Project title: ZHERO

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# Project Documentation: ZHERO (Zero Hunger & Efficient Resource Optimization)

## 1. Introduction

### 1.1 Project Overview

ZHERO is an innovative food waste management system designed to address hunger and optimize resource use. It combines technology with community-driven action to redistribute surplus food efficiently. The platform connects food donors (restaurants, grocery stores, households) with food banks, shelters, and individuals in need, ensuring edible food doesn't go to waste. Inspired by the principles of sustainability and social equity, ZHERO is unique in its dual focus on environmental and humanitarian benefits.

### 1.2 Objectives

1. **Reduce Food Waste**: Create a system to track, manage, and redistribute surplus food effectively.
2. **Promote Sustainability**: Encourage responsible consumption and production patterns.
3. **Alleviate Hunger**: Connect food donors with those in need to ensure access to nutritious meals.

### 1.3 Target Audience

* Community organizations such as food banks and shelters.
* Restaurants, grocery stores, and households with surplus food.
* Individuals and groups advocating for sustainability and social welfare.

## 2. System Design

### 2.1 Concept and Storyline

ZHERO is designed as a platform that reduces food waste while tackling global hunger. It aligns with the concept of a circular economy, where food resources are maximized to benefit communities. The platform’s narrative centers on transforming food waste into a resource that can save lives and protect the planet.

### 2.2 Core Features

#### Core Functionality

* **Donation System**: Allows donors to submit surplus food details via a simple form.
* **Request System**: Enables recipients to request surplus food based on availability and need.

**Admin Page**:

* **Dashboard**: Provides an overview of platform activity, including total donations, requests, and active users.
* **Donations**: Displays details of all donations for monitoring and management.
* **Recipients**: Manages the list of registered food recipients, including food banks and shelters.
* **Food Requests**: Tracks all incoming requests for food and their fulfillment status.

#### Challenges/Obstacles

* **Food Spoilage**: Addressed by tracking preparation dates and ensuring timely pickups.
* **Distribution Logistics**: Optimized through partnerships with local organizations.

### 2.3 User Journey

#### Structure and Workflow

* Donors list surplus food with details (e.g., category, quantity, preparation date).
* Recipients browse or request food donations.
* ZHERO coordinates the collection and delivery.

#### Difficulty Progression

* Initial focus on local communities with potential scaling to regional or national levels as partnerships and logistics improve.

## 3. Technical Development

### 3.1 Development Tools

* **Frontend**: HTML, CSS, JavaScript for a responsive and user-friendly interface.
* **Backend**: Local storage (future integration with a database).

### 3.2 Art and Audio Assets

* **Visuals**: Simple, modern designs reflecting the themes of sustainability and community.
* **Icons**: Boxicons for intuitive navigation.

## 4. User Interface Design

#### Main Menu

* **Navigation**: Links to "Home," "Donate," "Request," "About Us," and "Contact."
* **Call-to-Action Buttons**: Prominent options to "Donate Food" or "Request Food."

#### Admin Page

* **Dashboard**: Summarizes total donations, requests, and platform statistics.
* **Donations Management**: Enables viewing, editing, and tracking donation records.
* **Recipients List**: Provides details of recipient organizations and individuals.
* **Food Request Tracker**: Monitors food requests and their status, including fulfilled and pending requests.

#### In-Platform UI

* **Donation Form**: Easy-to-use input fields with validation for accurate data.
* **Recipient Dashboard**: List of available food with filters for categories and location.

#### Feedback Mechanisms

* Real-time notifications on successful submissions.
* Visual and auditory confirmations for actions like food donation and request approvals.

## 5. Challenges and Solutions

#### Development Challenges

* **Data Management**: Transitioning from local storage to a centralized database.
* **User Engagement**: Encouraging consistent participation from donors and recipients.

#### Additional Feature in the Future

* Proposed incentives for participation, such as impact metrics and recognition programs.

## 6. Conclusion

ZHERO successfully combines technology and community action to reduce food waste and combat hunger. Its strengths include a user-friendly design, clear alignment with sustainability goals, and the potential for large-scale impact. Areas for improvement include enhancing logistics and expanding technical capabilities.

## 7. Appendices

### 7.1 Screenshots









