कृषि एवं किसान कल्याण मंत्रालय
MINISTRY OF AGRICULTURE AND FARMERS WELFARE

NATIONAL BANK FOR AGRICULTURE AND RURAL DEVELOPMENT
NABARD

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AGRISURE GREENATHON

Team Details

- Team Name: Equators
- Team Leader Name: Kavin Dev R
- Problem Statement: Track 1: Smart Agriculture on a Budget

Idea Brief

- Develop a comprehensive app for Farmer Producer Organizations (FPOs).
- Connect farmers, FPOs, and Cluster-Based Business Organizations (CBBOs).
- Integrate land registration using Land Documents and Bhoonidhi Portal.
- Provide crop suggestions based on NVMI and LAI analysis.
- Streamline FPO operations and enhance transparency.

How different is it from existing ideas?

- Holistic approach: Combines FPO management, land registration, and crop advisory
- Utilizes government data systems (Bhoonidhi, Land Documents(Survey No., Land No.)) for accurate land information
- Integrates advanced soil analysis (NVMI, LAI) for precise crop recommendations

How will it solve the problem?

- Simplifies FPO formation and management processes
- Enhances transparency in land ownership and crop planning
- Empowers farmers with data-driven crop suggestions
- Facilitates better coordination between farmers, FPOs, and CBBOs

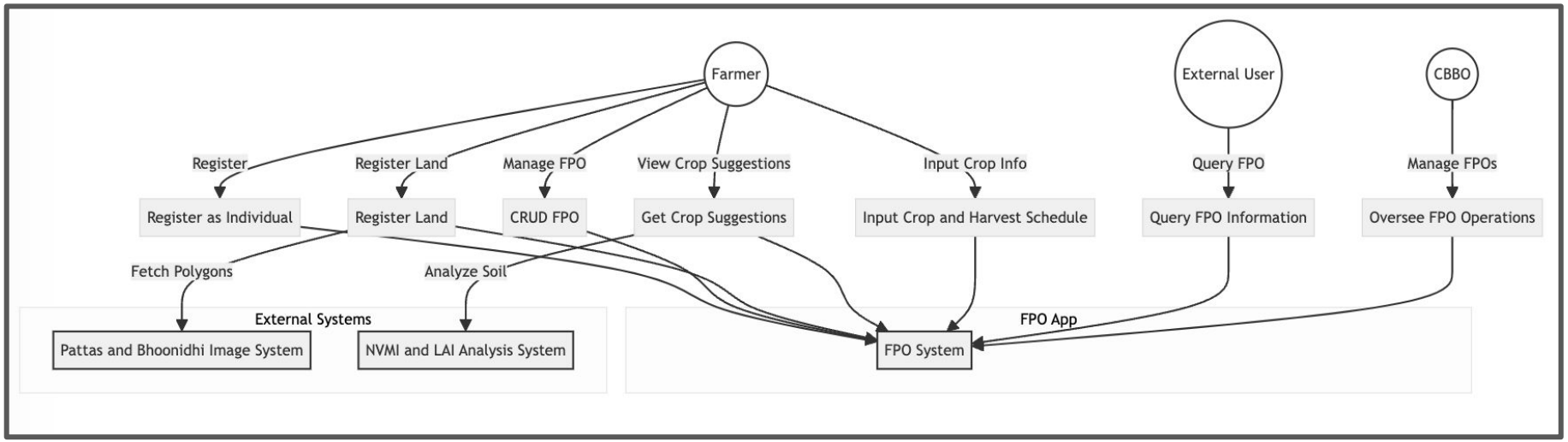
USP of the proposed solution

- One-stop platform for FPO ecosystem
- Data-driven decision making for crop selection
- Seamless integration with government land record systems
- Enhanced visibility for stakeholders (NABARD, government agencies)

List of features offered by the solution

- FPO registration and management
- Farmer onboarding and profile management
- Land registration with polygon mapping
- Crop suggestion engine using NVMI and LAI data
- Harvest schedule prediction and management
- CBBO oversight and reporting tools
- Integration with Bhoonidhi and Patta systems
- Crop input and harvest data tracking
- FPO performance analytics and reporting

Process flow diagram



Wireframes/Mock diagrams of the proposed solution (optional)

Aaditya Rengarajan

Hello Aaditya!

User ID #02

Live Weather

Add Land

Share ID

Remote Sensing Analysis

Manage Schedules

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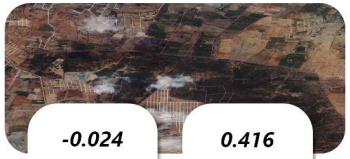
Remote Sensing

Soil Health Analysis from Remote Sensing Analysis

LND-192-4321



-0.024 NDMI

0.416 LAI

Realistic Applications

Rice

Tomato

Advisories

Vegetation Health: Low NDVI indicates minimal healthy vegetation; potential causes include urban development.
Leaf Coverage: Low LAI supports sparse leaf coverage; suggests area is not densely vegetated and may include non-vegetative surfaces.

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Live Weather

Land LND-192-4321 Weather

Location: Shadnagar, TS, IN
Crop: Wheat

Telangana

7 Day's Forecast

Date	Min Temp	Max Temp	Weather
26-Jul	22.6	25.6	Overcast sky with possibility of light rain or Thunderstorm
27-Jul	22.8	27.1	Overcast sky with possibility of light rain or Thunderstorm
28-Jul	23.0	28.4	Overcast sky with possibility of light rain or Thunderstorm
29-Jul	22.6	28.8	Overcast sky
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31-Jul	22.9	28.2	Overcast sky with possibility of light rain or Thunderstorm
01-Aug	22.5	27.3	Overcast sky with possibility of light rain or Thunderstorm

Notifications

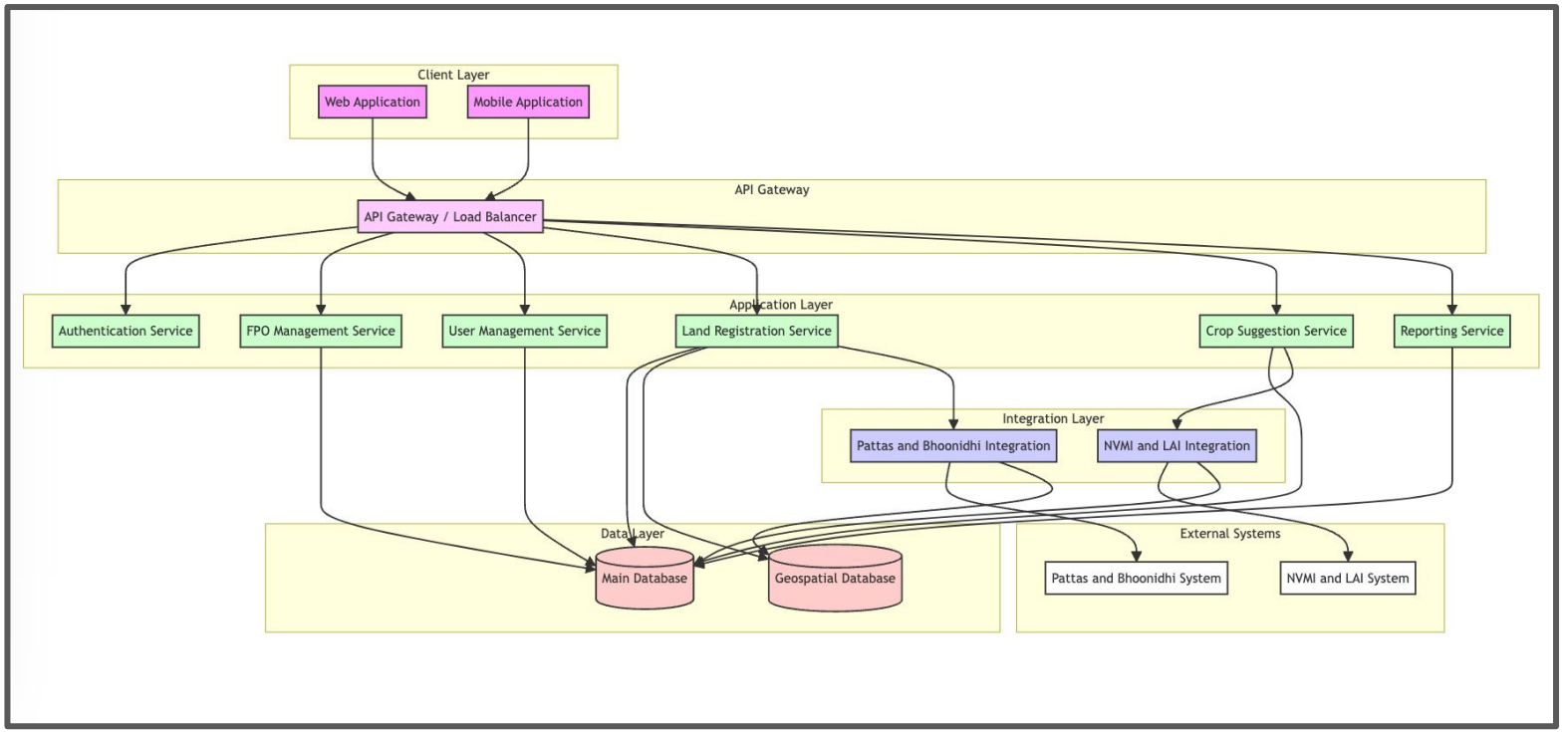
Harvest Schedule Alert:

Land: LND-192-4321
Crop: Wheat
Crop Added: 05-02-2024

Market Alert:

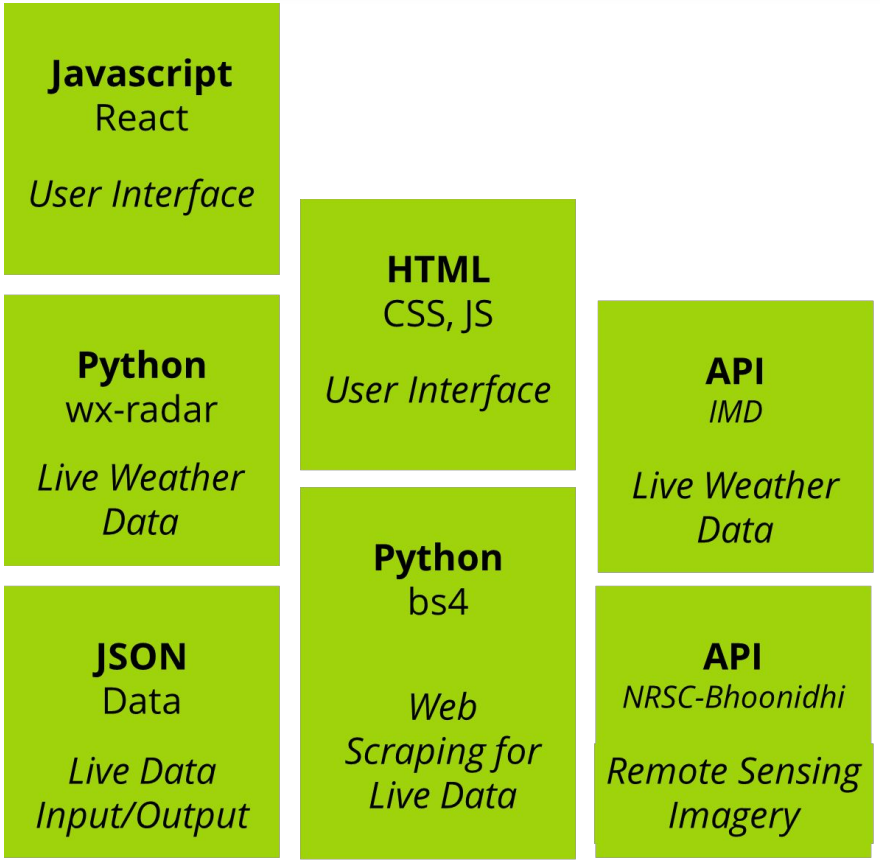
Crop: Wheat
Market Location: Shadnagar,TS, IN
Rate: ₹25/kg

Architecture diagram of the proposed solution

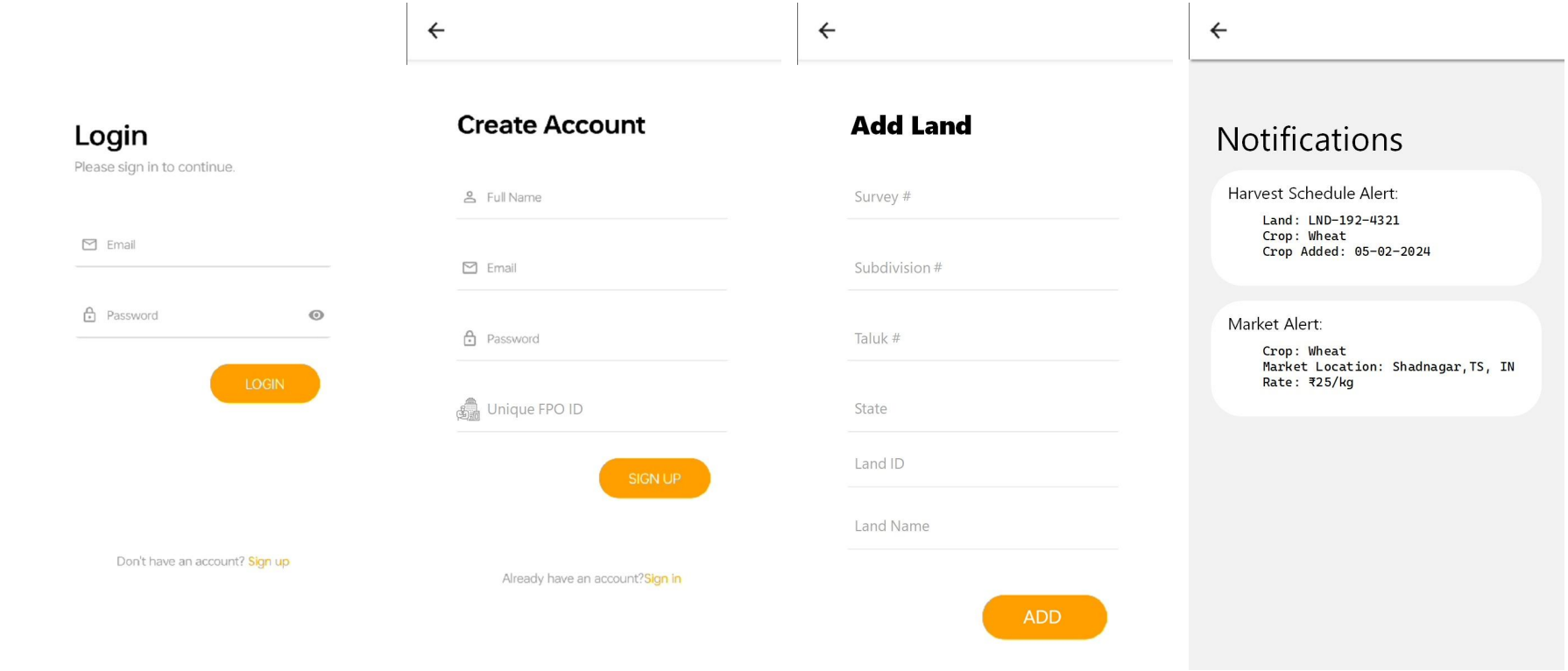


Technologies to be used in the solution

- The technology stack encompasses a backend built with React for interactive user interfaces. Front-end development is handled using HTML, CSS, and JavaScript to create and style user interfaces.
- wx-radar, Web Scraping modules and the Indian Meteorological Department website assist fetching live weather data from the nearest weather station.
- Latest/Live Satellite Imagery is fetched from ISRO's NRSC's Bhoonidhi portal.
- Live data input and output are managed using JSON, and the database is backed by NoSQL MongoDB's BSON schema, very similar to JSON.
- This stack ensures secure, interactive web/native applications with real-time data processing capabilities.



Snapshots of the prototype



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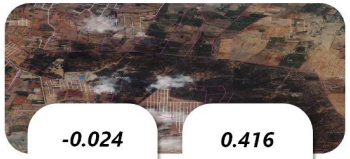

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Additional Details/Future Developments

- AI-powered yield prediction and market trend analysis
- Integration with e-NAM for direct market access
- Mobile app for offline data collection in remote areas
- Blockchain integration for transparent supply chain tracking
- Weather data integration for improved crop planning
- Expansion to include financial services (loans, insurance)
- Multi-language support for regional inclusivity
- IoT integration for real-time field monitoring

GitHub Public Repository Link & Demo Video Link

https://github.com/rogue0xbyte/agriSure-app

https://youtu.be/wssC2XaU1-s

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