Project Zinova - AI-Powered Global Food Exchange

# Introduction

Project Zinova is a cutting-edge AI-powered platform designed to address the global challenge of food waste while empowering communities in need. By connecting farmers, restaurants, and NGOs through smart matching algorithms, Zinova ensures that surplus food is efficiently redistributed, reducing waste and supporting sustainability.

# Objectives

- Minimize food waste by connecting donors with NGOs in real time.  
- Ensure transparency and trust using blockchain-based ledger simulation.  
- Empower NGOs with better access to food resources through AI-driven matching.  
- Provide actionable insights and measurable impact via Power BI dashboards.

# Core Features

## 1. Farmer/Restaurant Dashboard

Donors such as farmers or restaurants can easily upload surplus food details (type, quantity, expiry date, location). Optional photo uploads build trust and improve transparency.

## 2. NGO Dashboard

NGOs can browse available food donations through interactive cards, filter by distance, food type, or urgency, and claim donations with one click. Claim confirmation includes a logistics map for delivery assistance.

## 3. AI Matching Engine

A rule-based AI engine scores and matches food donations with NGOs based on distance and expiry date. The system ensures high-priority matches are made efficiently.

## 4. Logistics Map

An Azure Maps integration displays optimal delivery routes and estimated delivery times, ensuring timely food distribution.

## 5. Blockchain Ledger Simulation

Every donation transaction is recorded on a simulated blockchain ledger for transparency. Each block stores donor, NGO, food type, quantity, and date, ensuring integrity and accountability.

## 6. Impact Dashboard

Power BI dashboards present real-time impact metrics such as food saved, people fed, and CO₂ emissions reduced. Visuals include pie charts, bar charts, and maps.

# Technical Stack

- Frontend: React with TailwindCSS  
- Backend: Python with FastAPI  
- Database: PostgreSQL  
- AI/ML: Python (rule-based engine with future ML models)  
- Maps: Azure Maps API  
- Dashboard: Power BI

# Branding & Tagline

Project Zinova represents innovation and sustainability. The name is inspired by ‘Norzin,’ crafted into a sleek, futuristic identity.   
  
Tagline Options:  
- Zinova: Nourishing the Future  
- Smarter Sharing. Stronger Communities.  
- Zinova: Where Surplus Meets Need  
- Sustainability. Powered by AI