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FARMIWISE

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ABSTRACT: FARMIWISE is a modern web application designed to empower farmers by providing them with an integrated digital platform for accessing crucial agricultural information. The application offers a user-friendly interface for weather forecasts, crop-specific guidance, seed variety details, and more. With the integration of Firebase for user authentication and real-time data storage, FarmiWise ensures a secure and personalized experience for every user. By streamlining access to essential resources and tools, FARMIWISE aims to bridge the technological gap in rural farming communities and promote smarter, data-driven agricultural practices. This platform is particularly beneficial in helping farmers make timely decisions that can improve crop yield, reduce losses, and ultimately enhance their livelihoods.

I. INTRODUCTION

Agriculture remains the backbone of many economies, especially in developing countries like India. However, many farmers still face challenges due to limited access to timely information, weather updates, and crop advisory services. FARMIWISE was conceptualized to address these gaps by offering a comprehensive web-based solution that brings key agricultural resources to the fingertips of farmers.

FarmiWise integrates multiple features such as real-time weather updates based on the user's location, a crop advisory module detailing seed varieties and cultivation techniques, and a user authentication system that ensures secure access to personalized information. The application is built using modern web technologies such as HTML, CSS, JavaScript, and Firebase for backend services including authentication and Firestore database. The primary goal of FARMIWISE is to enable farmers to make informed decisions, improve productivity, and embrace technology as a supportive tool in their agricultural journey. By fostering digital inclusion in agriculture, FarmiWise contributes to building a more resilient and tech-savvy farming community.

II. MINI-PROJECT PLAN

1. Project Overview
2. Project Timeline: Duration: 10 weeks
3. Key Milestones:
 - a. Week 1 -2: Planning and Research
 - Conduct a detailed literature review to understand existing systems and identify unique features.
 - Define the specific requirements and functionalities of the Farmer's website.
 - Create a project plan outlining tasks.
 - b. Week 3-4: Design and Prototyping
 - Design the user interface (UI) for the website, emphasizing simplicity and ease of use.
 - Develop wireframes and prototypes for user testing.
 - Finalize the UI design based on user input.

c. Week 5-6: Frontend Development

- Begin frontend development, focusing on creating a responsive and intuitive interface.
- Conduct iterative testing to ensure a smooth user experience.

e. Week 7-8 : Testing and Quality Assurance

- Conduct comprehensive testing, including functionality, usability, and performance testing.
- Address any bugs or issues identified during testing.
- Optimize website performance for a smooth user experience.

f. Week 9-10: Deployment and Launch

III. PROBLEM STATEMENT & OBJECTIVE

- Many farmers in India are not well-educated and also have very little knowledge about the weather conditions.
- They are unaware of the different types of crops they can grow and which type of crop is suitable according to the climate of their respective locations.
- There is a great need to help farmers by giving them knowledge about the climate of their region, and about the types of different crops they can grow in such climates.
- The knowledge of which crops are the most profitable crops based on their geographical location.

IV. METHODOLOGY AND IMPLEMENTATION

Introduction : Farmers in India are not well-educated and have limited knowledge about weather conditions in their region, different types of crops they can grow, and which type of crop is suitable according to the climate of their respective locations and also which crop is the most profitable.

Therefore, to assist these farmers, we are developing a website to help the farmers across the country by gathering relevant information from the farmers on our website and assisting them as much as possible.

Hardware & Software requirements :

- **Hardware:**

1. Device:

The user can work with a desktop computer & laptop.

Processor: Intel core i3 or higher.

RAM: 2GB or higher.

Storage: SSD storage for better performance.

Network: Stable internet connection with sufficient bandwidth.

- **Software:**

1. Web Browser:

- Latest version or compatible versions of popular web browsers, including Google Chrome, Mozilla Firefox, Microsoft Edge.

2. Internet Connection:

- Stable and reliable internet connection with sufficient bandwidth.

3. Screen Resolution

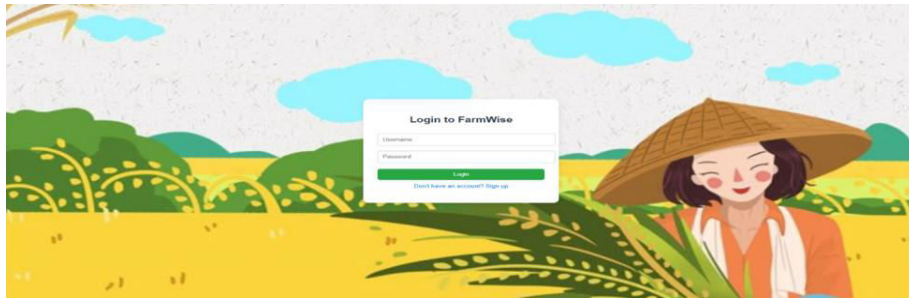
- Recommended minimum screen resolution: 1024x768 pixels.

4. Accessibility:

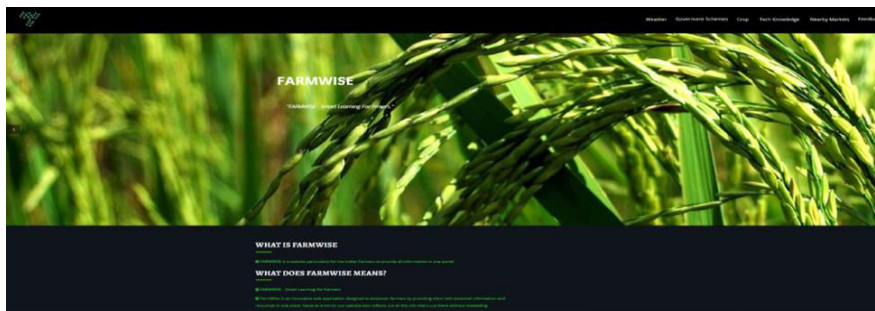
- Support for accessibility features and compliance with web accessibility standards (e.g., WCAG).

V. EXPERIMENTAL OUTPUT

1 Sign up and Login page :



2. Dashboard :



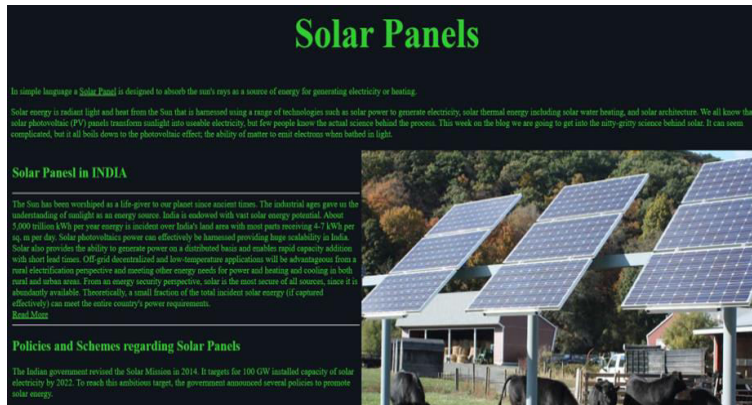
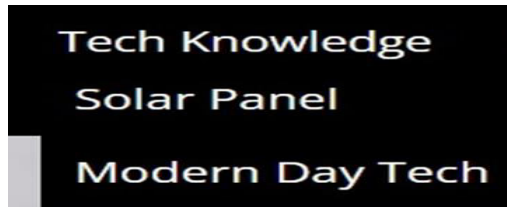
2 Weather (Direct Location Access)



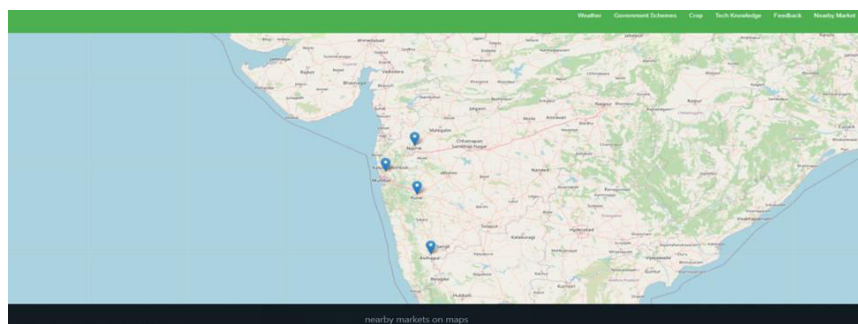
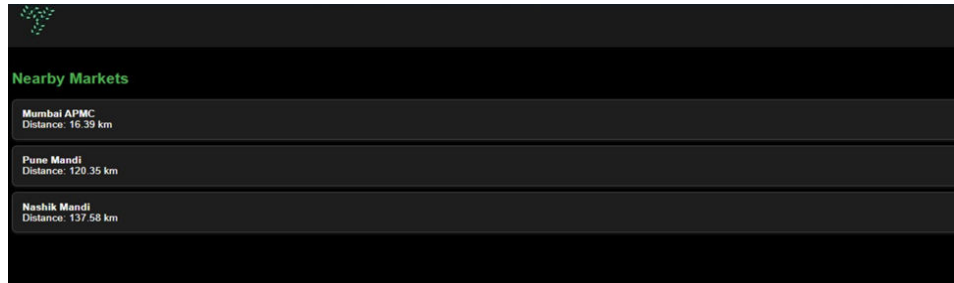
4. Government Schemes :



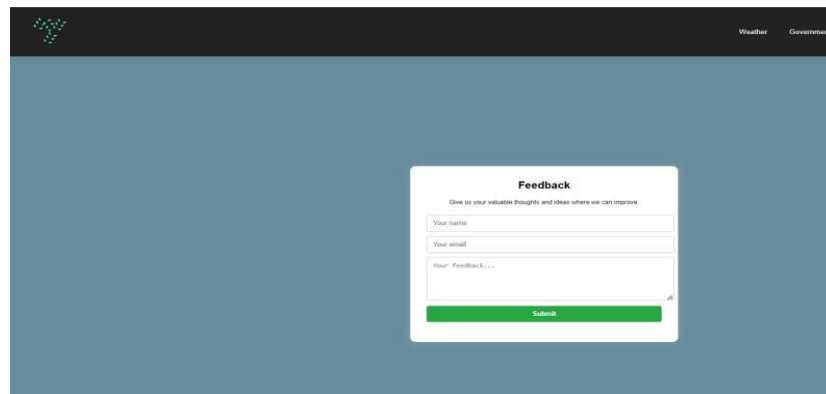
5. Crop



7 Nearby Markets address and location on map :



8 Feedback :



VI. CONCLUSION & FUTURE SCOPE

Conclusion :

- The main object of making this project is to help the farmers have all the information on climate of their respective location & suitable crops for their respective location & lastly crops that would be most profitable at that point of time on the basis of their geographical location.

Future Scope:

- The future scope of a farmer's website is exciting and brimming with possibilities, driven by advancements in technology and the growing emphasis on sustainable and data-driven agriculture. Here are some key trends that could shape the future.
- Precision Agriculture: Websites can integrate with IoT sensors, drones, and data analysis tools to provide real-time insights on weather patterns, seeds availability and prices, information on Fertilizers & Knowledge on Modern day Technology, Government Schemes, crop performance in the past. This empowers farmers to make informed decisions, optimize inputs, and maximize yields.

- AI and Machine Learning: Advanced algorithms can analyze data to predict crop yields, identify potential diseases, and suggest personalized recommendations. This opens doors to personalized farming and resource management

Conclusions and Future Scope

Lastly, Flood crop loss assessment model is implemented using multimodal dilated convolution and LSTM based late feature fusion method for Flood induced crop loss assessment. The proposed model has an accuracy of 86.58% and provides the damage in terms of Low damage, Moderate damage and Severe damage.

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