HACKX 2025

- **Industry Name -**

  Agriculture & AgriTech Industry

- **Problem Statement Title-**

  Transparency Gap in Agriculture

- **Theme -** Empowering Farmers,

  Assuring Consumers

- **Team Name -** Agri_Avengers

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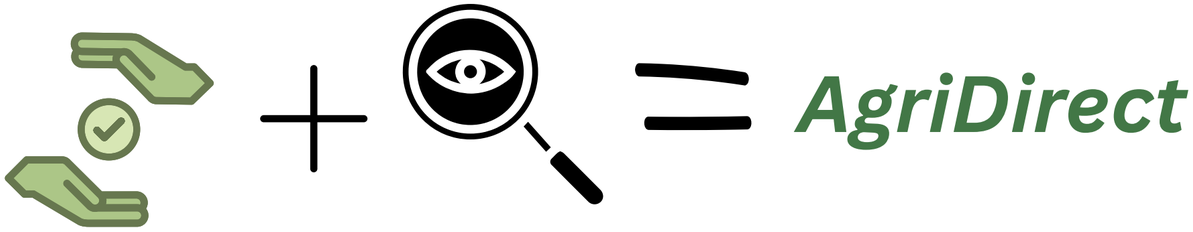
AgriDirect – Transparent QR-Verified Agri Marketplace

IDEA/SOLUTION

*Implementation of a **QR-based Transparent AgriTech Platform** connecting **natural farmers with consumers**:*

- ***QR-based** farmer's multi factor authentication .*
- ***Dynamic pricing** ,balances demand, supply, and fairness .*
- *Community **pre-booking** reserves harvests early and reduces waste.*
- *An **AI smart suggestion system** personalizes baskets and predicts demand.*
- *A secure **marketplace platform** connects farmers and consumers directly.*



fairtrade transperency

PROBLEM RESOULTION

- *AgriDirect offers **QR-based transparency, dynamic pricing**, and **verified farmer stories** for trust and fairness.*
- *With **AI smart suggestions**, **community pre-booking, and a secure marketplace**, it connects farmers and consumers directly.*

What We Have Built:

- **AI-Powered QR Verification** – Validates certificates, farming methods, and necessary documents, then generates QR codes.
- **Dynamic Pricing Model** – AI-based pricing for fair and optimized rates.
- **Personalized Marketplace** – Customers can choose specific categories (e.g., Jain groceries).
- **AI Assistance for Farmers** – Helps farmers with crop guidance and decisions.
- **Flexible Payment Options** – Supports online payments and cash on delivery.
- **Local Logistics Integration** – Empowers small farmers and ensures customers trust their purchases.

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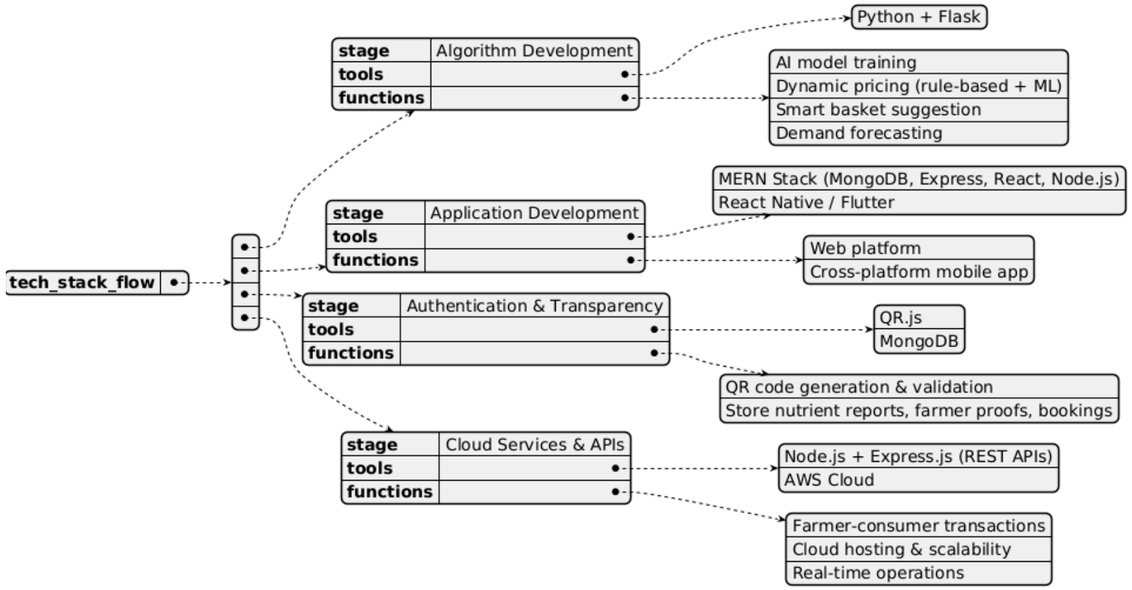
TECHNICAL APPROACH

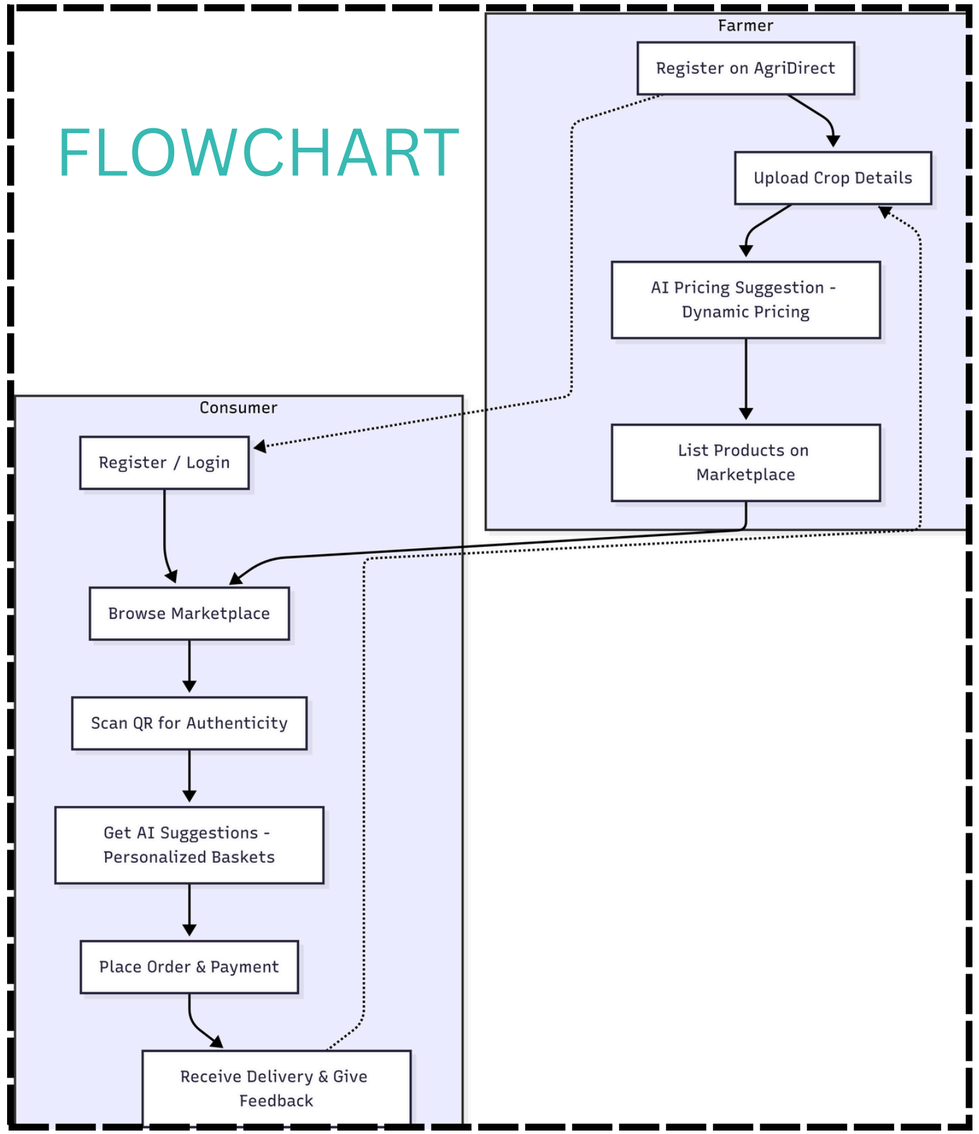
Algorithm Development:
Python + Flask – AI model training, dynamic pricing (rule-based + ML), and smart suggestion system for personalized baskets and demand forecasts.

Application Development:
MERN Stack – Web platform. React Native / Flutter – Cross-platform mobile app development.

Authentication & Transparency:
QR.js – QR code generation and validation. MongoDB – Storage for nutrient reports, farmer proofs, and bookings.

Cloud Services & APIs:
REST APIs (Node.js + Express.js) – Farmer–consumer transactions. AWS – Cloud hosting for scalability and real-time operations.





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PRACTICALITY AND SUSTAINABILITY

EVALUATION OF PRACTICALITY

1.Feasibility of Implementation:

- *The proposed solution is technically achievable with currently available tools and resources. It can be integrated into real-world environments without requiring excessive infrastructure changes.*

2.Cost Considerations:

- *The overall cost of deploying and maintaining the system is reasonable compared to traditional alternatives. However, expenses may increase depending on scale and customization.*

3. User Acceptance:

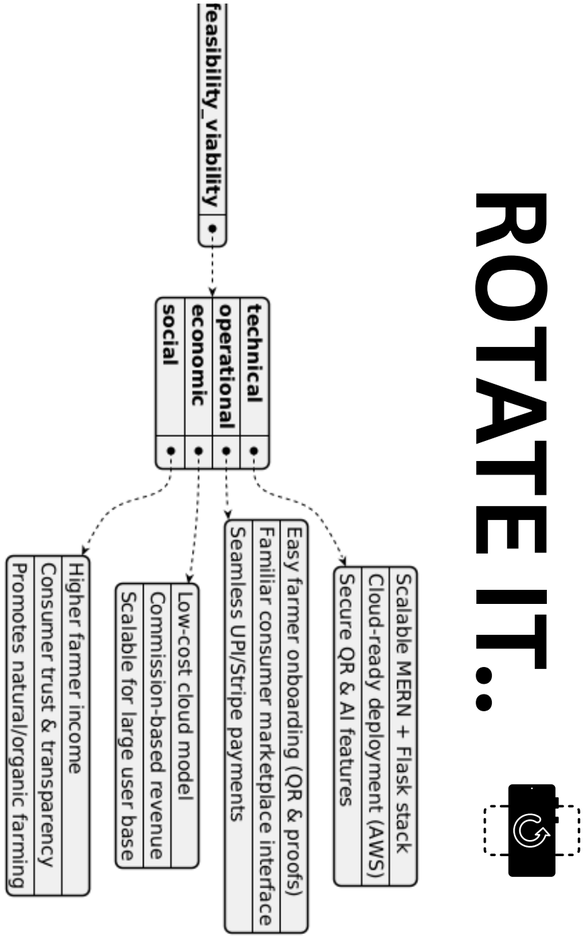
- *Since the solution focuses on improving efficiency, transparency, or usability, end-users are likely to accept it, provided proper training and awareness programs are conducted.*

4.Scalability:

- *The design is flexible and can be expanded to handle larger datasets, more users, or additional features in the future.*

5.Sustainability:

- *Long-term use is practical as the system relies on reliable technologies and standard practices that can be maintained and updated with ease.*



ROTATE IT..

POSSIBLE RISKS & LIMITATIONS

1. Technical Risks:

- System downtime or technical glitches may occur due to hardware/software failures but we are improving it.
- Compatibility issues with existing infrastructure.

2.Operational Risks:

- Resistance from users due to lack of training or adaptability we are thinking to put video or audio to perform it better.
- Errors in execution due to human negligence or inadequate supervision.

3.Financial Limitations:

- Budget constraints may prevent full-scale implementation.
- Ongoing costs for updates and maintenance might be underestimated.

4.Regulatory & Legal Challenges:

- Compliance with local laws, data protection policies, and industry standards.

5.Scalability Issues:

- System may face performance degradation if usage grows beyond initial estimates.

6.Environmental/External Limitations:

- Dependence on external resources such as internet connectivity, power supply, or third-party vendors.

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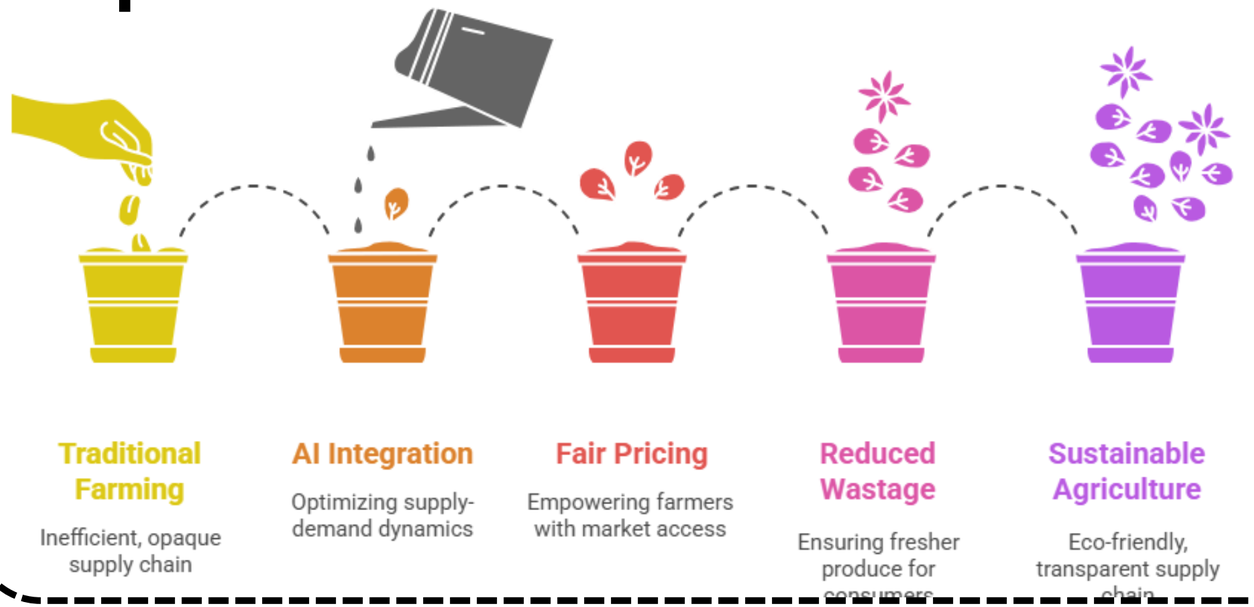
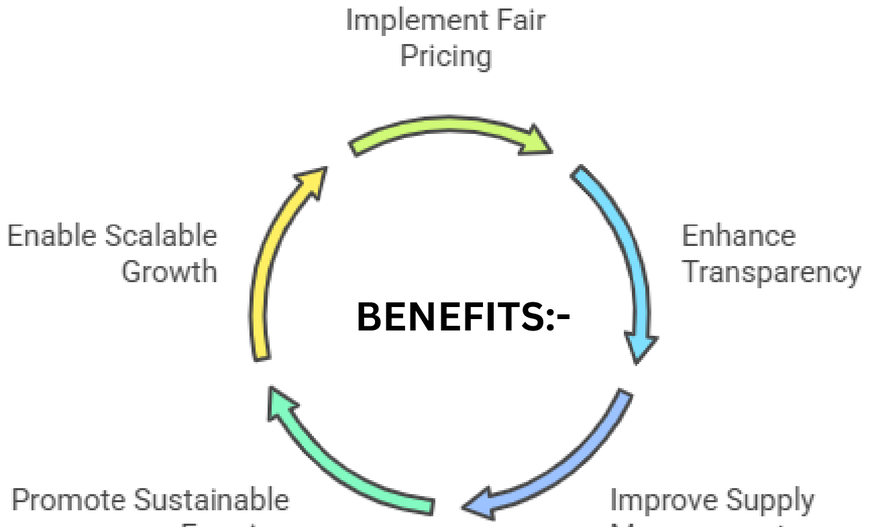
IMPACT AND BENEFITS

impact:-





we are building trust and transperancy here!! which lacks in real world

prototype :- click on this

we hit our 50% mark! you can see it right here, clear as day!

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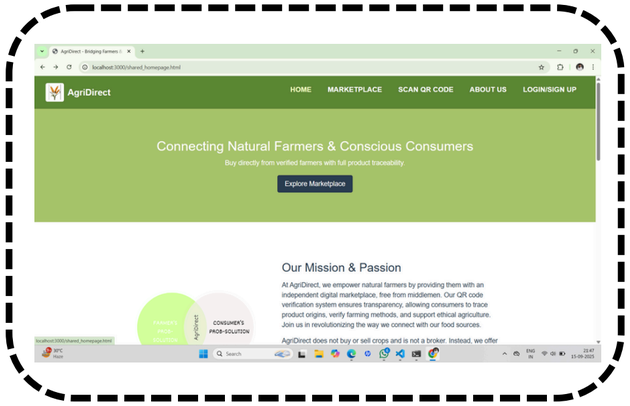
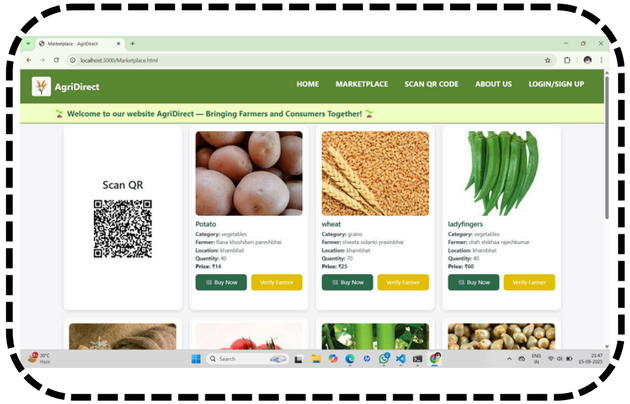
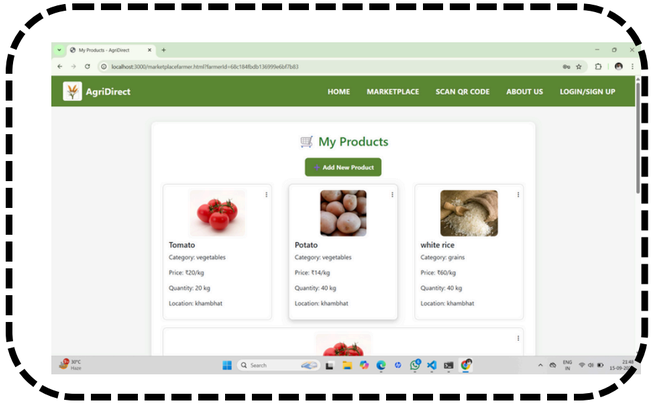
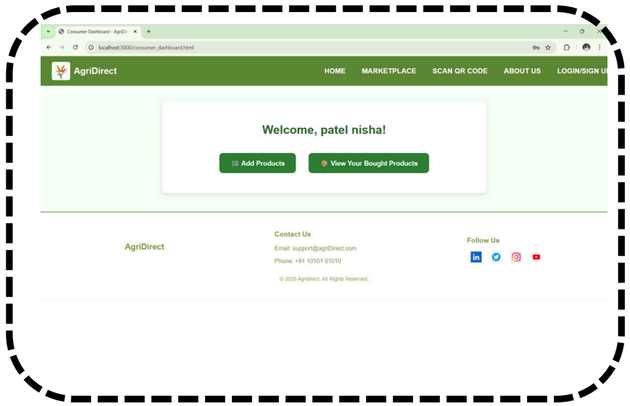
UI/UX









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