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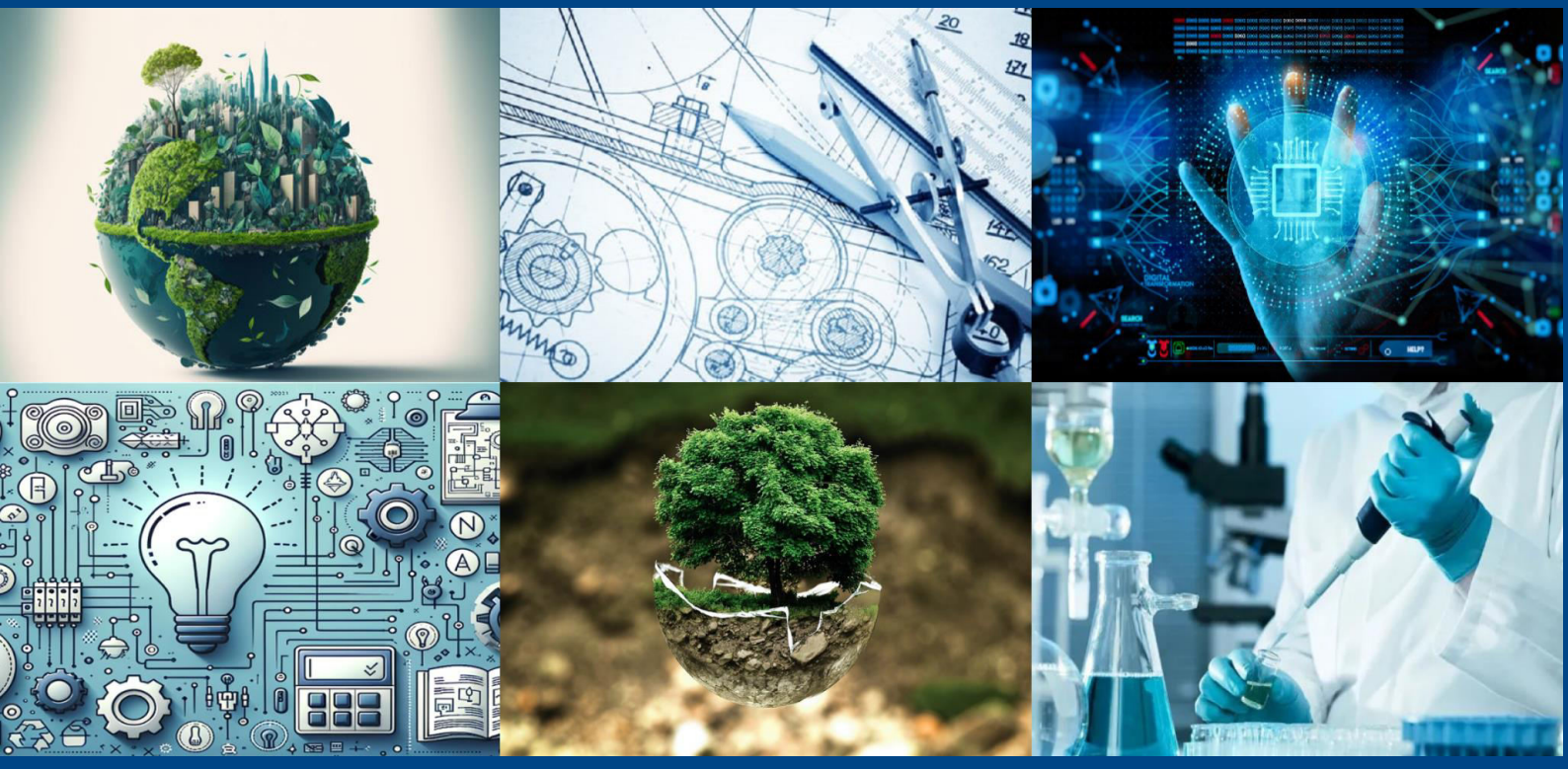

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Agro Basket Application

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ABSTRACT: The Agro Basket web application is a digital platform designed to assist farmers by providing essential agricultural information and facilitating the online purchase of fertilizers and other farming products. The application offers comprehensive resources on crop disease, helping farmers make informed decisions to optimize their farming practices. In addition to educational content, Agro Basket enables users to browse and purchase a wide range of fertilizers, ensuring easy access to quality agricultural inputs at competitive prices. By integrating both informational and transactional features, the application aims to streamline the farming process, enhance productivity, and support sustainable agriculture. This paper explores the functionality of the Agro Basket web application, examining its impact on farm efficiency, user engagement, and the potential to transform traditional agricultural practices through digital solutions.

KEYWORDS: Agro, Agro basket application, crop, order management, crop management, fertilizers, disease, payment option

I. INTRODUCTION

Agro Basket is an innovative web application designed to provide farmers with personalized fertilizer recommendations tailored to their crops. By leveraging advanced technologies like image recognition and artificial intelligence, the app enables users to scan their crops using a smartphone camera or other devices. Based on the scanned image, the system accurately identifies the crop type and assesses its specific nutritional needs.

Key Features of Agro Basket:

1. **Crop Scanning**: The core feature of Agro Basket is its ability to scan crops through images. Users can upload a photo or use their device to capture an image of the crop they are growing. The app then identifies the type of crop and analyzes its health and growth stage.
2. **Personalized Fertilizer Recommendations**: Once the crop is identified, the app suggests the most suitable fertilizers based on the crop's needs, soil condition, and growth stage. This ensures that farmers receive tailored advice for their specific farming environment, leading to better crop yield and health.
3. **Easy Fertilizer Purchase**: After receiving the recommended fertilizers, users can directly purchase them from the app. Agro Basket offers an easy-to-navigate marketplace where farmers can view detailed product information, check prices, and complete purchases securely.
4. **User-Friendly Interface**: The web application is designed to be simple and accessible, even for users with limited technical experience. The platform is intuitive, providing an easy journey from crop scanning to fertilizer purchase.
5. **Delivery and Tracking**: Agro Basket provides seamless integration with delivery services. Once the fertilizer is purchased, the app offers real-time tracking of the shipment, ensuring that the products reach the farmer on time.
6. **Expert Advice and Resources**: In addition to fertilizer recommendations, Agro Basket also offers expert advice, resources, and tips on best farming practices. This ensures that users can make well-informed decisions to maximize their productivity.
7. **Sustainability**: Agro Basket promotes sustainable farming practices by recommending organic and environmentally friendly fertilizers where possible. This helps farmers maintain soil health while also producing high-quality crops.

How Agro Basket Works:

1. **Scan Your Crop**: Take a photo of your crop using the app or upload an existing image.
2. **Receive Fertilizer Suggestions**: Based on the crop's type, the app will analyze and suggest the best fertilizers for optimal growth.
3. **Purchase Fertilizer**: Choose the recommended fertilizer from the list of options, view details, and place an order through the app.

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4. **Track Your Order**: Once purchased, Agro Basket will provide delivery tracking to ensure your fertilizer reaches you in a timely manner.

Agro Basket empowers farmers to make informed decisions, reduce costs, and improve crop yields, all while saving time. Whether you are a small-scale farmer or managing a large farm, Agro Basket offers a modern solution to fertilizer management and agricultural productivity.

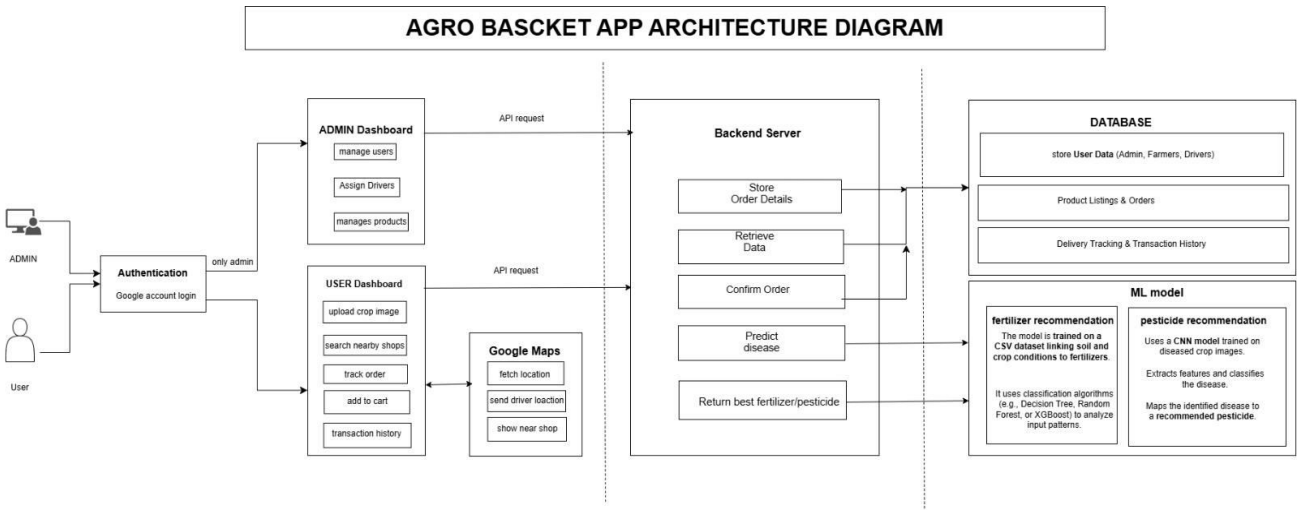
II. LITERATURE SURVEY

- **Plant Disease Detection Using Mobile Apps**
  Several mobile applications, such as Plantix, have been developed to help farmers diagnose plant diseases using photos taken by smartphones. These applications use advanced algorithms for image classification and deep learning to suggest appropriate remedies, often suggesting fertilizers or other treatments. This is highly relevant to Agro Basket, which could incorporate similar technology to recommend fertilizers based on crop health.
- **Data-driven Fertilizer Recommendations for Crop Health**
  Research by Kapoor et al. (2019) demonstrated that data-driven fertilizer management systems can be used to optimize nutrient application, reducing waste and improving crop yields. Integrating similar models into Agro Basket based on factors like soil composition, crop type, and detected deficiencies, would help users select the best fertilizer for their crops.
- **Mobile Agriculture Marketplaces**
  A literature review by Sarpong et al. (2019) highlighted the growth of mobile agriculture marketplaces where farmers can purchase products and receive expert recommendations. Agro Basket could leverage such platforms to ensure farmers receive timely, location-based recommendations and can easily purchase the necessary fertilizers.

III. METHODOLOGY

1] E-commerce Trends:
Analyze the evolving landscape of online shopping for agricultural products, identifying key trends and customer preferences.
2] Competitive Analysis:
Research existing e-commerce platforms serving the agricultural sector, understanding their strengths, weaknesses, and market share.
3] User Needs Assessment:
Conduct surveys with farmers and did research to understand their pain points and expectations for an ideal online platform.

IV. ARCHITECTURE DIAGRAM



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System Requirements:

1] Hardware Requirements:

1. RAM: nAt least 8GB (Recommended: 16GB for ML training)
2. GPU: For ML model training, a dedicated GPU (NVIDIA RTX 3060 or higher) is recommended.

2] Software Requirements:

1. Operating System: Windows 10/11, macOS, or Linux (Ubuntu 20.04+)
2. Programming Languages: Python, JavaScript
3. Frontend Framework: React.js, Bootstrap
4. Backend Framework: Flask (Python)

3] Functionality Requirements:

1. User Authentication: Google OAuth for secure login
2. Admin Dashboard: Manage users, products, and driver assignments
3. ML Model Integration:

CNN Model: Predicts crop diseases from uploaded images.
Fertilizer ML Model: Recommends fertilizers based on soil.

Algorithm:

Convolutional Neural Network (CNN) –For crop disease detection using image classification.
Multiple Linear Regression – For fertilizer recommendation based on soil and environmental data.
Decision Tree Regression – Alternative approach for fertilizer prediction using CSV data.
Gradient Boosting (XGBoost) – For improving fertilizer prediction accuracy.

V. FUTURE SCOPE

- Potential improvements and expansions.
- Integration with drone technology for aerial data collection.
- Development of a mobile app for on-the-go recommendations.
- Expansion to cover a wider range of crops and regions.
- Incorporate AI feedback for real-time adjustments.

VI. CONCLUSION

Agro Basket holds the potential to transform agricultural supply chains by connecting farmers with essential resources in a convenient and efficient manner.

The Agro Basket stands as a transformative tool designed to address the multifaceted challenges faced by modern farmers and agricultural professionals. By leveraging technology, the app aims to enhance efficiency, productivity, and sustainability in agriculture.

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