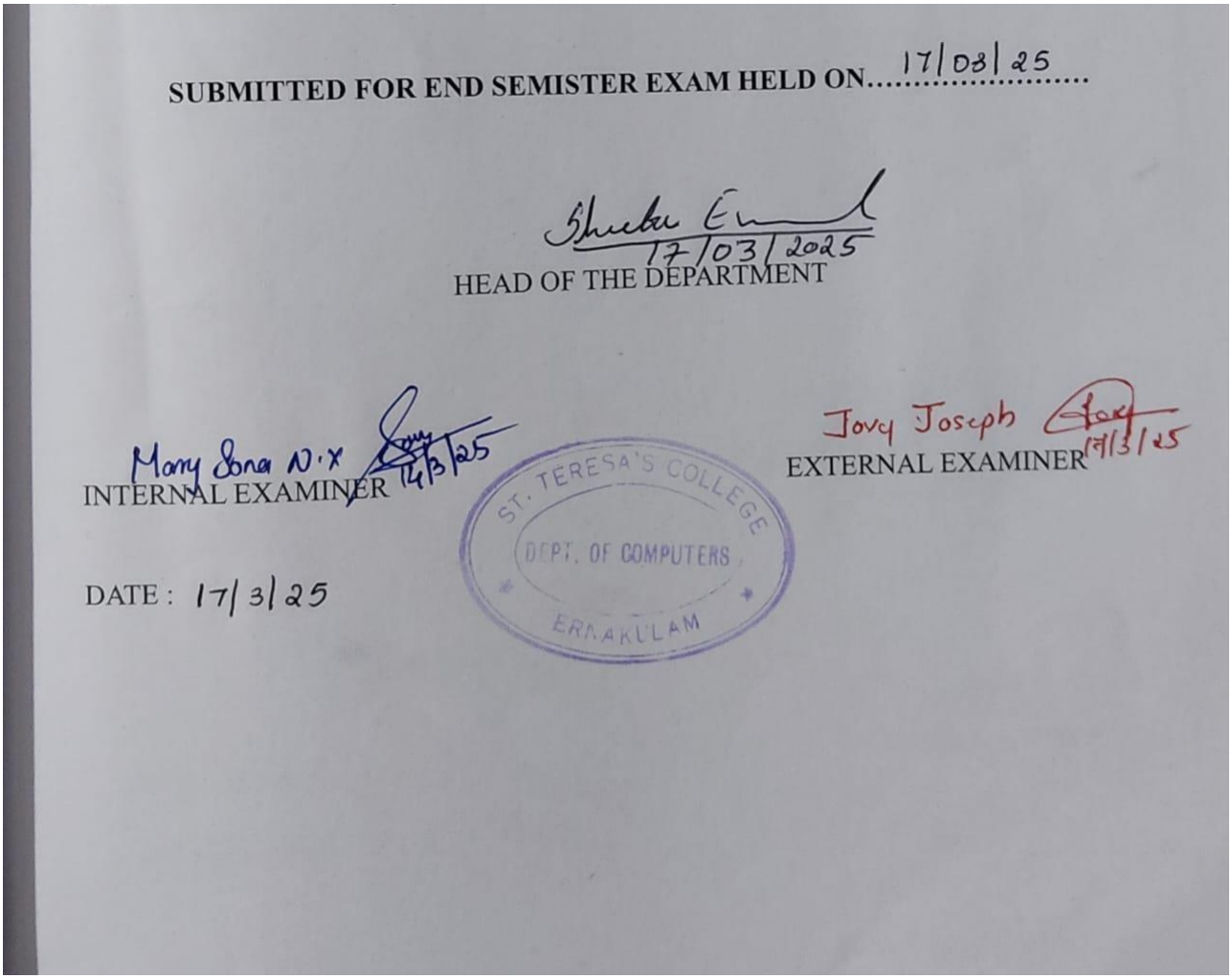
ESTD 1925

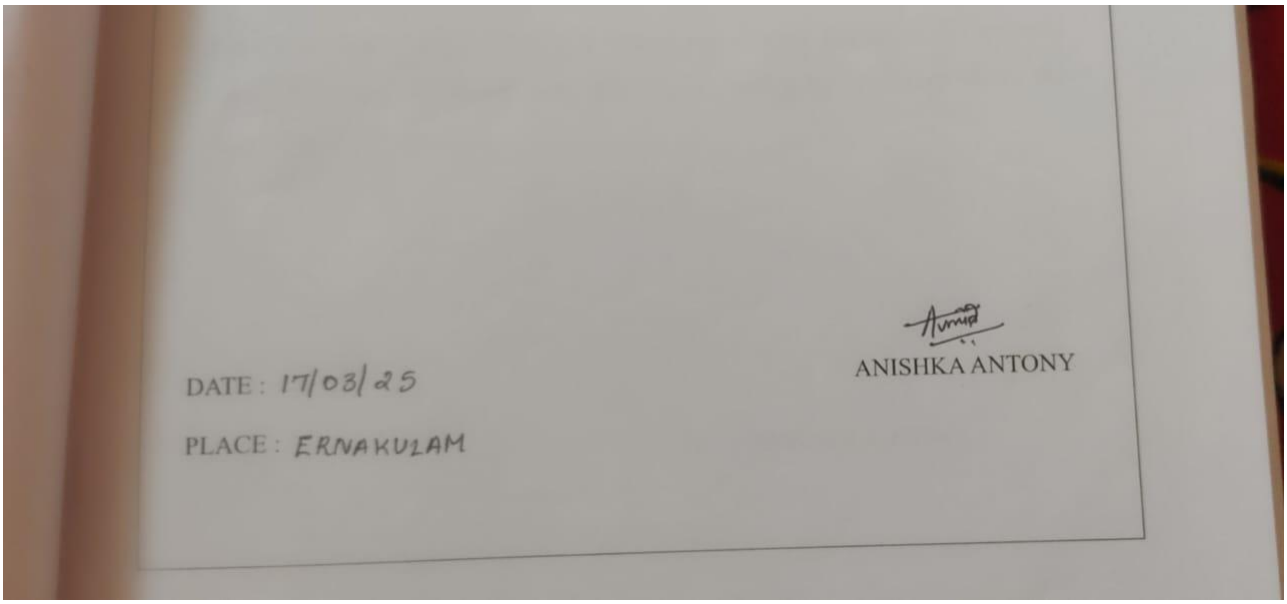
CERTIFICATE

This is to certify that the project report on **TRASH TO TREASURE** is a bonafide record of the work done by **ANISHKA ANTONY (VB22SWD007)** during the year 2022-2025 and submitted in partial fulfillment of the requirement for the degree of **B.Voc Software Development** under Mahatma Gandhi University.



DECLARATION

I, **ANISHKA ANTONY (Register no: VB22SWD007), B Voc Software Development** final year student of **St. Teresa's College (Autonomous), Ernakulam**, hereby declare that the project submitted named **TRASH TO TREASURE** for the **Bachelors of Vocation Degree in Software Development** is my original work. I further declare that the said work has not previously been submitted to any other university or academic body.



ACKNOWLEDGEMENT

First and foremost, I would like to thank God almighty for the successful completion of my project. I express my sincere thanks to **Manager Rev. Sr. Nilima CSST, Principal Dr. Alphonsa Vijaya Joseph and Vice Principal Sr.Suchita CSST of St. Teresa's college (AUTONOMOUS**) for giving me an opportunity to undertake this project. I express my sincere gratitude towards the **Head of the department Ms. Sheeba Emmanuel** and, I would like to extend my heartfelt appreciation to **Ms. Sheeba Emmanuel**, my project guide for her constant support which helped in the successful completion of my project. I'm grateful to all the faculties of the Department of Computer Applications for their unwavering support and guidance throughout this journey. Finally, I extend my sincere thanks to my parents and friends and all those who directly or indirectly contributed to the realization of this project.

ANISHKA ANTONY

SYNOPSIS

The project aims to streamline waste management processes by providing a user-friendly platform that enables efficient creation, tracking, and management of service requests related to city waste. Focusing on recyclables such as newspapers, glass, plastic, steel/tin cans, clothes, and leather, the system automates tasks associated with waste collection and promotes sustainability by creating a dedicated marketing space for selling recycled products. By integrating automation and convenience, the project seeks to enhance waste management efficiency and encourage recycling practices within urban environments.

CONTENS

1. INTRODUCTION

1.1 INTRODUCTION

The purpose of the project is to streamline service management processes by providing users with a convenient to create, track and mange service requests efficiently. This project is to design and implement an efficient and user-friendly that automates various tasks associated with managing a waste in a city.(trash) This project is mainly focusing on collecting the recyclables waste items like newspaper, glass, plastic ,steel/tin cans , clothes , leathers etc. Creating marketing space for selling recycled products.

ABOUT THE PROJECT

This project aims to streamline service management processes by developing a user-friendly system for efficiently creating, tracking, and managing service requests related to waste management in urban areas. The focus is on collecting recyclable waste items, such as newspapers, glass, plastic, steel/tin cans, clothes, and leather, while also creating a marketing space for selling recycled products. By automating various tasks, the system enhances efficiency, simplifies operations, and promotes sustainable waste management practices.

2. SYSTEM ANALYSIS

2.1 INTRODUCTION

System Analysis is a detailed study of the various operations performed by the system and their relationship within the modules of the system. This phase involves the study of the parent system and identification of the system objectives . The main objective of this phase involves gathering necessary information and using the structured tool for analysis. This includes designing the system. In this project, the requirements are studied in detail and information are collected and documented.

2.2 EXISTING SYSTEM

The existing system requires significant manual intervention, lacks a structured approach to handling recyclable waste, and does not fully capitalize on the economic and environmental benefits of recycling. This project aims to address these shortcomings by introducing an automated and user-friendly solution

LIMITATIONS OF EXISTING SYSTEM:

- Manual Waste Collection
- Inefficient Tracking and Management
- Limited Awareness of Recycling
- Lack of Integration with Recycling Markets
- Environmental Impact

2.3 PROPOSED SYSTEM

The proposed system introduces an automated, user-friendly platform designed to address the inefficiencies of the current waste management process and promote sustainable practices.

Centralized Service Management Platform:

- A web-based or mobile application enabling users to create, track, and manage service requests for waste collection conveniently.

- Real-time status updates for better transparency and accountability

Automated Waste Collection Scheduling:

- Intelligent scheduling based on user requests, waste volume, and type.
- Optimized routes for collection vehicles to minimize time and fuel consumption.

Recyclable Waste Segregation and Tracking**:**

- Users can categorize waste into predefined recyclable types (e.g., glass, plastic, paper, etc.) during request creation.
- QR code or barcode-based tracking for collected waste to ensure proper processing.

Marketplace for Recycled Products:

- A dedicated platform for selling recycled items to businesses or individuals.
- Integration with local and global recycling markets to maximize economic benefits.

Citizen Awareness and Incentives:

- Educational features within the platform to promote waste segregation and recycling awareness.
- Reward-based programs to encourage active participation by citizens.

Data-Driven Insights:

- Collection and analysis of waste management data for better decision-making.
- Reports on recycling rates, environmental impact, and system performance.

Integration with Recycling Facilities:

- Seamless connection between waste collection systems and recycling plants to streamline the recycling process.
- Notifications for recycling facilities about incoming recyclable materials for efficient handling.

2.4 SYSTEM SPECIFICATION

After the analyst has collected all requires information regarding the software to be developed, and has removed all completeness, inconsistence, and anomalies from specification, he starts to systematically organize the requirements the form of an SRS document. The software developers refer to the SRS document to make sure that they developed exactly what the customer requires. The SRS document helps the maintenance engineers to understand the functionality of the new system**.**

2.5 OPERATING SYSTEM

Windows 11 is the latest major release of Microsoft's Windows NT operating system, released on October 5, 2021. It succeeded Windows 10 (2015) and is available for free any Windows 10 devices that meet the new Windows 11 system requirements. Windows 11 features a new user interface with a redesigned Start Menu and Taskbar, improved touch controls, enhanced security features, and integrated widgets for quick access to information. It also improved virtual desktops, gaming performance, and multitasking capabilities. However, it also has several disadvantages such as incompatible hardware, limited compatibility with older software, and fewer customization options.

2.6 LANGUAGE OR SOFTWARE PACKAGE

This application is build using HTML (Hypertext Markup Language): HTML is the standard markup language for creating web pages and web applications. It defines the structure and content of web pages using a system of tags and attributes.

CSS (Cascading Style Sheets): CSS is a style sheet language used for describing the presentation of a document written in HTML. It controls the layout, formatting, and appearance of web pages, allowing developers to customize the look and feel of their content.

JavaScript: JavaScript is a programming language that enables interactive and dynamic behavior on web pages. It is commonly used to add interactivity, validate forms, manipulate DOM elements, create animations, and perform various other tasks in web development.

2.7 HARDWARE & SOFTWARE SPECIFICATIONS

- Front End:
  - HTML, CSS, JavaScript
- Back End:
  - Database Base Management System: MySQL, python
- Operating System:

- Microsoft Windows 10 or above
- Browser: Google Chrome

❖ Software Used:

- Visual studio code

3. SYSTEM DESIGN

3.1 INTRODUCTION

System design is an interactive process through which requirements are transmitted to a "blueprint" for constructing the software initial; the blueprint depicts a holistic view of software that's design is represented at a high-level abstraction. A level that can be directly traced to specific data, functional and behavioral requirements. As design interaction occur subsequent refinement led to design representation at a much lower level of abstraction. System design is a creative art of inventing and developing input, databases, offline files, method, and procedures, for processing data to get meaningful full output that satisfy the organization objectives. Through the design phase consideration to the human factor, that is inputs to the users will have on the system. Some of the main factors that have to be noted using the design of the system are:

- Practicality: System must be capable of being operated over a long period of time and must have ease of use.

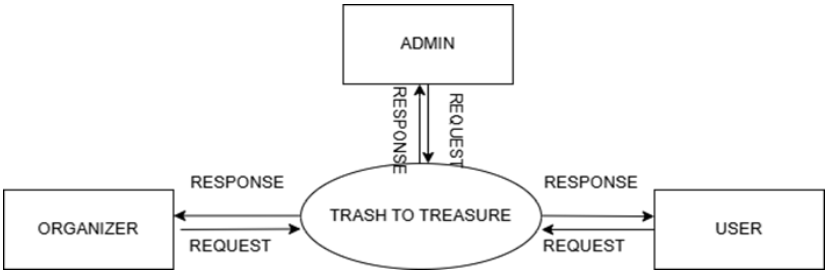
- Efficiency: Make better use of available resources. Efficiency involves accuracy, timeliness, and comprehensive system output.

- Cost: Aim of minimum cost and better results.

- Security: Ensure physical security of data.

3.2 DATA FLOW DIAGRAM

LEVEL:0



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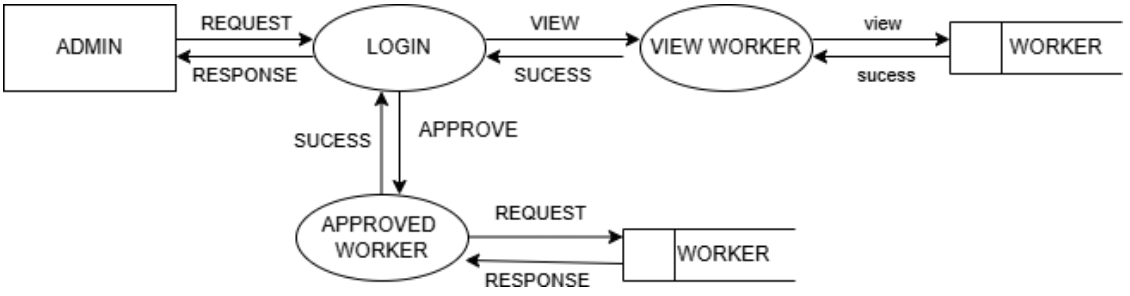

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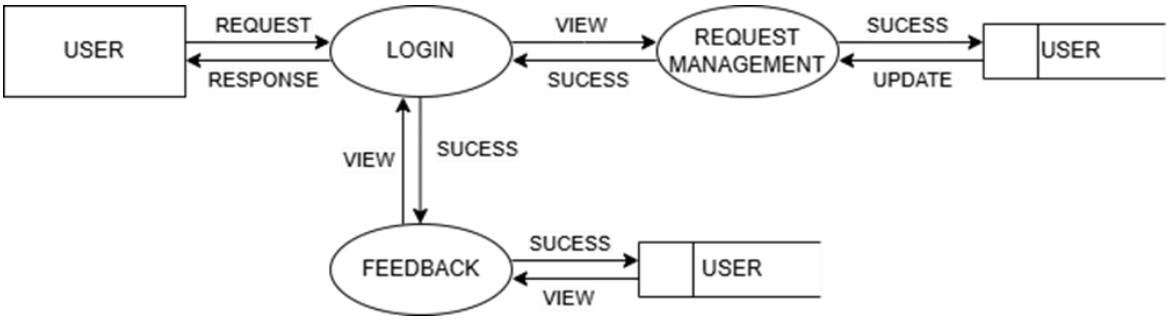
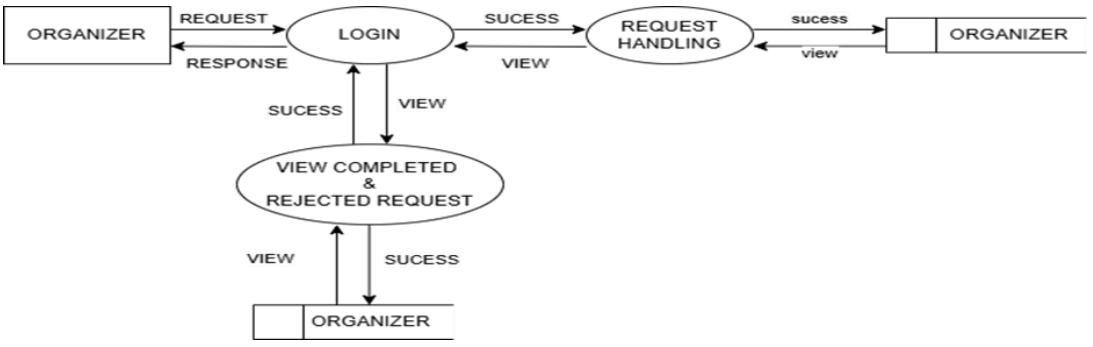


LEVEL:3



3.3 DATABASE DESIGN

Database design, A most important part of the system design phase. In a database environment, data available are used by several users instead of each program managing its own data, authorized users share data across application with the database software managing the data as an entity. A database is a collection of interrelated data stored with minimum redundancy to serve many users quickly and efficiently. The general objective is to make information access easy, quick, inexpensive, and flexible for the users. The general theme behind a database is to integrate all information. Database design is recognized as a standard of management information system and is available virtually for every computer system.

TABLE DESIGN

TABLE 1 : FEEDBACK

COLUMN NAME	DATA TYPE	SIZE	CONSTRAINTS	DESCRIPTION
id	integer	10	Primary key	Key of the table
feedback		100	Not null	Feedback of the products and services
Created_date	Date time	100	Not null	Date of the feedback
user_id	integer	10	Foreign key	Id of the user

TABLE 2 : LOGIN

COLUMN NAME	DATA TYPE	SIZE	CONSTRAINTS	DESCRIPTION
id	integer	10	Primary key	Key of the table
email	varchar	100	null	To login
password	varchar	100	null	To login

TABLE 3 : ORDER

COLUMN NAME	DATA TYPE	SIZE	CONSTRAINTS	DESCRIPTION
id	integer	10	Primary key	Key of the table
name	varchar	50	null	
phone	varchar	50	null	To inform the customer
address	varchar	255	Not null	Address of the customer
city	varchar	100	Not null	City of the customer
state	varchar	100	Not null	State of the customer
Postal_code	varchar	20	Not null	Pin code of the customer
country	varchar	100	Not null	Country of the customer
Order_date	Date time	100	Not null	Product ordered date
status	varchar	50	Not null	Delivered or not delivered
Payment_status	varchar	50	Not null	Paid or 1 not paid
Product_id	Integer	100	Not null	Id of the product
User_id	integer	10	Foreign key	Id of the user

TABLE 4 : ORAGANIZER

COLUMN NAME	DATA TYPE	SIZE	CONSTRAINTS	DESCRIPTION
id	integer	10	Primary key	Key of the table
First name	varchar	100	Not null	Name of the employee
Last name	varchar	100	Not null	Last name of the employee
email	varchar	254	Not null	email of the employee
password	varchar	128	Not null	Password of the employee
status	varchar	100	null	Picked or not picked
User_id	integer	10	Foreign key	Id of the employee

TABLE 5 : PRODUCT REVIEW

COLUMN NAME	DATA TYPE	SIZE	CONSTRAINTS	DESCRIPTION
id	integer	10	Primary key	Key of the table
rating	integer	5	Not null	To rate the products
Review_text	Varchar	50	Not null	Review of the product
Review_date	Date time	10	Not null	Date of the review
Product_id	integer	100	Not null	Id of the product
User_id	integer	10	Foreign key	Id of the user

TABLE 6 : RECYCLED PRODUCT

COLUMN NAME	DATA TYPE	SIZE	CONSTRAINTS	DESCRIPTION
id	integer	10	Primary key	Key of the table
Product_name	varchar	255	Not null	Name of the product
description	varchar	100	null	About the product
price	decimal	100	Not null	Price of the product
image	varchar	100	null	Image of the product
Org_id	integer	10	null	Id of the product

TABLE 7 : USER REGISTRATION

COLUMN NAME	DATA TYPE	SIZE	CONSTARINTS	DESCRIPTION
id	integer	10	Primary key	Key of the table
First name	Varchar	100	Not null	Name of the user
Last name	varchar	100	Not null	Last name of the user
email	varchar	254	Not null	Email of the user
address	varchar	100	Not null	Address of the user
password	varchar	128	Not null	Password of the user
User_id	integer	10	Foreign key	Id of the user

TABLE 8 : WASTE COLLECTION REQUEST

COLUMN NAME	DATA TYPE	SIZE	CONSTRAINTS	DESCRIPTION
id	integer	10	Primary key	Key of the table
name	varchar	100	Not null	Name of the customer
Request_date	Date time	10	Not null	Date of the request
address	varchar	100	Not null	Address of the customer
House number	varchar	50	Not null	House number of the customer
location	varchar	100	Not null	Location of the customer
Phone number	varchar	15	Not null	Phone number of the customer
Waste type	varchar	100	Not null	Type of the waste

description	text	100	null	About the waste
status	varchar	50	Not null	Picked or not picked
User id	integer	10	Foreign key	Id of the user

4. SYSTEM DEVELOPMENT

4.1 INTRODUCTION

Modular programming is a software design technique that emphasizes separating the functionality of a program into independent, interchangeable modules, such that each contains everything necessary to execute only one aspect of the desired functionality. Conceptually, modules represent a separation of concerns, and improve maintainability by enforcing logical boundaries between components.

4.2 PROCESS DESCRIPTION

ADMIN: This module manages the overall activities of the system. It manages the works of the staff, manages of the sport, venue, payments and verify the participant.

- Login
    - Manage staff.
    - Delete staff.
    - Update staff.
- Products
    - Add products
    - View products
    - Delete products
- Payment
    - View payment
    - Payment status
- Manage products

- Add products
- Delete products
- Update products

ORGANIZER: The organizer module can view the details of the location, customers, products and verify the details of the customers. Organizer is highly responsible , specialised administrative work administering one or more solid waste programs.

- Login
- View products
  - View orders
- Verify request
  - View customers
- View request
- Upload products
- View location
- Update profile.

USER: user module is responsible for managing user accounts, including functions like creating new users, managing their login credentials, assigning roles and permissions, and handling user profile information, essentially allowing users to register, log in, and interact with the system.

- Register
- Login
- View products
- Add to cart
  - Order products
  - Send feedback.
- View reviews
  - Payment
  - Track order
- Cancel

5. SYSTEM TESTING AND IMPLEMENTATION

5.1 INTRODUCTION

Software testing is a critical element of software quality assurance and represent the ultimate review of the specification, design, and coding. System testing makes a logical assumption that all parts of the system is correct; the goal will be successfully achieved. Implementation allows the users to take over its operation for use and evaluation. Maintenance changes the existing system, enhancement adds features to the existing system, and development replaces the existing system**.**

5.2 SYSTEM IMPLEMENTATION

Implementation phase is the phase, which involves the process of converting a new system design into an operational one. It is the key stage in achieving a successful new system. Implementation is the stage if the project, where the theoretical design is turned into a working system. At this stage the main workload, the greatest up heal and the major impact on existing practices shift to user department. If the implementation stage is not planned and controllers carefully, it can cause chaos.

The implementation stage is a system project in its own right. It involves careful planning, investigation of the current system and its constraints on the implementation, design methods to achieve the changeover procedures ,and evaluation of change over methods.

The implementation plan consists of the following steps:

- Testing the developed system with the sample data.
- Detection and correction of errors.
- Making necessary changes in the system.
- Training and involvement of user personnel.
- Installation of software utilities.

5.3 DEBUGGING

5.3.1 BLACK BOX TESTING: Black-box testing is a type of software testing in which the tester is not connected with the internal knowledge or implementation details of the software, but rather validating the functionality based on the provided specifications or requirements.

5.3.2 WHITE BOX TESTING: White box testing techniques analyze the internal structures the used data structures, internal design, code structure, and the working of the software rather than just the functionality as in black-box testing. It is also called glass box testing or clear box testing or structural testing. It is used to test the software's internal logic, flow, and structure.The tester creates test cases to examine the code paths and logic flows to ensure they meet the specified requirements.

5.3.3 SYSTEM SECURITY: As technology advances, application environment become more complex and application development security becomes more challenging. Applications, systems, and networks are constantly under various security attacks such as malicious code or denial of service. Some of the challenges from the application development security point of view include Viruses, Trojan horses, Logic bombs, Worms, and Agent. As an addition this application is stored encrypted in the database so the user gets more reliable to its robustness. Security testing is essential for software that processes confidential data to prevent system intrusion by hackers.

5.3.4 SCOPE FOR FUTURE ENHANCEMENT :

The project focuses on developing an efficient, user-friendly system to streamline service management processes in waste management. Its scope encompasses the following aspects:

1. Service Request Management
    - Enabling users to create, track, and manage service requests related to recyclable waste collection.
    - Providing an intuitive interface for easy navigation and efficient operations.
2. Recyclable Waste Collection
    - Facilitating the collection of specific recyclable waste items, such as newspapers, glass, plastic, steel/tin cans, clothes, and leather.
3. Automation of Tasks
    - Automating repetitive tasks to improve efficiency and reduce human effort in waste management processes.
4. Marketing Space for Recycled Products

- Establishing a platform for promoting and selling recycled products, contributing to sustainable waste management practices.

5. Promotion of Sustainability
    - Encouraging eco-friendly practices by simplifying waste recycling and fostering a circular economy in areas.

6. CONCLUSION

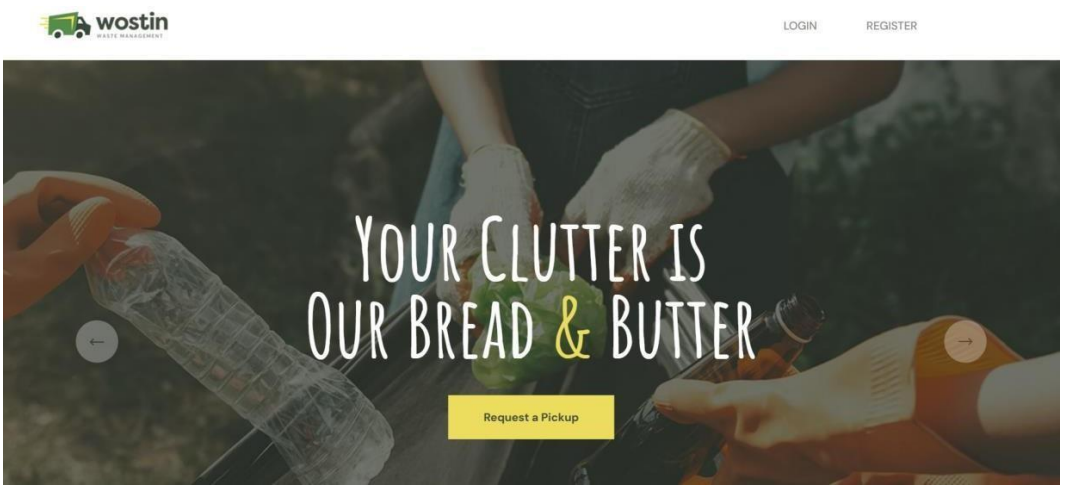
CONCLUSION

The project addresses the critical need for efficient and sustainable waste management in areas by providing a comprehensive system for managing service requests related to recyclable waste. By focusing on user-friendliness, automation, and the promotion of recycled products, it not only simplifies operations but also fosters environmental sustainability. This initiative contributes to the development of a circular economy, encouraging responsible waste disposal and recycling practices for a greener future.

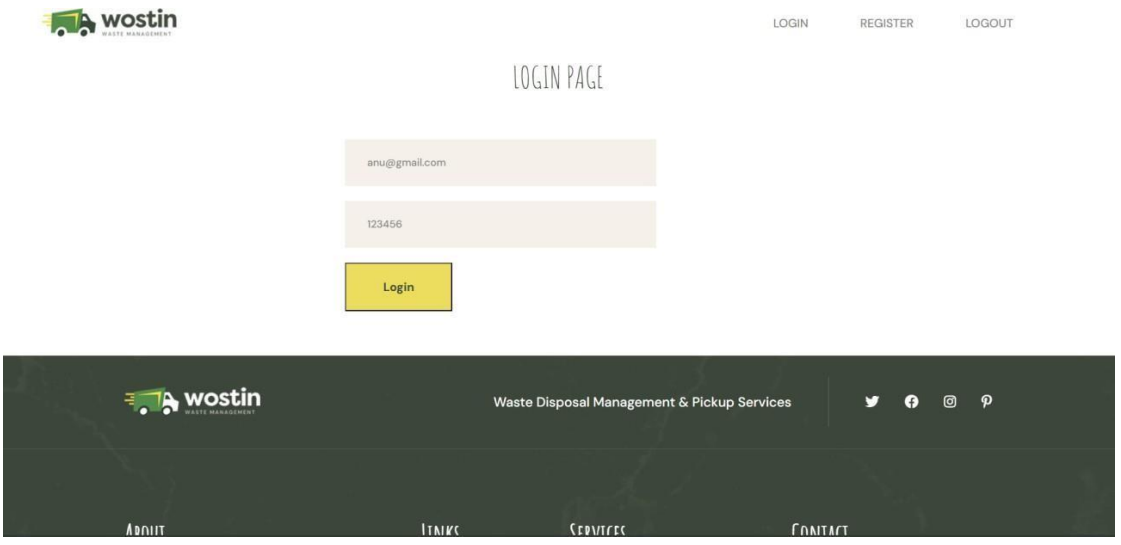
7. APPENDIX

7.1 INPUT AND OUTPUT SCREEN:

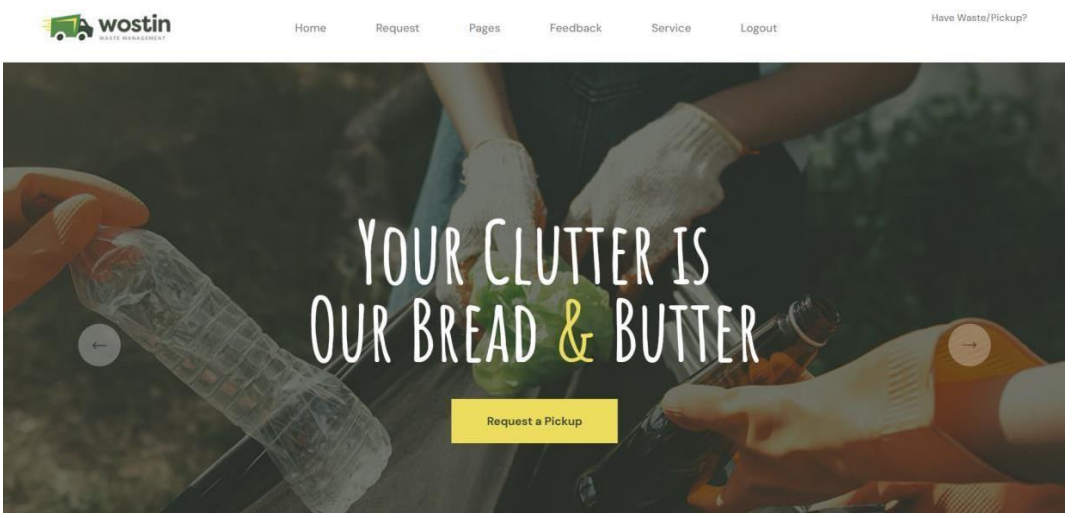
HOME PAGE:



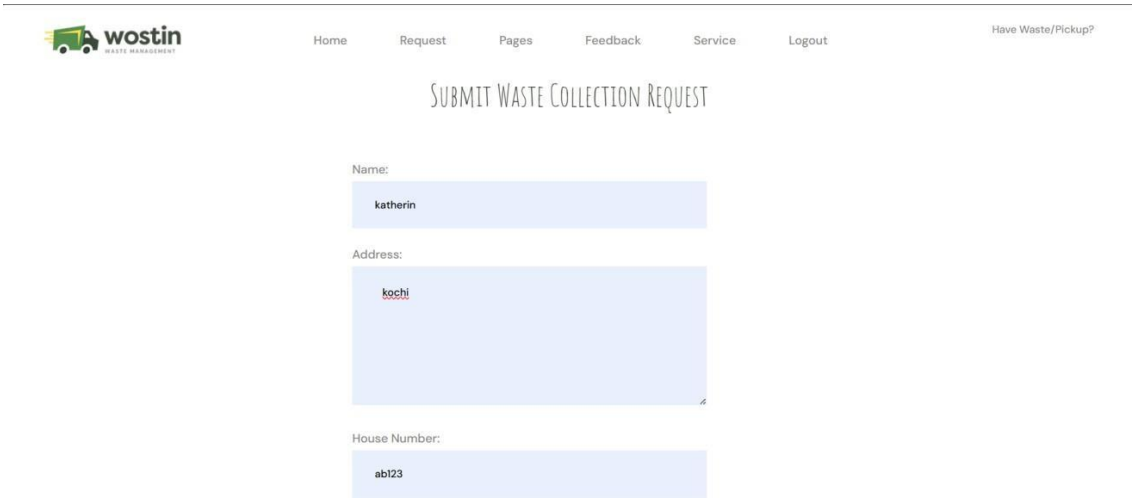
ADMIN LOGIN PAGE:

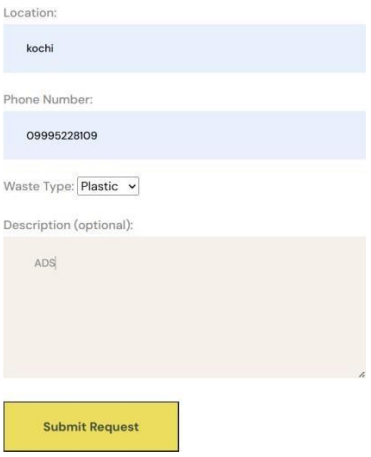


ADMIN HOME PAGE:



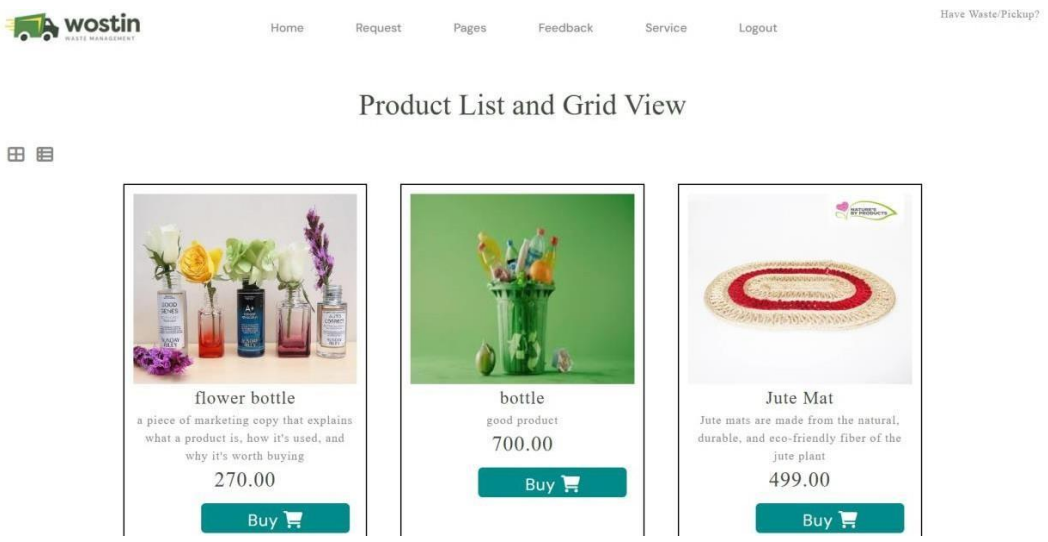
REQUEST PAGE:



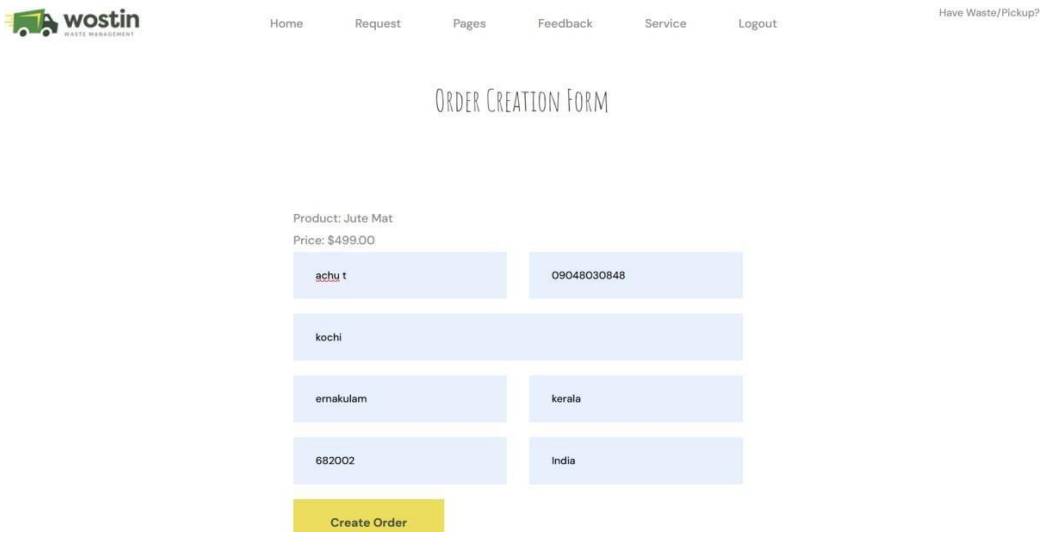


WASTE COLLECTION REQUEST:

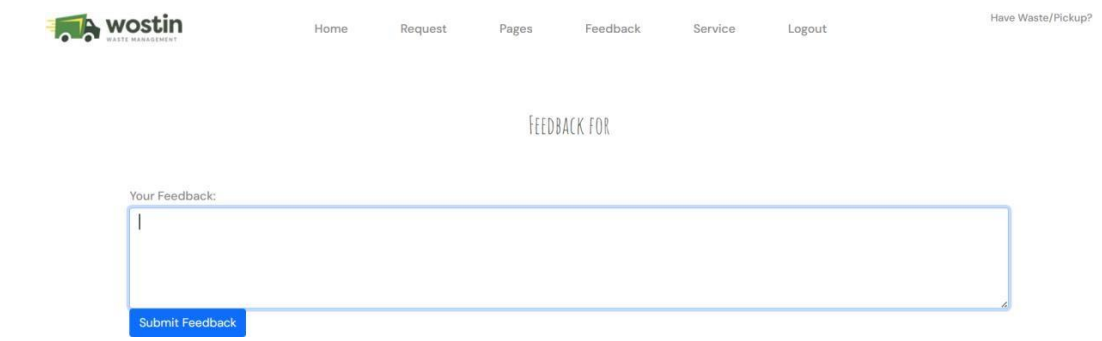
PRODUCT PAGE:



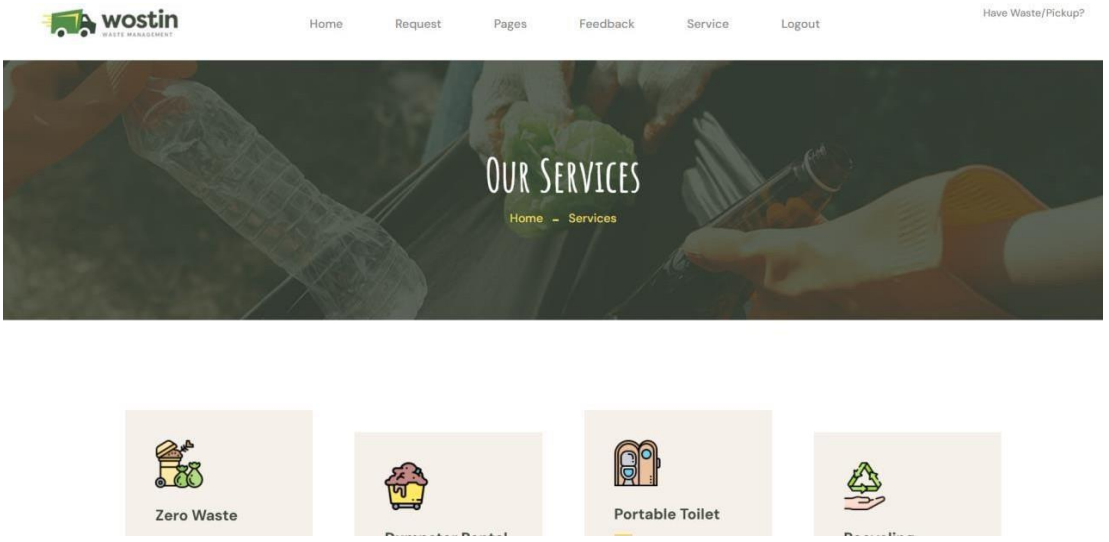
ORDER CREATION PAGE:



FEEDBACK PAGE:



SERVICE PAGE:



7.2 SAMPLE CODE:

LOGIN**:**

```
{% extends "common.html" %}

{%blockcontent%}

  <h1style="text-align:center;">LOGINPAGE</h1>
  <br>
  <br>
  <!-- Login Start -->
  <section class="login-page">
    <divclass="container"style="margin-left:30%;">
      <divclass="row">
        <divclass="col-xl-6col-lg-6">
          <divclass="login-page_right">
            <!-- Login Form -->
            <formmethod="post">
              {% csrf_token %}
             <divclass="row">
               <divclass="col-xl-9col-lg-6col-md-6">
                 <divclass="contact-one__form-input-box">
                   <inputtype="email"placeholder="Email Address"name="email"required>
                 </div>
               </div>
               <br>
               <divclass="col-xl-9col-lg-6col-md-6">
                 <divclass="contact-one__form-input-box">
                   <inputtype="text"placeholder="EnterPassword"name="password" required>
                 </div>
               </div>
             </div>
             <divclass="row">
               <div class="col-xl-12">
```

```
                    <divclass="login-form_btn-box">
                      <buttontype="submit"class="thm-btnlogin-form__btn">Login</button>
                    </div>
                  </div>
                </div>
              </form>

            </div>
          </div>
        </div>
      </div>
  </section>
    <!--LoginEnd-->
<br>
<br>
{%endblock%
```

USERREGISTRATION:

```
{% extends"common.html" %}
{%blockcontent%}
<br>
<h1style="text-align:center;">UserRegisterForm</h1>
    <section class="contact-one contact-page">
     <divclass="container"style="margin-left:30%;">
          <divclass="col-xl-6col-lg-6">
           <divclass="contact-one_right">
             <!--RegistrationForm-->
             <formmethod="POST">
               {% csrf_token %}
              <divclass="row">
                 <divclass="col-xl-6col-lg-6col-md-6">
                   <divclass="contact-one__form-input-box">
                     <inputtype="text"placeholder="First Name"name="firstname" required>
                   </div>
```

```
                    </div>
                    <divclass="col-xl-6col-lg-6col-md-6">
                      <divclass="contact-one__form-input-box">
                        <inputtype="text"placeholder="Last Name"name="lastname" required>
                      </div>
                    </div>
                    <divclass="col-xl-6col-lg-6col-md-6">
                      <divclass="contact-one__form-input-box">
                        <inputtype="email"placeholder="Email Address"name="email" required>
                      </div>
                    </div>
                    <divclass="col-xl-6col-lg-6col-md-6">
                      <divclass="contact-one__form-input-box">
                        <inputtype="text"placeholder="Address"name="address"required>
                      </div>
                    </div>
                    <divclass="col-xl-6col-lg-6col-md-6">
                      <divclass="contact-one__form-input-box">
                        <inputtype="text"placeholder="Password"name="password"required>
                      </div>
                    </div>
                  </div>
                  <divclass="row">
                    <div class="col-xl-12">
                      <divclass="contact-one_btn-box">
                        <buttontype="submit"class="thm-btncontact-one__btn">Register</button>
                      </div>
                    </div>
                  </div>
                </form>

              </div>
            </div>
          <!--</div>-->
        </div>
```

```
  </section>
  <!--ContactOneEnd-->
{%endblock%}
```

ADDPRODUCT:

```
defaddproduct(request):
  uid=request.session["uid"]
  print(uid)
  org=Organizer.objects.get(user_id=uid)
  if request.method == 'POST':
    product_name=request.POST['product_name']
    description=request.POST.get('product_description','')
    price=request.POST['price']
    image=request.FILES.get('image')

    org=Organizer.objects.filter(user_id=uid).first()
    print(org,',###############')
    b=RecycledProduct.objects.create(
      org=org,
      product_name=product_name,
      description=description,
      price=price,
      image=image
    )
    returnredirect('/productlist/')
  returnrender(request,"organization/addproduct.html")
```

BUYPRODUCT**:**

```
defbuy(request):
  uid=request.session['uid']
  user=UserReg.objects.filter(user_id=uid).first()
  print(user,"%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%")
  product_id =request.GET.get("id")
```

```
print(product_id,"**************************************")
product=get_object_or_404(RecycledProduct,  id=product_id)
if request.POST:
    name=request.POST.get('name')
    phone=request.POST.get('phone')
    address=request.POST.get('address')
    city=request.POST.get('city')
    state=request.POST.get('state')
    postal_code=request.POST.get('postal_code')
    country=request.POST.get('country')
    order=Order.objects.create(
        product=product,
        user=user,
        name=name,
        phone=phone,
        address=address,
        city=city,
        state=state,
        postal_code=postal_code,
        country=country,
        # price=product.price
    )
    order.save()
    returnredirect('/payment/?order_id={}'.format(order.id))
returnrender(request,'user/createorder.html',{'product':product})
```

8. BIBILOGRAPHY

8.1 REFERENCES

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