

Farmers Trading App (FTA)

Problem Statement

Farmers face challenges in real-time decision-making related to crop planning, pest control, and market pricing. There is a need for a comprehensive platform that provides real-time insights based on localized data to empower farmers.

Solution Statement

FTA aims to resolve these issues through:

- Generative Crop Planner (GCP)
- Pest and Disease Alert System (PDAS)
- Market Price Predictor (MPP)

User Mobile App

User Stories

Use Case 1: User Guide Splash Screen

Actor: App User

Description: The user accesses the User Guide Splash Screen to gain a brief introduction to the FTA app and its features.

Flow:

- User launches the FTA app.
- Upon launching, the app displays a User Guide Splash Screen with an option to "Learn More" or "Skip."
- If the user selects "Learn More," they are directed to a user guide or tutorial providing an overview of the app's features and functionalities.
- If the user selects "Skip," they proceed directly to the app's Login screen.

Alternative Flow:

If the user guide content is not accessible or the user skips it, the app proceeds to the login screen as the default behavior.

19:25

54%



Welcome to FTA

Supporting



Skip

Next

19:25



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FARMING TIPS ADVISOR

Welcome to Farming Trips Advisor

Effortlessly plan your crop cycles using our AI-driven Crop Planner. Maximize your yield and minimize risks with precise planting recommendations tailored to your location and soil conditions:



Skip

Next

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Supporting DILASA

Dilasa is an NGO working in close collaboration with 25 smaller NGOs in the Vidharbha and Marathawada regions of India. The organization is committed to rural development, micro-irrigation, women's empowerment, livelihood improvement, and watershed initiatives, covering substantial land areas.

<https://dilasa.org/>



Next

Use Case 2: User Registration

Actor: New User

Description: A new user registers for an FTA account.

Flow:

- User launches the FTA app.
- User selects the registration option.
- User provides their email, sets a password, and submits the registration form.
- The system verifies the information and creates a new user account.
- User is automatically logged into the app.

Alternative Flow:

If registration fails (e.g., invalid email or password), the system displays an error message and prompts the user to try again.

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SIGNUP

Full Name

Email

Phone Number

Password

Your password must contain:

- At least 12 characters
- 1 uppercase letter
- 1 lowercase letter
- 1 number

Confirm Password

Use Case 3: User Log In**Actor:** Registered User**Description:** A registered user logs into their FTA account.**Flow:**

- User launches the FTA app.
- User selects the login option.
- User provides their registered email and password.
- The system validates the credentials.
- Upon successful validation, the user is logged into the app.

Alternative Flow:

If login fails (e.g., incorrect email or password), the system displays an error message and allows the user to attempt login again.

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LOGIN

Email *

Password *



[Forgot your password?](#)

[Log in](#)

Don't have any account? [SignUp.](#)

19:28



Anya Shukla

Edit Profile

Personal Info



My Farm

1



Change Password



Use Case 4: Dashboard Overview

Actor: Registered User

Description: The user views the dashboard in the FTA app for an overview of AI-generated insights and recent notifications.

Flow:

- User logs into the FTA app.
- The system presents the user with the dashboard.
- The dashboard displays recent AI insights and notifications.

Alternative Flow:

If there are no recent insights or notifications, the dashboard indicates that it is empty.

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FARMING
TIPS ADVISOR



Anya Shukla

My Farms



+ Add New Farm



19:26



53%



Anya Shukla



Farm Name *

Enter

Description

Enter

Location *

Enter

Total Farm Area *

In Acres

Crop Name *

Enter

Growth Cycle *

e.g., 180 Days



19:26



53%



Anya Shukla



Farm Name *

Wheat Farm |

Description

Enter

Location *

Khāndsā, IN



in

house



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FARMING
TIPS ADVISOR



Anya Shukla

My Farms

Wheat Farm



34° C

Khāndsā, IN

500 Acre

Wheat

PDAS

GCP

MPP



Use Case 5: Pest and Disease Alert

Actor: Registered User

Description: The user receives and responds to a pest or disease alert in the FTA app.

Flow:

- User accesses the Pest and Disease Alert System (PDAS) within the FTA app.
- The system provides real-time alerts about potential pest or disease outbreaks in the user's region.
- If an alert is received, the user reviews it.
- The system suggests mitigation measures for the specific alert.
- The user can take action based on the provided suggestions.

Alternative Flow:

If there are multiple alerts, the user can prioritize and select the one they want to address first.

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Anya Shukla
Khāndsā, IN



Wheat Farm

Khāndsā, IN



34° C
haze

PDAS

GCP

MPP

Pest and Disease Alert System: Get help with pests and diseases with AI.

(FHB): FHB is caused by the fungus *Fusarium graminearum* and can be prevented by fungicides applied at flag leaf and/or

heading stages of wheat.

Solution: Rotating wheat with different crops reducing the level of infection for successive crops. Plant resistant varieties when available, and apply fungicides at flag leaf and/or heading stages.

2. **Septoria leaf blotch:** The fungal pathogen *Septoria tritici* affects the leaves of wheat and can be prevented with early detection and spraying with fungicides.

Solution: Apply fungicides at heading time, or early detection spraying with triazole or strobilurin. Regular crop rotation and prompt removal of infected residue also helps.

3. **Armyworms:** The small larvae of armyworm moths feed on wheat leaves and heads, making harvesting



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Anya Shukla
Khāndsā, IN



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Solution: Rotating wheat with different crops reducing the level of infection for successive crops. Plant resistant varieties when available, and apply fungicides at flag leaf and/or heading stages.

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Solution: Apply fungicides at heading time, or early detection spraying with triazole or strobilurin. Regular crop rotation and prompt removal of infected residue also helps.

3. **Armyworms:** The small larvae of armyworm moths feed on wheat leaves and heads, making harvesting difficult. These pests can be prevented by using insecticides and controlling other nearby crops that can act as sources of infestation.

Solution: Use either foliar or granular insecticide or biological control methods such as pheromone traps or natural predators. Collect and monitor for egg masses, and use a scouting program in fields to detect pests



Use Case 6: Generate Crop Plan**Actor:** Registered User**Description:** The user generates a crop plan with the assistance of FTA.**Flow:**

- User navigates to the Generative Crop Planner (GCP) feature within the FTA app.
- User provides details about their farm, including crop type, soil type, and size.
- The system processes the information and generates a crop rotation and planting strategy.
- The user reviews the generated plan and can choose to save it for future reference.

Alternative Flow:

If the system cannot generate a plan due to missing or incorrect information, it informs the user by displaying error message.

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Anya Shukla
Khāndsā, IN



Wheat Farm

Khāndsā, IN



34° C
haze

PDAS ⓘ

GCP ⓘ

MPP ⓘ

Well howdy there, farmer friend! If you're lookin' for some generative crop plans for the summer season in Khāndsā, IN, then you've come to the right place. Now, before we get started, it's important to consider the climate and soil conditions in your area. Khāndsā is located in the state of Haryana, which experiences a semi-arid climate with hot summers and limited rainfall. The soil in this region is predominantly loamy, which means it has a good balance of sand, silt, and clay.

Now let's get down to business and talk about some crops that are suitable for summer planting in Khāndsā:

1. Okra (Lady's Finger): Okra loves the heat and thrives in hot summer temperatures. It can be planted from April to June. Make sure to provide adequate spacing between the plants and water them regularly. Okra is a popular vegetable crop that can fetch good prices in the



Use Case 7: Market Price Prediction

Actor: Registered User

Description: The user checks current and predicted market prices for crops in the FTA app.

Flow:

- User accesses the Market Price Predictor (MPP) feature within the FTA app.
- User selects a specific crop.
- The system displays the current market price for the selected crop.
- The user can also view predictions for future prices and historical data.

Alternative Flow:

If the user's selected crop is not available or not found in the database, the system prompts the user to select a different crop.

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Anya Shukla
Khāndsā, IN



Wheat Farm

Khāndsā, IN



34° C
haze

PDAS ⓘ

GCP ⓘ

MPP ⓘ

Ah, my friend, when it comes to the market price prediction of Wheat in Khāndsā, IN during the summer season, we must consider a few factors. Firstly, the supply and demand of wheat in the region. If there is a shortage of wheat due to poor harvest or increased demand, we might see an upward movement in the price.

Secondly, we must keep an eye on the weather conditions during the summer months. If there are prolonged droughts or excessive rainfall, it can have a significant impact on the quality and quantity of wheat crops, which can affect the market price.

Furthermore, global factors such as international trade policies, currency exchange rates, and geopolitical events can also influence the price of wheat in Khāndsā, IN.



Use Case 8: Profile Management

Actor: Registered User

Description: The user manages their profile and app settings within the FTA app.

Flow:

- User navigates to the profile and settings section within the FTA app.
- User can update personal and farm details.
- User can customize notification preferences.
- User can modify app settings, such as theme and language.

Alternative Flow:

If the user encounters an issue while updating their profile or settings, the system provides clear error messages and guidance on resolving the problem.

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FARMING
TIPS ADVISOR



Anya Shukla

Edit Profile

Personal Info



My Farm

1



Change Password



Use Case 9: About Us Page

Actor: Registered User

Description: The user accesses the "About Us" page to learn more about the FTA app and the organization behind it.

Flow:

- User logs into the FTA app.
- User navigates to the app's menu or settings section.
- User selects the "About Us" option.
- The system displays information about the app, its mission, and the organization.
- User can scroll through the content to learn more.

Alternative Flow:

If the "About Us" page is temporarily unavailable, the system informs the user and suggests checking back later.

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About Us

Welcome to Farming Tips Advisor, your trusted companion in the world of agriculture and farming. Our mission is to empower farmers with knowledge, insights, and tools to make informed decisions, enhance productivity, and achieve sustainable and profitable farming practices.

Our Vision

At Farming Tips Advisor, we envision a world where every farmer, regardless of their scale of operation, has access to cutting-edge technology and expert guidance. We aim to bridge the gap between traditional farming practices and modern agricultural innovation.

Who We Are?

We are a dedicated team comprising farmers, agricultural experts, technologists, and data scientists united by our profound passion for agriculture and unwavering commitment to empower the farming community. Drawing from our collective experience and a keen awareness of the unique challenges that farmers encounter, we have proudly conceived and crafted the Farming Tips Advisor application. Our purpose is to confront these challenges head-on, offering tangible, pragmatic solutions to support and enhance the lives of farmers.



Admin Web Application

Admin Use Case 1: Admin Log In

Actor: Admin User

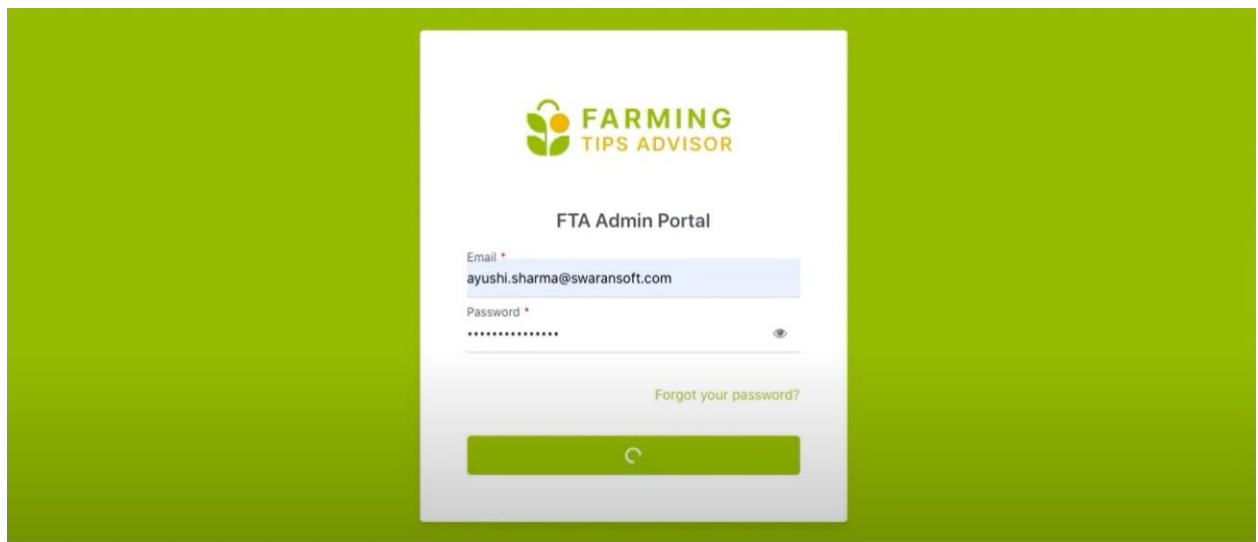
Description: An admin user logs into the Admin Dashboard.

Flow:

- Admin user accesses the Admin Dashboard login page.
- Admin user provides their admin credentials (e.g., username and password).
- The system validates the admin's credentials.
- Upon successful validation, the admin user is granted access to the Admin Dashboard.

Alternative Flow:

If login fails (e.g., incorrect credentials), the system displays an error message and allows the admin user to attempt login again.



Admin Use Case 2: View Registered User Details

Actor: Admin User

Description: The admin user views details of all registered users from the Admin Dashboard.

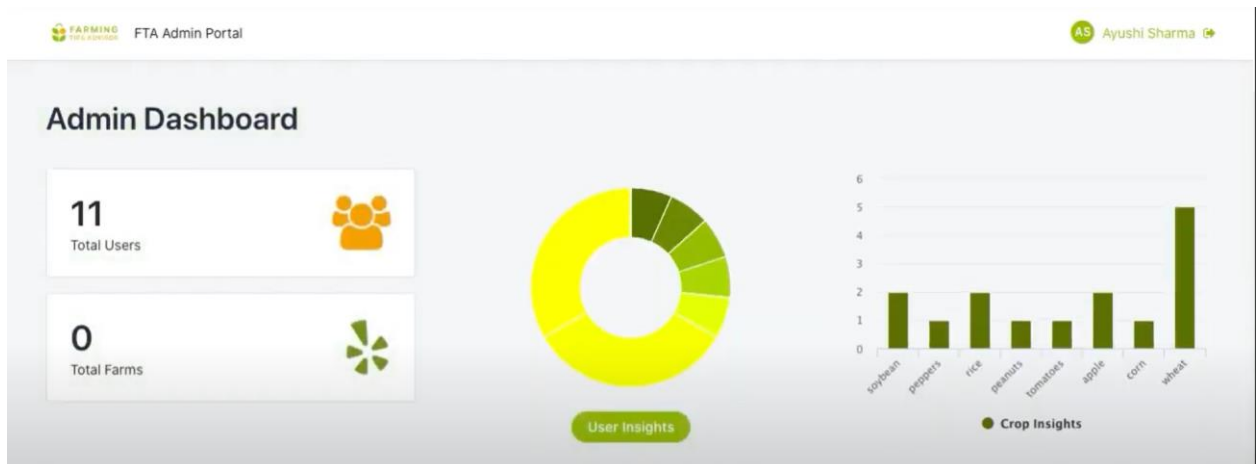
Flow:

- Admin user logs into the Admin Dashboard.
- The system presents the admin user with the Admin Dashboard.
- Admin user selects an option to view registered user details.
- The system retrieves and displays a list of all registered users along with their relevant details.

Alternative Flow:

If there are no registered users, the system indicates that the user database is empty.

Admin user can filter or search for specific users based on criteria such as registration date or user attributes. And admin can also export the data in excel.



The screenshot shows a table of registered users with the following data:

	Farm name	Farm Descript...	Crop Name	Growth Cycle	Location	Total Farm Area	Farming Season	Soil Type
5	Rolling Hills Farm	Organic tomato f...	Tomatoes	90 days	California, USA	200	Summer	Sandy
6	Wheat Farm	My wheat farm	Wheat	180	Khāndsā, IN	500	Summer	Loam
7	Wheat Farm	My wheat farm	Wheat	180	Khāndsā, IN	500	Summer	Loam
8	Mountain View ...	High-altitude app...	apple	180 days	Washington, USA	300	Spring	Sandyloam
9	Name: Gaurav Malik (5 items)							
10	Urban Farms	A generic product ...	Rice	120 days	Baraut, IN	800	Summer	Clay

Benefits

Empowering Informed Decisions: As a farmer, you can now make well-informed decisions about your crops, pest control, and selling strategies. FTA provides real-time insights, helping you optimize your farming activities and maximize your profits.

Effortless Crop Planning: FTA's Generative Crop Planner (GCP) takes the guesswork out of crop planning. It offers advice based on real-time weather conditions and your specific location, making it easier for you to decide when and what to plant.

Proactive Pest Management: With the Pest and Disease Alert System (PDAS), you no longer have to worry about unexpected pest attacks or diseases ruining your crops. FTA alerts you in real-time, allowing you to take immediate action and protect your yields.

Profitable Selling Decisions: FTA's Market Price Predictor (MPP) equips you with the current market prices for your crops. This ensures that you can make informed decisions when it's time to sell, maximizing your income.

User-Friendly Experience: FTA's user-friendly interface means that you don't need to be tech-savvy to benefit from the app. It's designed with you in mind, making it easy to navigate and use.

Personalized Guidance: FTA allows you to register and manage your profile, ensuring that the advice and information you receive are tailored to your specific needs. It's like having a personal farming assistant at your fingertips.

Streamlined Farm Tasks: FTA simplifies tasks like farm management, registration, and profile management, saving you time and effort. You can focus more on your farming activities and less on administrative work.

Real-Time, Accurate Data: FTA relies on real-time data, so the information you receive is always current and accurate. This means that you can trust the insights and recommendations it provides.

Cutting-Edge Technology: By using advanced technology like Vertex AI Language models and external APIs, FTA ensures that you have access to the latest tools and resources to enhance your farming practices.

Quick Access: FTA's development within a four-day hackathon means that you can start benefiting from its features in no time. It's a rapid solution to address your farming challenges.

In essence, FTA puts the power of data and technology in your hands, helping you overcome the challenges of farming, make better decisions, and ultimately improve your livelihood as a farmer.