

Project Overview

FarmTech is a specialized livestock management platform designed to digitize animal husbandry and supply tracking. Ranchers and caretakers can monitor animal health, growth, and feeding schedules in real-time, while owners use a centralized dashboard to manage inventory, track veterinary records, and optimize herd performance.

Problem Statement

Livestock owners struggle with fragmented records and a lack of real-time visibility into animal health and feed efficiency. Relying on manual logs leads to missed vaccinations, inconsistent feeding, and difficulty tracking the profitability of the herd.

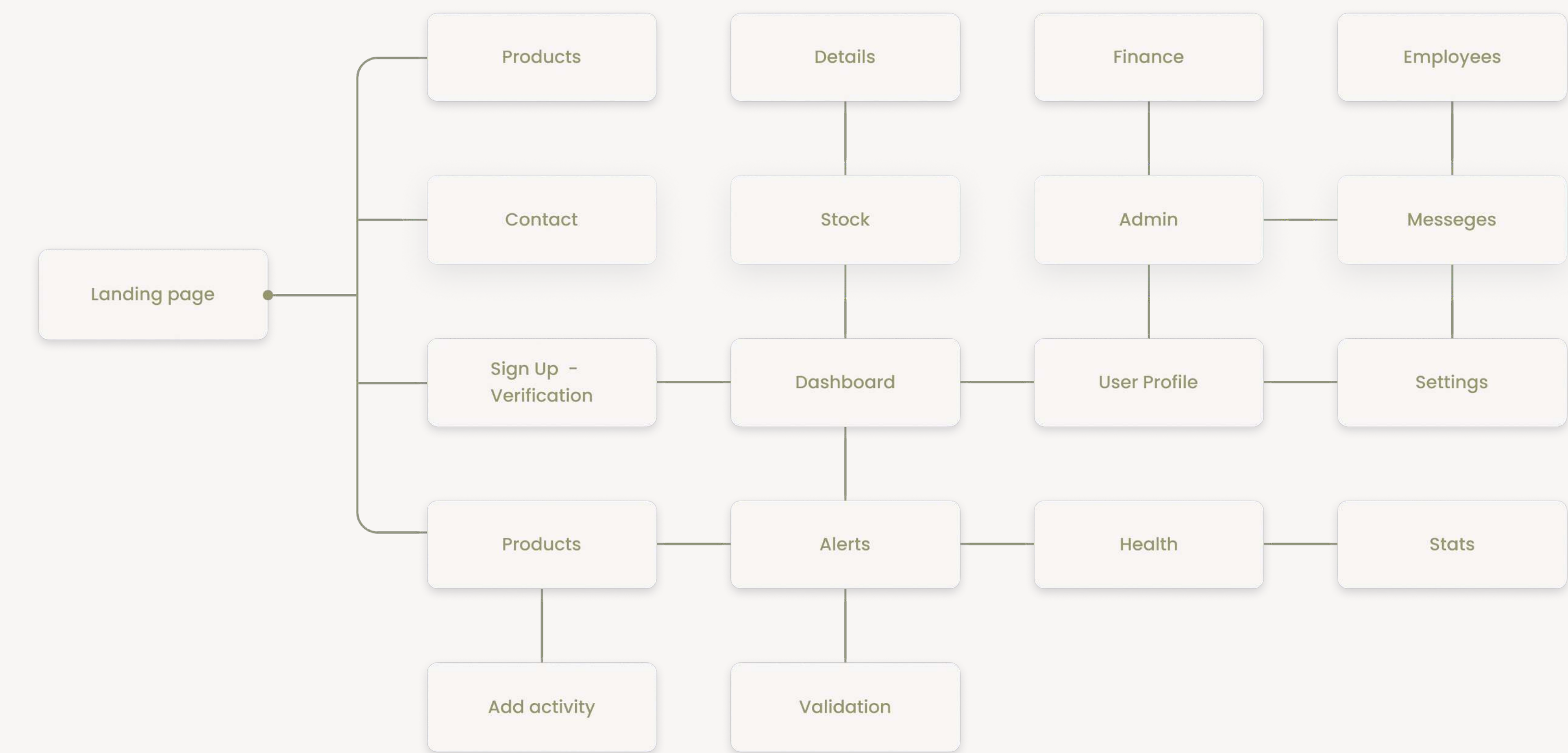
FarmTech solves this by centralizing IoT data and operational management into a single, data-driven platform.

Solution

- **For Workers:** Log animal health, feeding schedules, and vaccinations in real-time using mobile devices.
- **For Suppliers:** Manage feed and medical stock, track delivery batches, and update pricing for farm essentials.
- **For Owners:** Oversee herd growth, monitor livestock performance metrics, and track total operational costs from a central dashboard.

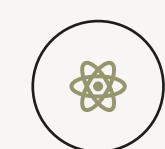
Site Map

To structure the user experience, I created a site map that outlines the core pages and user flows for **Farmtech**. This helped define navigation, prioritize features, and simplify the overall design.



Tech stack

A comprehensive overview of the frameworks, languages, and tools used to build and deploy this application.



React



Typescript



Nextjs



Prisma



Stripe



Expressjs

Data Model

This is a private freelance project, so I'm unable to share the database details or schema.

Problem Solving & Takeaways

- The primary challenge was managing high-frequency health logs and feed inventory across large herds without data inconsistencies.
- **Real-time Health Logging:** Developed a robust queuing system to handle simultaneous animal health updates, ensuring no medical records or vaccination logs are lost during peak activity.
 - **Inventory Precision:** Implemented automated stock deductions for feed and medicine, using database triggers to alert managers when supplies hit critical "low-stock" thresholds.
 - **Data Visualization:** Built dynamic growth-tracking charts for the dashboard, using optimized aggregation queries to display herd performance trends without slowing down the interface.

Conclusion

FarmTech reinforced the principles of real-time data integrity and resource optimization in a high-stakes environment. I learned to build systems that maintain perfect consistency between physical stock and digital records, ensuring that critical data—like medical logs and feed levels—remains reliable under heavy operational load while delivering a simplified experience for both field workers and farm owners.

