National Agro Foundation's Uzhavu Hackathon Shaastra 2025

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Problem Statement

Livestock Health Management Platform: Develop a digital system for monitoring livestock health, insemination schedules, and personalized care, improving animal welfare and farm productivity.

Literature Survey

- **Some reference apps:** Ranchr, AgriWebb, Herdwatch, Cattlemax, Stock Move Express

Key features of these apps:

- **Animal identification and tracking**
- **Health records**
- **Production data**
- **Financial management**
- **Reporting and analytics**

Proposed Solution

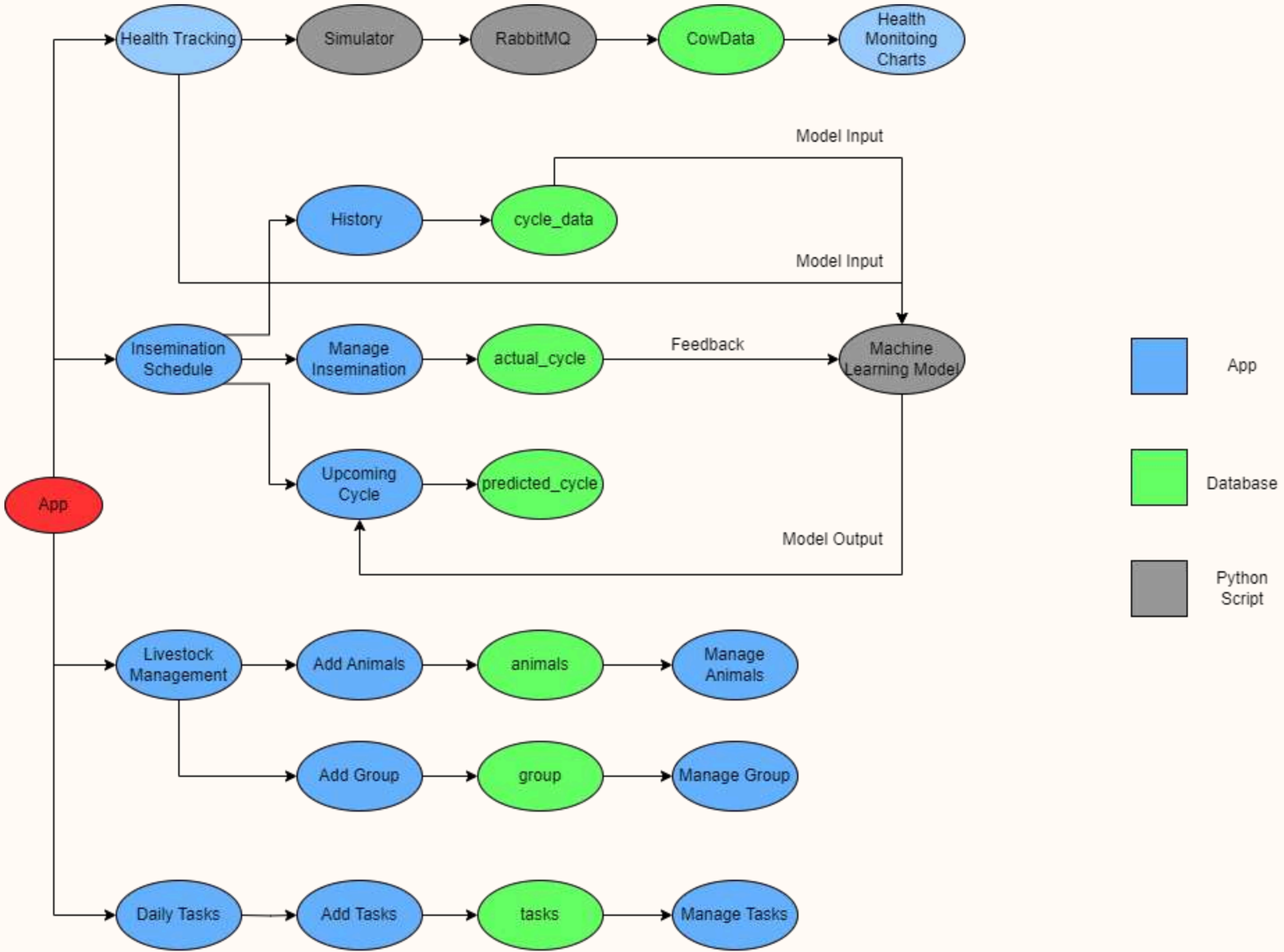
Health Tracking

Insemination Schedule Prediction

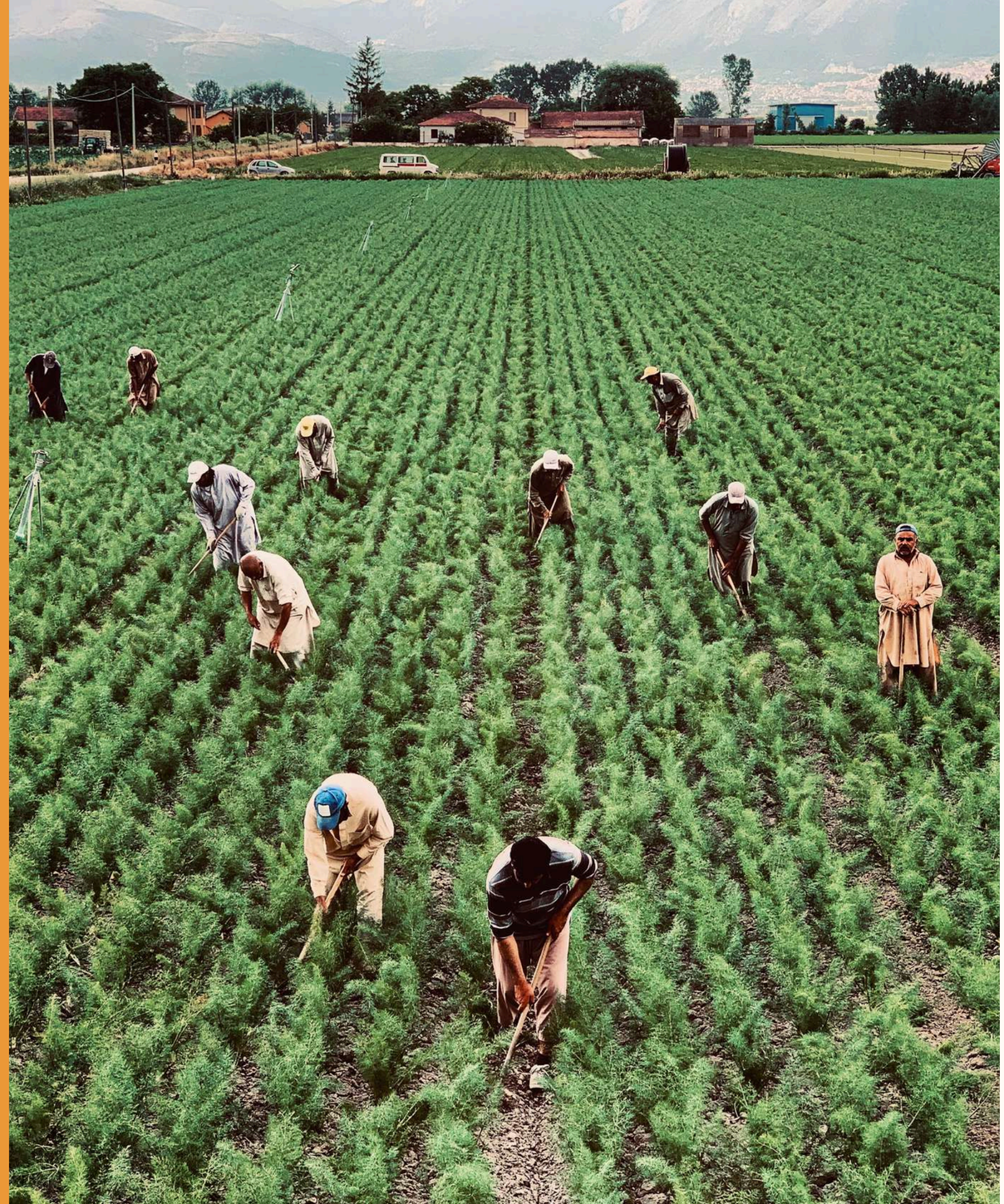
Task and Livestock Management

Business to Business(B2B) Solution

Workflow


Health Tracking
Simulator
RabbitMQ
CowData
Health Monitoing Charts
Model Input
History
cycle_data
Model Input
Insemination Schedule
Manage Insemination
actual_cycle
Feedback
Machine Learning Model
Upcoming Cycle
predicted_cycle
App
Model Output
Livestock Management
Add Animals
animals
Manage Animals
Add Group
group
Manage Group
Daily Tasks
Add Tasks
tasks
Manage Tasks
App
Database
Python Script

Demonstration of prototype



What Makes Us Unique

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- Regional Languages
- Constant Feedback to Improve the Machine Learning Model
- Centralized Data Management
- Algorithm for Estrous Cycle Prediction
- Mobile Application Interface
  - Real-Time Alert Notifications
  - Comprehensive Data Logging
  - Health Monitoring
- Easy integration with existing technology

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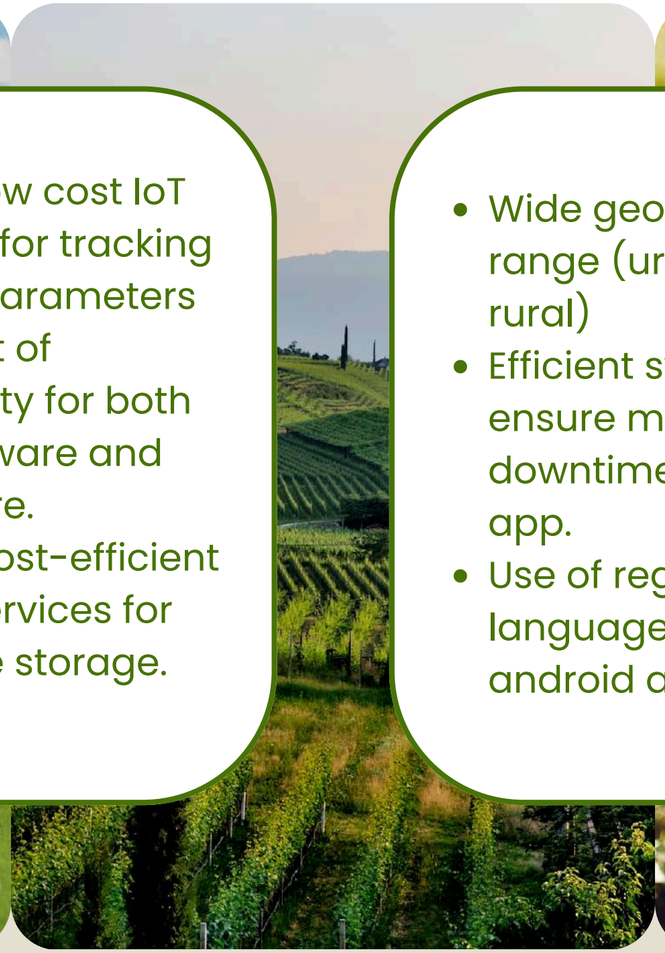
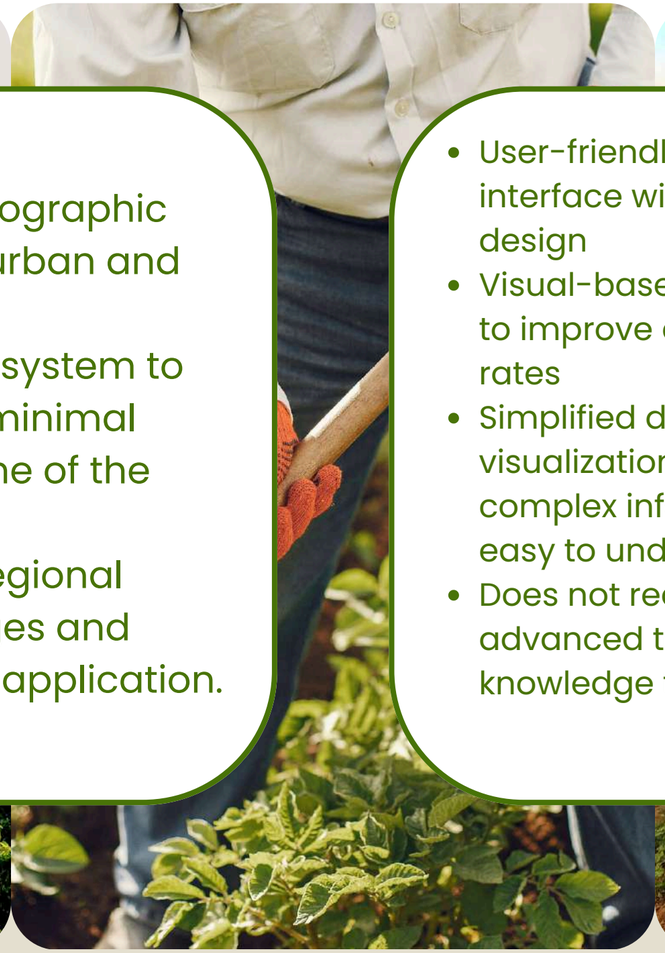
Affordability•Availability•Accessibility

- Use of low cost IoT devices for tracking health parameters
- Low cost of scalability for both the software and hardware.
- Use of cost-efficient cloud services for scalable storage.



- Wide geographic range (urban and rural)
- Efficient system to ensure minimal downtime of the app.
- Use of regional languages and android application.



- User-friendly mobile interface with intuitive design
- Visual-based interfaces to improve adoption rates
- Simplified data visualization makes complex information easy to understand
- Does not require advanced technical knowledge to operate

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Future Scope

- Offline app usability
- Disease diagnosis
- Miniaturized biosensors
- Pregnancy tracking for animals
- Connectivity to vet doctors
- Behavior Analysis of livestock

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Thank You!