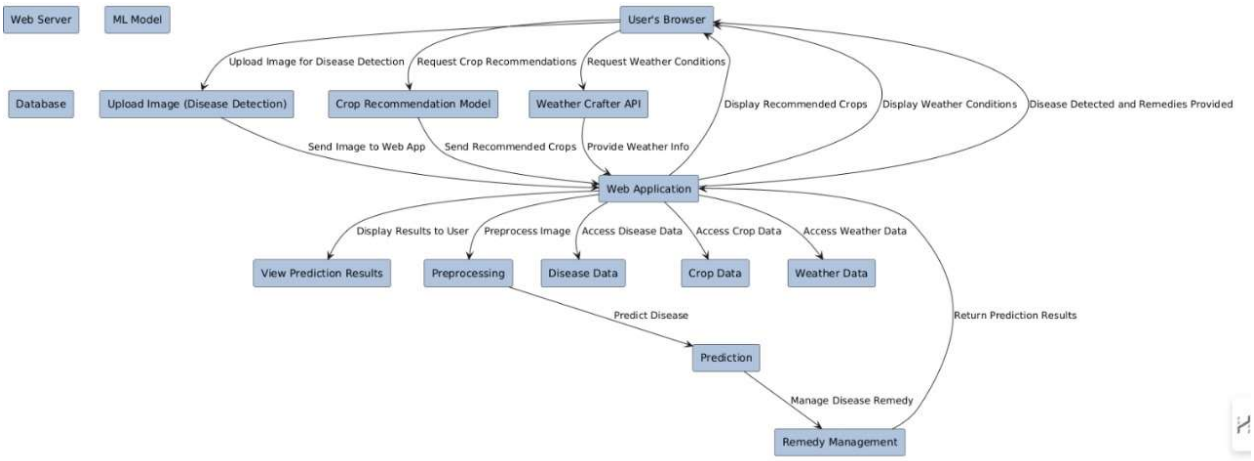
PSID: SIH1638	**Project Summary Report**	**Team ID: SIH158**
Title	AI-Driven Crop Disease Prediction and Management System	**Theme** Agriculture, FoodTech & Rural Development
Objective	The objective of our platform is to provide farmers with a comprehensive, technology-driven solution that addresses key agricultural challenges. By integrating AI-powered crop disease detection, personalized crop recommendations, resource calculators, and real-time 24/7 chat support, we aim to optimize farm productivity and sustainability. Our goal is to empower farmers with the tools needed to make data-driven decisions, improve yields, reduce resource waste, and increase profitability, while also enabling them to sell their products locally and internationally, ensuring long-term success in an evolving agricultural landscape.	
Synopsis (Background & Purpose)	**Background:** Farmers today are facing increasing difficulties due to crop diseases, inefficient resource management, and unpredictable weather patterns. These challenges directly affect crop yields and profitability, making it harder for farmers to meet the growing global demand for food. Traditional farming methods often lack the precision and timely information needed to tackle these issues effectively. **Purpose:** Our platform is designed to provide farmers with advanced, technology-driven tools to optimize their farming practices. By offering AI-powered crop disease detection, personalized crop recommendations, and real-time resource management	

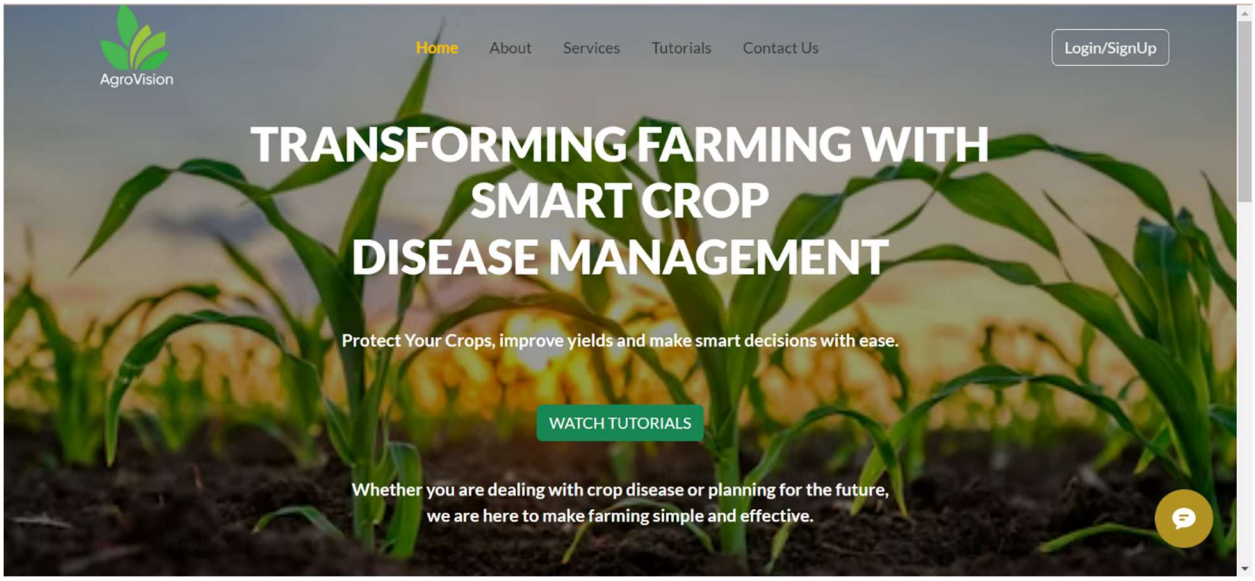
	support, we aim to enhance agricultural productivity, promote sustainability, and increase profitability for farmers worldwide.
Methodology (Flow Chart, Process Chart, etc.) Along with Real Time Product Picture	**Attached below**
Products (Workshops, materials, skills developed)**& Product Availability**	**Workshops** **AI in Agriculture:** Training on using the crop disease detection tool and capturing high-quality images. **Sustainable Farming:** Sessions on organic farming, soil health, and pest control. **Weather-Based Farming:** Guidance on using weather data for planting and irrigation planning. **Crop Planning:** Personalized sessions on crop selection based on soil, weather, and market demand. **Materials** **Digital Guides:** Step-by-step tutorials on disease management and crop care, available offline in multiple languages. **Pesticide & Fertilizer Manuals:** Dosage guides tailored to specific crops and diseases. **Planning Calendars:** Custom schedules for planting and harvesting based on weather predictions. **Skills Developed** **Digital Literacy:** Using AI tools for crop management. **Disease & Pest Management:** Identifying and treating crop diseases. **Data-Driven Decisions:** Utilizing soil and weather data for crop selection.

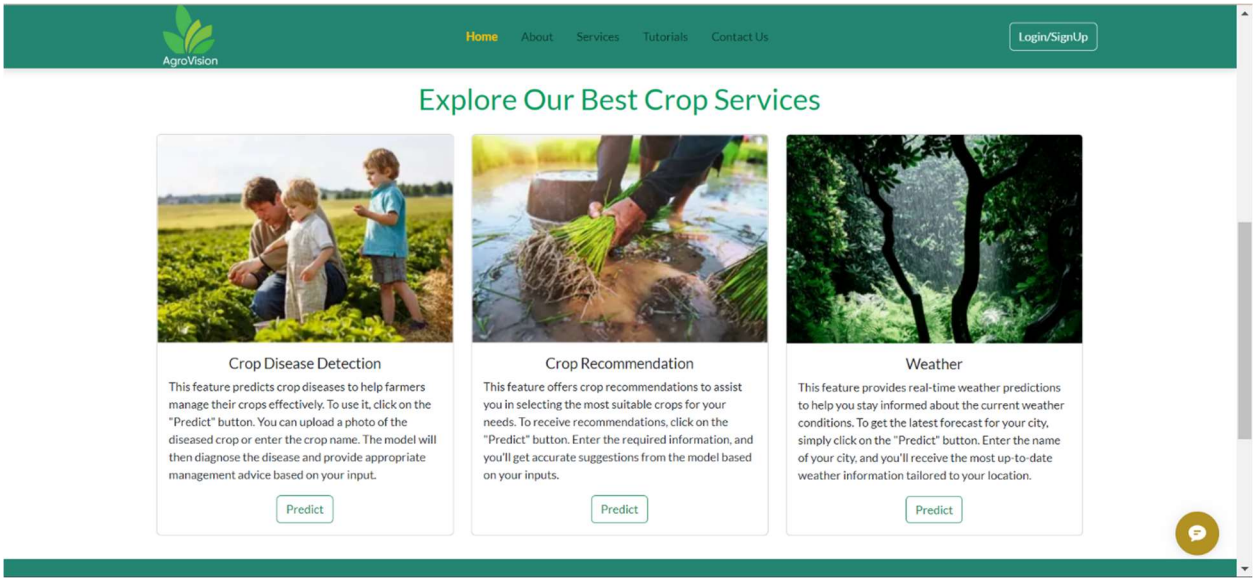
	Sustainable Practices: Learning organic and eco-friendly farming methods. **Product Availability** **Crop Disease Detection:** Mobile and web app, offline support, real-time updates on diseases and treatments. **Personalized Crop Recommendations:** Integrated into the app, updated with soil and weather data, downloadable crop plans. **Web Calculator:** Online tool for precise planning of fertilizer, pesticide, and water use. **Weather Prediction:** Long-term forecasts integrated into the app for crop cycle planning. **AI Chatbot:** Multilingual support for instant guidance on farming queries.
Outcomes & Future Plan	**Outcomes**: Our platform has significantly improved farming efficiency by offering AI-powered crop disease detection, personalized crop recommendations, and optimized resource management. This has led to higher yields, reduced costs, and a lower environmental footprint through sustainable practices like precise water and pesticide use. The 24/7 chat feature has increased user engagement, providing farmers with real-time support and actionable insights. **Future Plan**: We are positioning this platform as a startup, aiming to add more features over time. Future plans include enabling farmers to sell their products directly on the platform and access international markets. We will continue to improve core features like AI-driven disease detection, personalized crop recommendations, and weather prediction to offer farmers a complete, all-in-one solution.

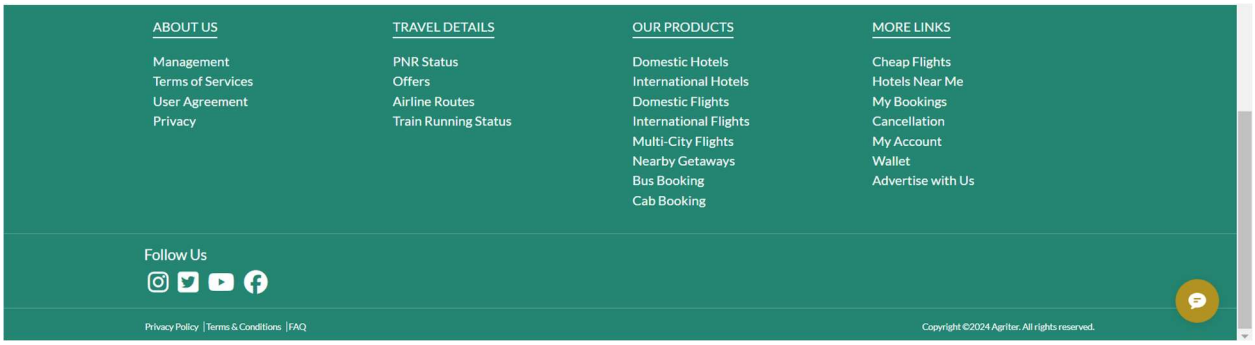
Flow Chart



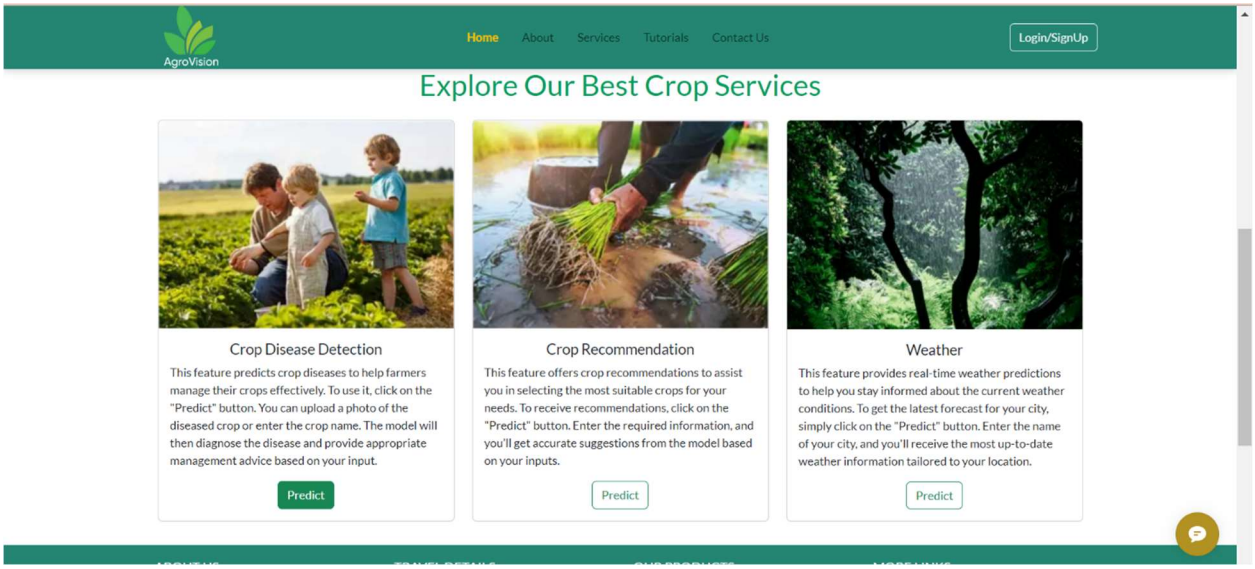
Website Home Page







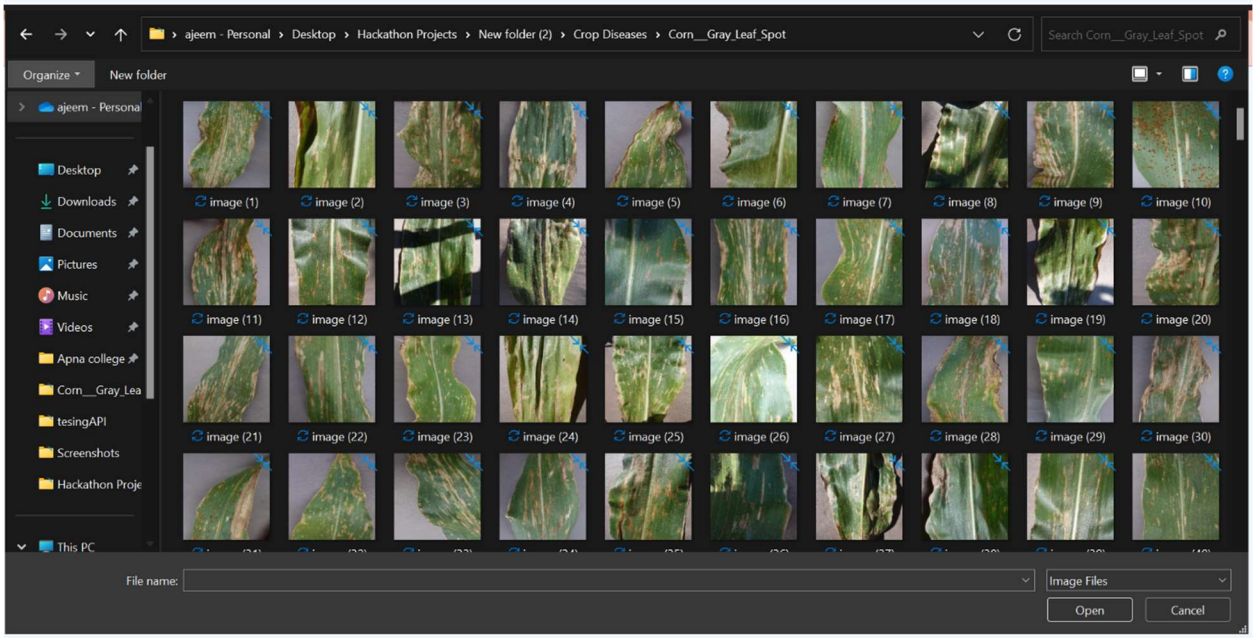
Crop Disease Prediction

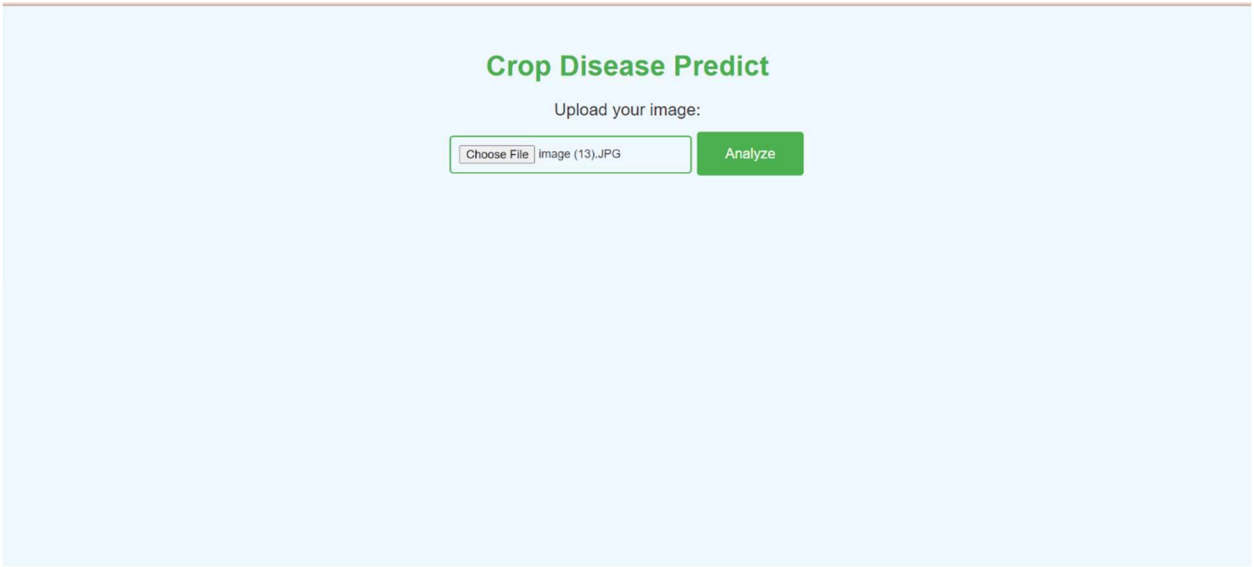


Crop Disease Predict

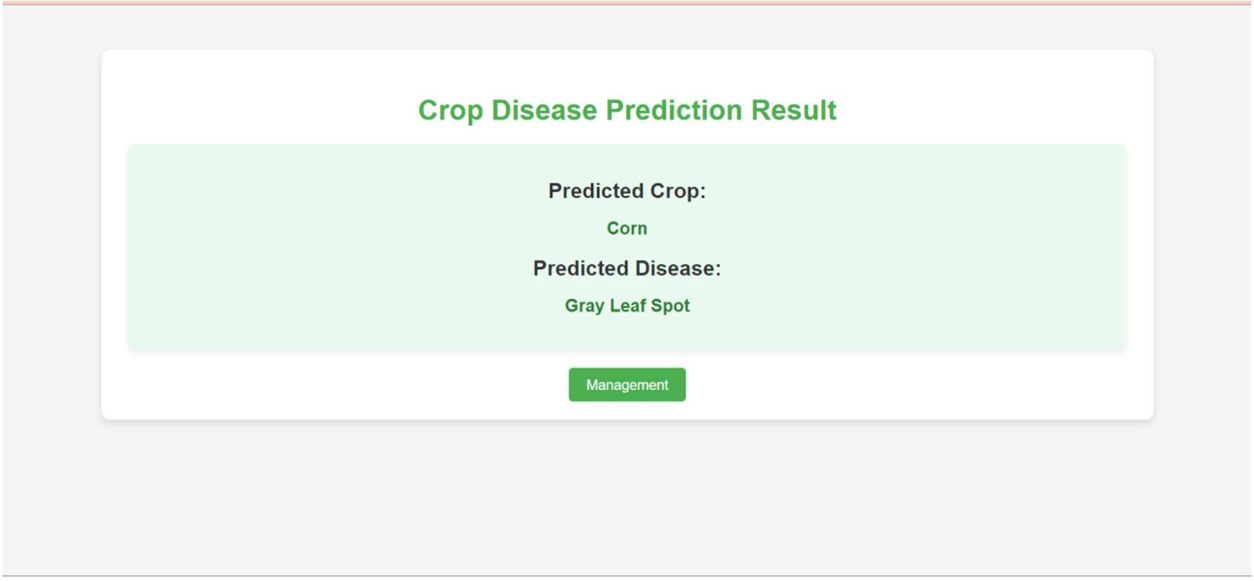
Upload your image:

Choose File | No file chosen | Analyze



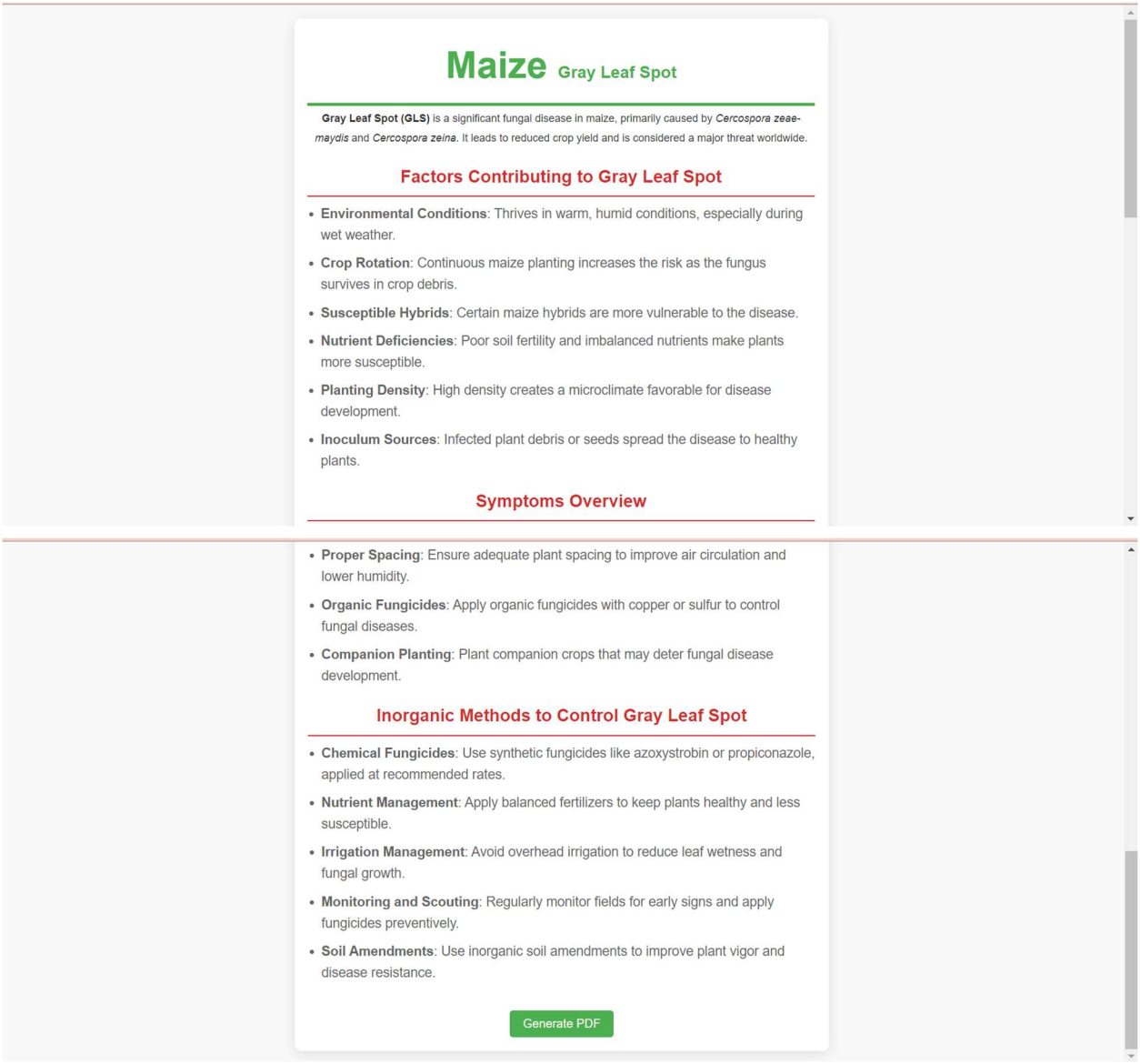


Predicting disease in the crop



Showing management for the disease

Feature : Downloading PDF



Maize Gray Leaf Spot

Gray Leaf Spot (GLS) is a significant fungal disease in maize, primarily caused by *Cercospora zeae-maydis* and *Cercospora zeina*. It leads to reduced crop yield and is considered a major threat worldwide.

Factors Contributing to Gray Leaf Spot

- **Environmental Conditions**: Thrives in warm, humid conditions, especially during wet weather.
- **Crop Rotation**: Continuous maize planting increases the risk as the fungus survives in crop debris.
- **Susceptible Hybrids**: Certain maize hybrids are more vulnerable to the disease.
- **Nutrient Deficiencies**: Poor soil fertility and imbalanced nutrients make plants more susceptible.
- **Planting Density**: High density creates a microclimate favorable for disease development.
- **Inoculum Sources**: Infected plant debris or seeds spread the disease to healthy plants.

Symptoms Overview

- **Proper Spacing**: Ensure adequate plant spacing to improve air circulation and lower humidity.
- **Organic Fungicides**: Apply organic fungicides with copper or sulfur to control fungal diseases.
- **Companion Planting**: Plant companion crops that may deter fungal disease development.

Inorganic Methods to Control Gray Leaf Spot

- **Chemical Fungicides**: Use synthetic fungicides like azoxystrobin or propiconazole, applied at recommended rates.
- **Nutrient Management**: Apply balanced fertilizers to keep plants healthy and less susceptible.
- **Irrigation Management**: Avoid overhead irrigation to reduce leaf wetness and fungal growth.
- **Monitoring and Scouting**: Regularly monitor fields for early signs and apply fungicides preventively.
- **Soil Amendments**: Use inorganic soil amendments to improve plant vigor and disease resistance.

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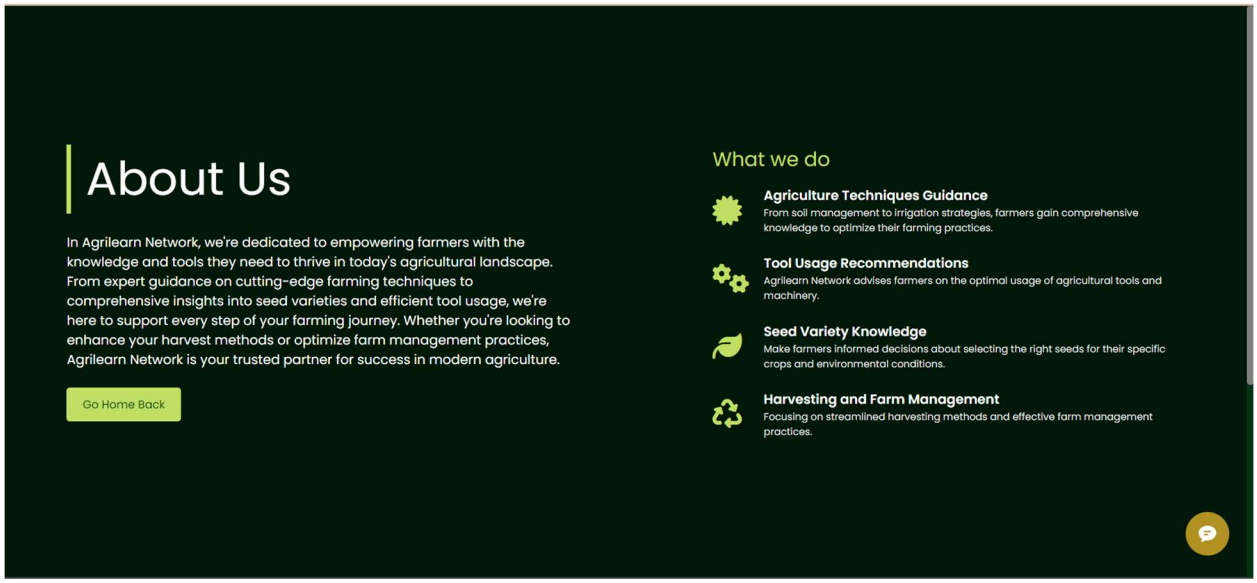
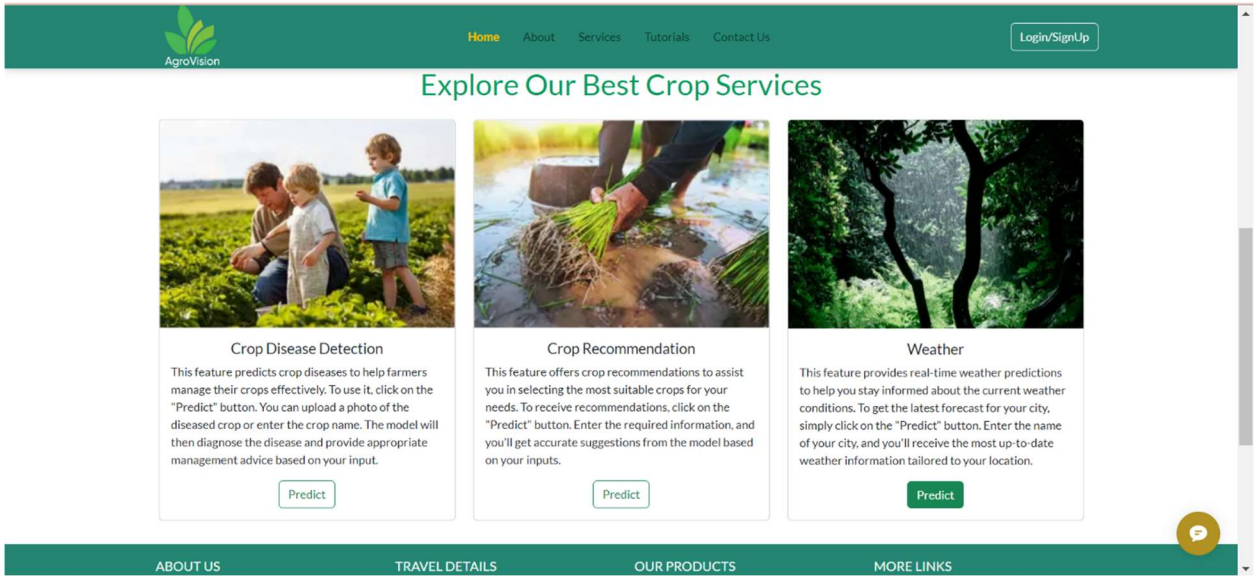
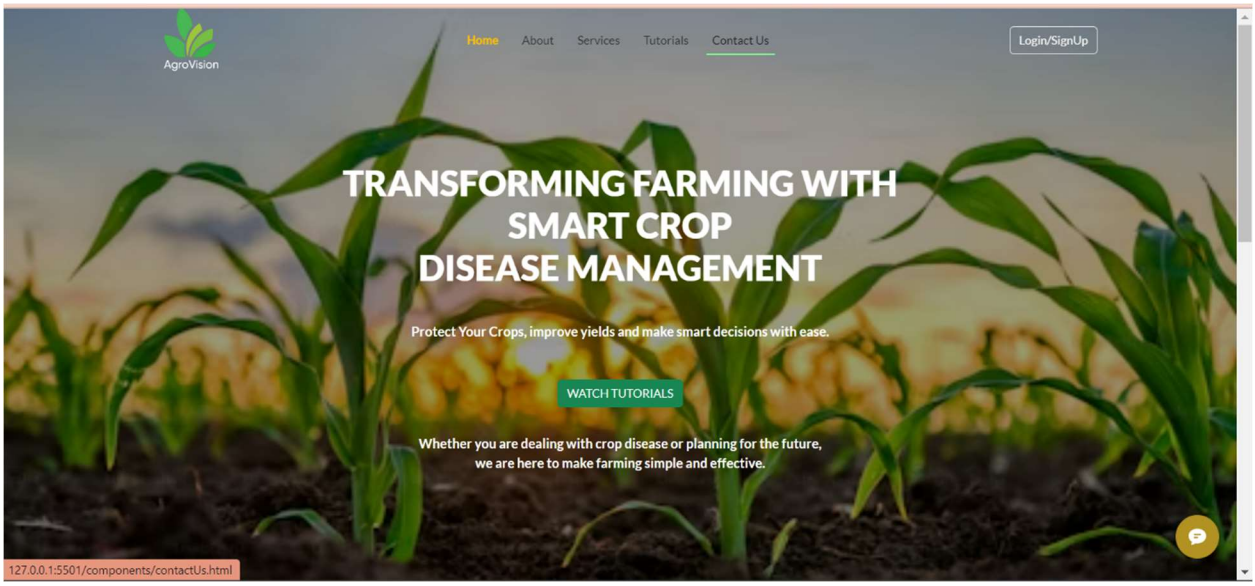
About Section



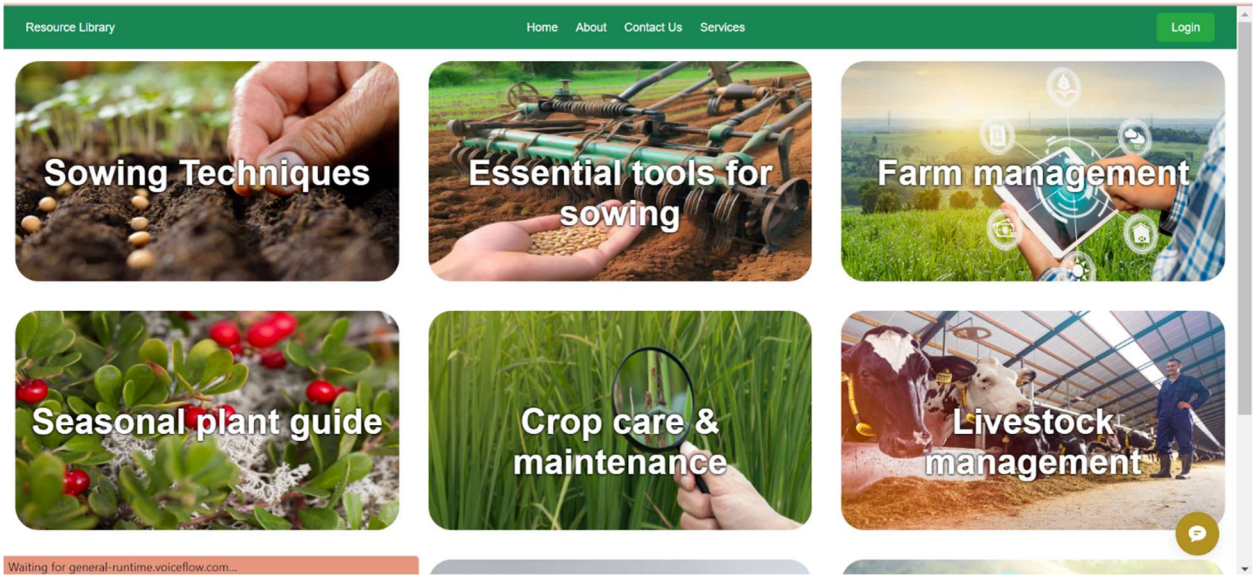
Our Services



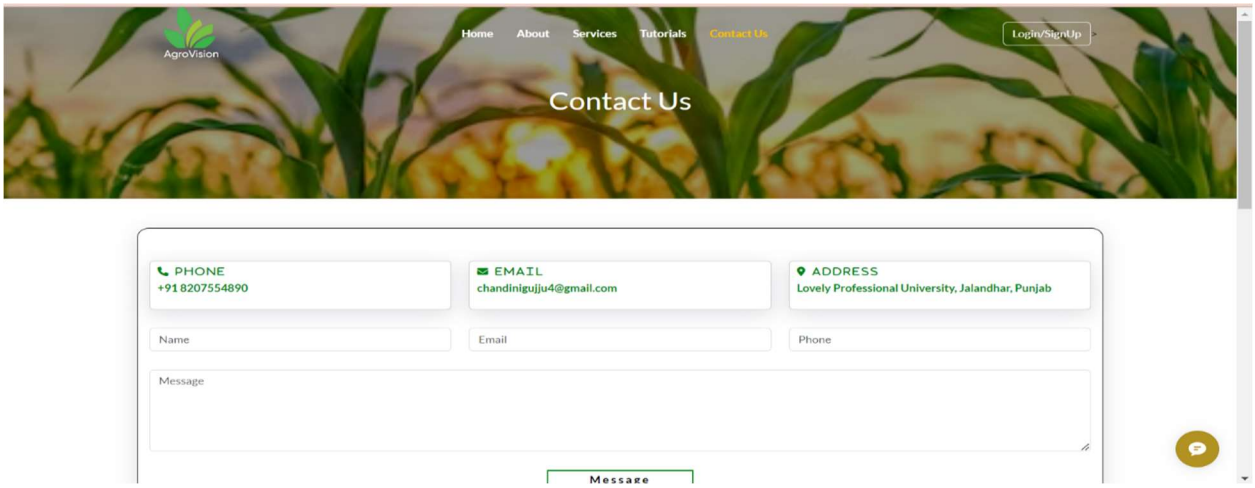
Weather Prediction System

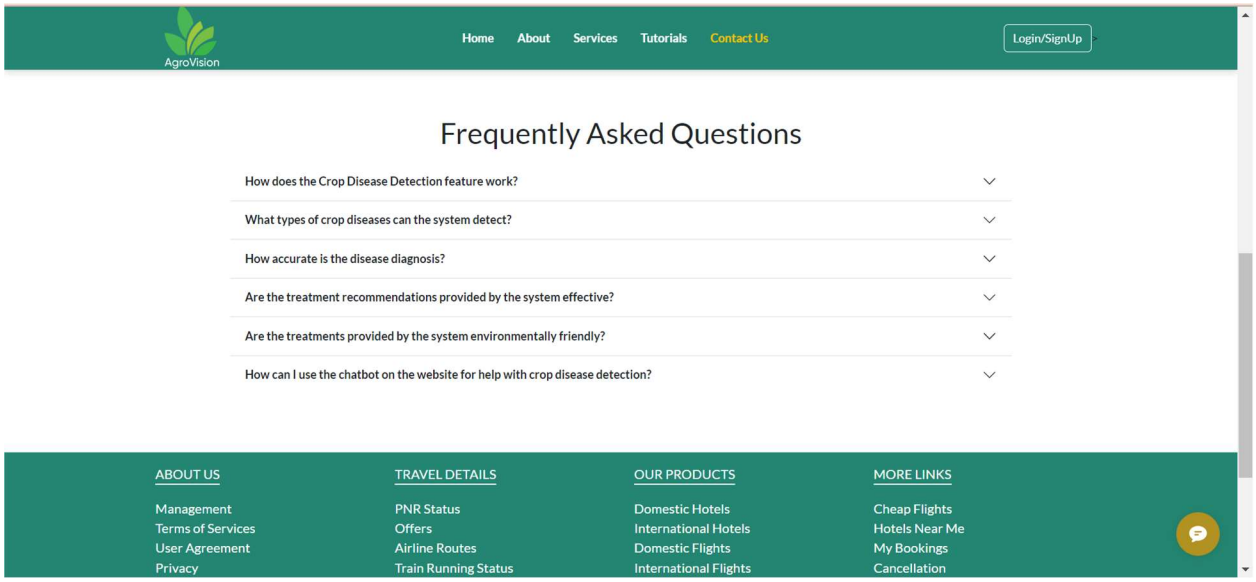


Tutorials Page

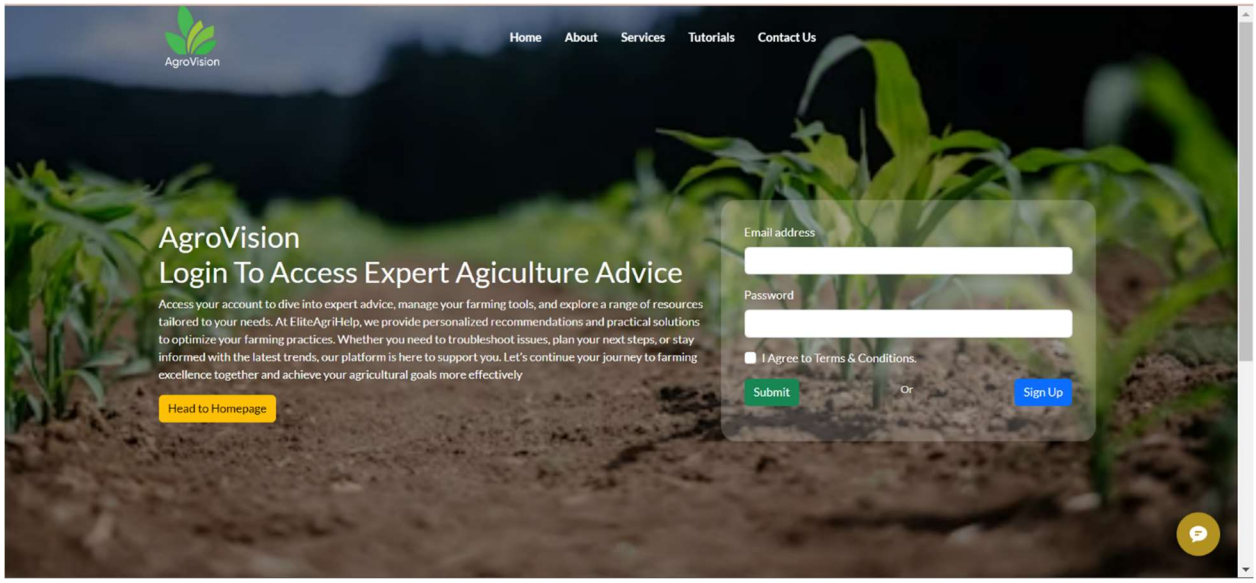


Contact Us Page

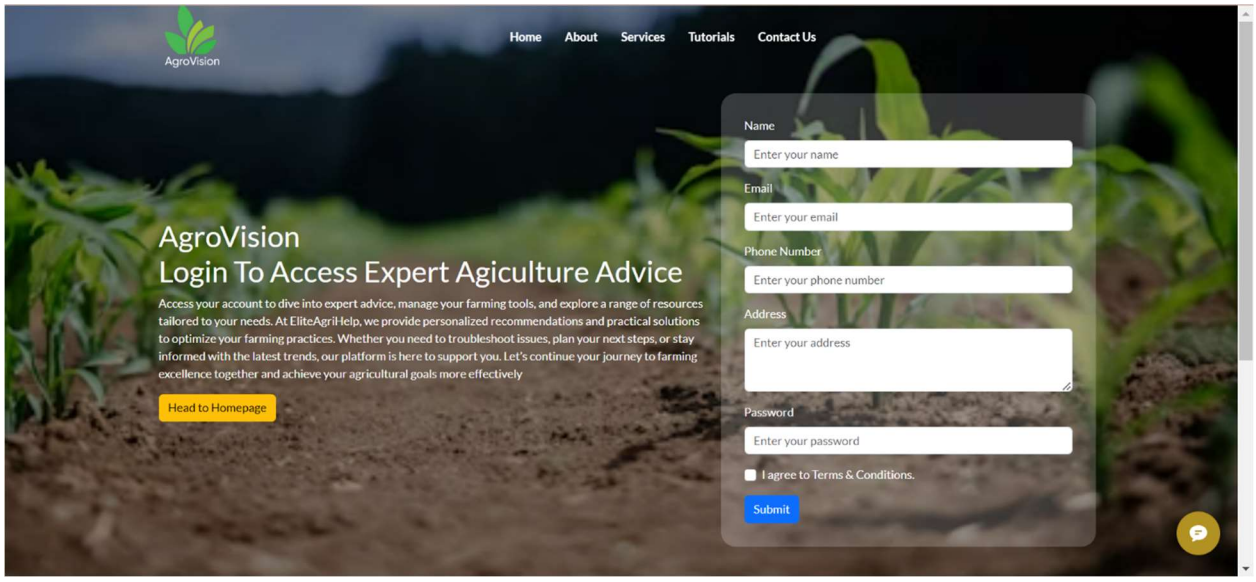


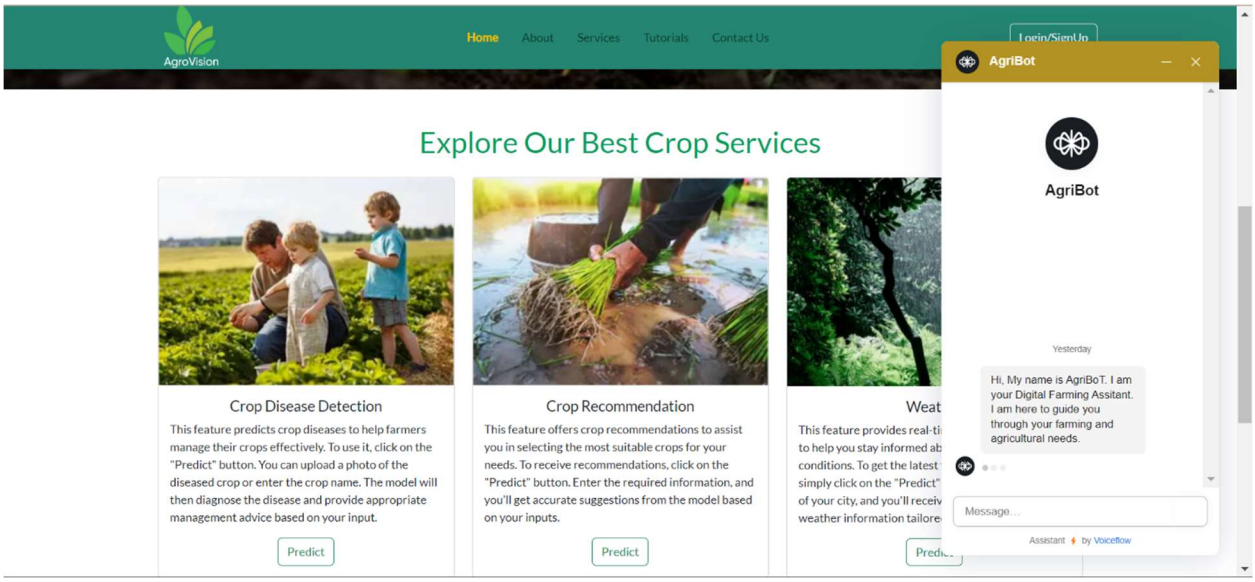


Login Page

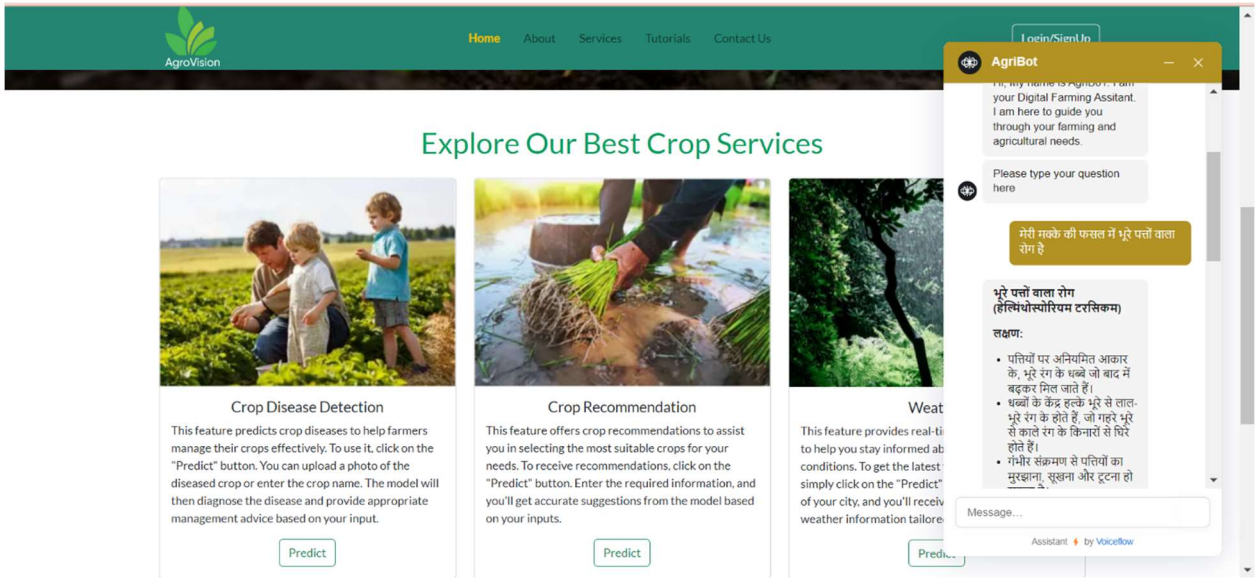


SignUp Page





AI Chatbot (Multi lingual)



Crop Recommendation System