

# Harvest Hub: Local Food and Farmer's Market Platform

## MINI PROJECT

### ABSTRACT

Harvest Hub is a revolutionary online platform connecting local farmers directly with consumers, offering fresh produce and goods in a convenient and accessible manner. It leverages modern technologies to streamline the process, ensuring a seamless experience for both farmers and consumers. With a focus on community engagement and sustainability, Harvest Hub aims to reshape the way people access and consume locally sourced products.

### PROJECT OVERVIEW

Harvest Hub is a web-based platform designed to bridge the gap between farmers and consumers, providing a digital marketplace for buying and selling fresh produce and goods. The platform caters to multiple user roles, including administrators, farmers, and consumers, each with specific functionalities tailored to their needs. Harvest Hub emphasizes transparency, quality, and convenience, fostering direct relationships between producers and consumers while promoting local agriculture and sustainable practices.

### MODULES

1. Admin
2. Farmer
3. Consumer

### MODULES AND FUNCTIONALITIES

#### ➤ Admin:

- Login: Secure access to administrative functions.
- User Management: Review and manage user registrations, ensuring compliance with platform policies. (Custom user model for authentication)
- Product Moderation: Verify and approve food listings to maintain quality standards.
- Reporting and Analytics: Monitor platform activity and analyze sales data to drive decision-making.
- Notification System: Communicate updates, promotions, and alerts to users effectively.
- View and Manage food and goods:
  - List view for food and goods
  - Add/Edit/Delete food and goods
- Manage Orders:
  - View order lists
  - Update order status
- Site Management:
  - View complaints and send replies
  - Flash messages and alerts

#### ➤ Farmer:

- **Profile Management:** Create and update farmer profiles with relevant information.
- **Product Listings:** Post and manage listings of fresh produce and goods, including descriptions and prices.
- **Order Management:** Track and fulfil orders from consumers, managing inventory and delivery schedules.
- **Customer Interaction:** Respond to inquiries and feedback from consumers, fostering engagement and trust.
- **Sales Analytics:** Access reports and insights on sales performance and product popularity.

#### ➤ Consumer:

- **Registration/Login:** Securely create an account or log in to access platform features.
- **Profile Management:** Update personal information and preferences for a tailored shopping experience.
- **Browse Products:** Search for fresh produce and goods by category, location, or farmer, with detailed product descriptions and photos.
- **Shopping Cart:** Add products to the cart and proceed to checkout, with multiple payment options available.
- **Order Tracking:** Monitor the status of orders and view order history for a seamless shopping experience.
- **Reviews and Ratings:** Provide feedback on purchased products, contributing to a vibrant and transparent marketplace.

## MAIN PROJECT

### ABSTRACT

Harvest Hub presents an innovative approach to local food and farmer's markets by integrating advanced technologies such as machine learning (ML) and augmented reality (AR) to enhance the user experience and drive engagement. By incorporating ML algorithms for personalized recommendations, dynamic pricing, and fraud detection, and AR features for virtual product visualization and interactive shopping experiences, Harvest Hub aims to revolutionize the way consumers interact with local producers and their products. These cutting-edge technologies not only improve efficiency and convenience but also promote sustainability and community empowerment.

### DETAILED FUNCTIONALITIES

#### • Crop Recommendation Systems:

- **Description:** ML-based recommendation system suggesting crops based on soil type, climate conditions, and market demand.
- **Functionalities:**
  - User-friendly interface for farmers to input field details and preferences.
  - ML algorithms analyzing input data to provide personalized crop recommendations.
  - Suggestions for optimal crop rotation and diversification strategies.

- **Crop Disease Detection:**

- **Description:** Computer vision-based detection of crop diseases and pests using images from drones or cameras.
- **Functionalities:**
  - Interface for farmers to upload images of crops for analysis.
  - ML algorithms processing images to identify signs of disease or pest infestation.
  - Early detection alerts and recommendations for treatment.

- **Market Price Prediction:**

- **Description:** ML model predicting future market prices for crops based on historical data and external factors.
- **Functionalities:**
  - Dashboard displaying predicted market prices for different crops in real-time.
  - ML algorithms analyzing historical market data and external factors.
  - Recommendations for optimal selling strategies based on predicted prices.

- **Chatbot:**

- **Description:** Instant assistance and information related to crop management, market prices, and weather forecasts provided through conversational AI capabilities.
- **Functionalities:**
  - Integration with Dialogflow or Rasa for chatbot development.
  - Natural language understanding for responding to farmer queries and providing relevant information.
  - Real-time chat support accessible from the platform interface.

- **NLP Translations:**

- **Description:** Multilingual support enabling farmers to interact with the platform in their preferred language through real-time translations.
- **Functionalities:**
  - Integration with Google Translate API or similar services for accurate translations.
  - Detection of user language preferences and automatic translation of platform content.
  - Seamless communication in multiple languages for improved accessibility.

- **Voice Search Techniques:**

- **Description:** Voice-enabled search functionality allowing farmers to find crops, get recommendations, and access platform features through voice commands.
- **Functionalities:**
  - Integration with speech recognition APIs like Web Speech API.
  - Voice command processing for searching crops, retrieving market prices, and performing other tasks.
  - Hands-free interaction with the platform using voice commands via browsers or mobile devices.

