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COLLEGE OF ENGINEERING
(AUTONOMOUS)

# FEATHER FARM SOLUTIONS,DAIRY CARE,VEGETABLE FARM

23MCA245 - Mini Project


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AJC23MCA-2047

RMCA2023-25

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# ABSTRCT

1.Vegetable Farm Management System
2.Dairy Farm Management system
3.Feather Farm Solutions

## 1. Vegetable Farm Management System

2.

The Vegetable Farm Management System is an advanced web based platform designed to streamline the operations of vegetable farms. Leveraging Python Django, this system integrates modern technologies to optimize farming practices, enhance productivity, and promote sustainable agriculture. The system encompasses various functionalities such as crop monitoring, inventory management, automated irrigation, and predictive analytic, ensuring efficient farm management and improved crop yield.

***K*ey Features:**

**User Authentication and Authorization:**

1. Secure sign-up, log-in, and log-out functionalities.
2. Password reset and profile management to ensure data security.

**Crop Management:**

1. Track different vegetable crops, their growth stages, and expected harvest dates.
2. Detailed records of planting schedules, crop varieties, and field assignments.

**Pest and Disease Management:**

1. Track occurrences of pests and diseases.
2. Provide guidelines for pest control and disease management.
3. Use machine learning to predict and identify common pests and diseases from images.

**Inventory Management:**

1. Manage inventory for seeds, fertilizers, pesticides, and equipment.
2. Automatic reordering alerts when inventory levels are low.

**Harvest Management:**

1. Track harvesting schedules and yield data.2. Monitor post-harvest processes such as sorting, packaging, and storage.

**Sales and Distribution:**

1. Record sales transactions and manage customer orders.

2. Track distribution channels and delivery schedules.

**Financial Management:**

1. Track expenses and revenues related to farming operations.
2. Generate financial reports and profit/loss statements.

**Farm Activity Scheduling:**

1. Schedule and manage daily farm activities such as planting, weeding, and harvesting.

**Automated Reporting:**

1. Generate reports on crop health, yield, and financial performance.
2. Customization reports for specific metrics and time frames.

**AI-Powered Crop Health Monitoring:**

Use AI to analyze images of crops and identify potential health issues such as nutrient deficiencies, pests, and diseases. Provide actionable recommendations for treatment.

**AI-Driven Market Analysis:**

1. Use machine learning algorithms to analyze market trends and predict demand for different vegetables. Help farmers make informed decisions about planting and sales strategies.

**Benefits:**

**Improved Crop Yield:** Real-time monitoring and data-driven insights help in optimizing crop growth and yield.
**Efficient Resource Management:** Automated irrigation and inventory management reduce waste and ensure optimal resource use.
**Enhanced Decision-Making:** Data analytics provide actionable insights for informed decision-making, improving overall farm management.
**Cost Savings:** Efficient operations and resource management lead to significant cost savings.
**Sustainability:** Emphasis on sustainable practices promotes environmental conservation and long-term farm viability.

**Conclusion:** The Vegetable Farm Management System is a comprehensive solution designed to modernize and optimize vegetable farming operations. By leveraging Python Django and integrating advanced technologies, it ensures efficient farm management, improved crop yield, and sustainable farming practices. This system supports farmers in managing day-to-day operations and provides valuable insights for strategic decision-making, ultimately contributing to the profitability and sustainability of vegetable farms

# .Dairy Farm Management System

The Dairy Farm Management System is a cutting-edge web-based platform designed to streamline and optimize the operations of dairy farms. By integrating advanced technologies such as machine learning, this system aims to enhance productivity, improve animal health, and ensure efficient farm management.

**Key Features:**

**User Authentication and Authorization:**

1. Secure sign-up, log-in, and log-out functionalities.
2. Password reset and profile management to ensure data security.

### Disease Recognition Using Machine Learning:

1. Allow users to upload photos of affected areas on cows.
2. Predict diseases using a trained convolutional neural network (CNN).
3. Provide timely and accurate disease detection to improve animal health.

### Inventory Management:

1. Track feed, medicine, and equipment stock levels.
2. Automatic reordering of supplies when stock runs low.

### Milk Production Tracking:

1. Record daily milk yields for each cow.
2. Analyze milk production data to identify trends and optimize feeding and milking schedules.

### Breeding Management:

1. Keep detailed records of breeding cycles and history.
2. Schedule and track artificial insemination and pregnancy checks.

### Financial Management:

1. Track expenses and revenues related to dairy operations.
2. Generate financial reports and profit/loss statements.

### Farm Activity Scheduling:

1. Schedule and manage daily farm activities such as feeding, cleaning, and milking.
3. Assign tasks to farm workers and monitor task completion.
4.

### Automated Reporting:

1. Generate reports on animal health, milk production, and financial performance.
2. Customization reports for specific metrics and time frames.
3.

### Benefits:

**Improved Animal Health:** Real-time monitoring and disease prediction help in early detection and treatment, ensuring better animal health and productivity.**Enhanced Efficiency:** Streamlined operations through task scheduling, inventory management, and automated reporting reduce manual workload and improve efficiency.

**Data-Driven Decisions:** Data analytic provide actionable insights to make informed decisions, optimizing farm management and boosting productivity.

**Financial Transparency:** Comprehensive financial tracking and reporting provide clear insights into the farm's financial health, aiding in better financial planning and management.

**Sustainability:** Efficient resource management and waste reduction contribute to sustainable farming practices.

**Conclusion:** The Dairy Farm Management System is a comprehensive solution designed to modernize and optimize dairy farming operations. By leveraging advanced technologies, it ensures improved animal health, enhanced productivity, and efficient farm management. This system not only supports day-to-day operations but

also provides valuable insights for strategic decision-making, ultimately contributing to the sustainability and profitability of dairy farms.

# FEATHER FARM SOLOUTIONS

## Introduction:

The poultry farming industry, in particular, demands precise oversight and innovative solutions to maintain high standards of bird care, optimize resource utilization, and streamline operations. This project presents a comprehensive Poultry Farm Management System designed to address these challenges through the integration of advanced machine learning (ML) techniques. Built on the robust Django framework, this system offers a multi-faceted platform that caters to the diverse needs of administrators, stakeholders, employees, and wholesale buyers.

Front-end:HTML,CSS,JavaScript

Back-end:Python Django Framework,MySQL

# 1.Stalkholder

- **Overview Section:**
- **Summary of Chick Health:**
  - Number of healthy chicks, sick chicks, and mortal ones that is daily updates from day 1 to day 40.
- **Upcoming Tasks:**
  - Scheduled tasks like vaccinations and medication in case of sudden disease detection.
- **Alerts and Notifications:**
  - High mortality alerts.
  - FCR hike alerts.
  - Low stock level alerts.
- **Medication Management:**
- **Scheduled Medications:**
  - List of upcoming medications and vaccinations (with dates).
- **Request Medication:**
  - Form to request on-demand medication.
- **Vaccination Schedule:**
  - Detailed schedule for vaccinations (7th, 14th, 20th days).
- **Feed Management:**

Current Feed Levels

- **Status of Feed Levels**: This refers to the current amount of different types of feed available.
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  - **Pte-Starter Feed**: Used from day 1 to day 10.
  - **Starter Feed**: Used from day 11 to day 30.
  - **Finisher Feed**: Used during the last 10 days of the chick's growth period.
- **Request Feed:**
  - Form to request feed from admin.• **Feed Program:**
  - Feed content display
- **Health Monitoring:**
- **Chick Health Status:**
  - Visual representation (charts or graphs) of health metrics.

- **Mortality Reports:**
  - Report and log mortality rates and reasons.
  - Image recognition of diastase of chicks,mortal ones(reason for death)

## • FCR Analysis:

- **Current FCR:**
  - Display the current Feed Conversion Ratio.
- **FCR Trends:**
  - Graphical representation of FCR trends over time.
  - Predict Financial Year-End Metrics Using ML

## • Emergency Contacts:

- **Connect to Veterinarian:**
  - Option to contact a veterinarian in case of emergencies.(redirecting to audio call)

## • Order Management:

- **Bird Lifting details:**

## • Profile Management:

- **Profile Information:**
  - View and update profile information.
  - Login ,registration

Payment to Stakeholder

module that covers the entire process—from entering bank details to generating and downloading payslips or bills

# 2.Wholesale Buyers

Login and registration

## • Dashboard Overview:

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Summary of birds ready for lifting (2 kg).

• Total number of birds across all farm locations.

## • Detailed Status:

- Breakdown by farm location.

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Number of birds ready for lifting at each site.

• Age of birds and expected readiness dates.

## • Correspondence Details:

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Contact information for each farm location.

• Addresses, phone numbers, and email addresses.

## • Order Placement:

•

Option to place orders for desired quantities of birds.

•

Interface for specifying order details.

## • Real-Time Updates:

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Real-time status updates for birds ready for lifting.(farm locations. Basis)

Payment Interface for Wholesale Buyers

Key Features

**Order Summary:**

- Display details of the orders placed, including quantity, price

**Payment Options:**

○ Provide multiple payment methods (e.g., bank transfer, credit card, online payment gateways).

**Payment Processing:**

○ Securely process payments and update the payment status in real-time.

**Payment Confirmation:**

○ Generate and display confirmation of payment.○ Send confirmation emails or notifications to both the wholesale buyer and admin.

**Invoice Generation:**

○ Create invoices or receipts for each payment transaction.
○ Allow download or print options for invoices.

**Transaction History:**

○ Provide a history of payments
ML implementations

Seasonal order management;

Predict seasonal demand and manage orders accordingly.

- **Seasonal Dashboard:** Add a section to the admin dashboard to display seasonal demand forecasts, trends, and recommended inventory levels.
- **Order Management:** Implement features to adjust order quantities and timings based on seasonal forecasts.
- **Alerts & Notifications:** Set up notifications to alert admins of upcoming high-demand periods or necessary inventory adjustment

# 3.Admin

- **Finance Management:**
Track income and expenses, generate reports.
- Salary **Management:**
provide salary to employee,share to stalkholder ,receive payment from wholesale buyer.
- **Payments:**
Manage and automate payments.
- **Employee Management:**
Maintain records and track performance.(crud)
- **Attendance Tracking:**
Monitor employee attendance.
- **Low Stock Alerts:**
Receive alerts for low feed or supply levels.
- **On-Demand Requests:**
Allow medication requests.
- **FCR Analysis:**Calculate and analyze feed efficiency.on behalf of admin to cross check the fcr obtained by stalkholder are same
- **Bird Lifting Management:**
Manage bird lifting processes.
ML implementations
- **Finance Management:**
Use forecasting models to predict financial trends.
- **Payments:**
Apply anomaly detection to identify fraudulent transactions and automate processing.
- **Employee Management:**
Analyze performance using classification and clustering models.

(ML) can be used to identify the best-performing employees based on various performance metrics. Here's how you can implement ML to evaluate and rank employee performance:

# 4.Employee

### Employee Registration and login

- Registration process for new employees.

### Leave Management

- Electronic leave applications with types (sick, vacation).

### Attendance Tracking.

### Task Management

- Task assignment and tracking.

Reminders and deadlines for tasks.

### Training and Development

- Access to training materials and session tracking.

### Performance Evaluation

- Performance reviews, feedback provision.

### Communication Tools

- Team meeting alerts mentioning date and time.

### Shift Scheduling

- Management of shift schedules, including night shifts.

Employee notifications for upcoming night shifts.

### Feedback Mechanism

- Open feedback on workplace conditions for each location.

### Monthly Salary Payment Feature

**Salary Dashboard:**

- Summary of current month's salary status and breakdown.

**Payment History:**

- Access to historical salary payments.

**Payment Notifications:**

- Notifications for processed salary payments.

**Payroll Details:**

- Detailed breakdown of salary components.

**Document Access:**

- Downloadable digital payslips in PDF format.

# Advantages

**Enhanced Operational Efficiency**

1. Streamlined processes for medication, feed management, and task scheduling.
2. Automated alerts and notifications ensure timely actions and reduce manual oversight.

**Improved Health Monitoring**1. Detailed health metrics and mortality reports allow for better tracking and management of chick health.

2. Visual representation of health data aids in quick decision-making.

**Predictive Insights with ML**

1. Accurate FCR analysis and trends help in optimizing feed usage and improving financial outcomes.
2. Seasonal order management forecasts demand, aiding in inventory and resource planning.
3. Performance analysis of employees ensures better workforce management and productivity.

### Comprehensive Financial Management

1. Integrated finance and salary management modules simplify tracking of income, expenses, and payments.
2. Automated payment processing reduces administrative burden and ensures accuracy.

### Improved Stakeholder Communication

1. Real-time updates and detailed status reports keep stakeholders informed and engaged.
2. Emergency contact options provide quick access to veterinarians and support in critical situations.

### Efficient Order Management

1. Detailed order placement and tracking interface for wholesale buyers ensures smooth transactions.
2. Real-time status updates on bird readiness streamline the lifting process and improve buyer satisfaction.

### User-Friendly Interface

1. Intuitive design and easy navigation enhance user experience for all stakeholders.
2. Accessible profile management and registration features ensure smooth on boarding and account maintenance.

### Robust Data Security

1. Secure payment processing and transaction history tracking protect sensitive financial information.
2. Comprehensive profile management ensures data privacy and integrity for all users.

### Scalability and Flexibility

1. Modular design allows for easy integration of additional features and scaling as the business grows.2. Customization interfaces and functionalities cater to the specific needs of different user roles.

### Long-Term Sustainability

1. Data-driven decision-making supports sustainable growth and improved resource utilization.
2. Continuous monitoring and predictive analysis help in maintaining high standards of bird care and farm management.

# Conclusion:

FEATHER FARM SOLUTIONS" is an innovative and comprehensive Poultry Farm Management System that leverages advanced machine learning (ML) techniques to address the complexities of modern poultry farming. By integrating robust features within the Django framework, the system provides a multi-faceted platform catering to the diverse needs of administrators, stakeholders, employees, and wholesale buyers.

The platform enhances operational efficiency through precise health monitoring, feed and medication management, and automated alert systems. The integration of ML for FCR analysis, seasonal order management, and employee performance evaluation offers predictive insights and data-driven decision-

making capabilities.
Key features such as real-time updates, emergency contact options, order management, and a detailed payment interface ensure seamless coordination between stakeholders and wholesale buyers. The administrative tools for finance and salary management, employee tracking, and bird lifting processes streamline operations and improve overall productivity.
With its user-friendly interface, robust back-end, and intelligent use of ML, "FEATHER FARM SOLUTIONS" stands out as a state-of-the-art solution, poised to transform the poultry farming industry by optimizing resources, enhancing bird care, and simplifying management tasks. This system not only supports the immediate needs of poultry farms but also positions them for sustainable growth and success in the long term.