AMAL JYOTHI
COLLEGE OF ENGINEERING
(AUTONOMOUS)

DAIRY CARE SYSTEM

23MCA246 - Main Project

Scrum Master

Amal K Jose

Assistant Professor

Department of Computer Applications

Krishnendu Lal

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Git url: https://github.com/KRISHNENDULAL/Dairy_Care_System.git

E Mail: krishnendulal2025@mca.ajce

DEPARTMENT OF
COMPUTER APPLICATIONS

ABSTRACT

Dairy Care System

Objective:

The Dairy Care System is an advanced web application designed to revolutionize the management and operation of dairy farms. This system empowers farm owners, customers and delivery agents to seamlessly manage livestock, track milk production, monitor health records, oversee product delivery, and streamline various farm operations. Built using Django, a robust and flexible Python-based web framework, the Dairy Care System integrates cutting-edge technologies like AI and Machine Learning to enhance efficiency, productivity, and profitability. This platform provides a comprehensive suite of tools to address every aspect of dairy farming, ensuring better decision-making, improved resource utilization, and higher customer satisfaction.

Key Features:

- **User Authentication and Role Management:**
  - Secure login and registration for various roles (Admin, Farm Owner, Employee, Customer).
  - Role-based access control for tailored user experiences and permissions.
  - Two-factor authentication (2FA) for enhanced security.
- **Sales and Distribution:**
  - Real-time tracking of product deliveries with integrated GPS.
- **Product and Inventory Management:**
  - Advanced inventory tracking with notifications for low stock levels.
  - Dynamic market pricing based on supply-demand analytics.
- **Health and Productivity Management:**
  - Machine Learning-based disease prediction and health issue detection.
  - Milk yield prediction and analytics for future planning.
- **Virtual Assistance and Customer Engagement:**
  - AI-powered chatbot for customer queries and suggestions.

- **Payment Processing:**
  - Seamless integration with payment gateways (Razor Pay) for online transactions.
  - Secure offline payment processing with Cash on Delivery options.
- **Feedback and Analysis:**
  - Customer feedback submission for continuous improvement.
- **Delivery Management:**
  - Real-time updates for customers on delivery status.
- **Analytics and Reporting:**
  - Interactive dashboards for farm owners and admins to visualize sales trends, and delivery agent performance.
  - Data-driven insights into customer buying behaviour and product popularity.

Technologies and Tools Used:

- **Frontend:** HTML, CSS, JavaScript for enhanced interactivity.
- **Backend:** Django framework.
- **Database:** MySQL with cloud-based storage for scalability.
- **Machine Learning:** TensorFlow and Scikit-learn for predictive analytics (health, disease detection).
- **AI:** Chatbot and dynamic pricing.
- **Route Optimization:** AI-driven dynamic route planning for delivery management.
- **Operating System:** Windows.
- **IDE:** Visual Studio Code, PyCharm.

The Dairy Care System redefines the landscape of dairy farming by incorporating state-of-the-art technologies to deliver a comprehensive, intelligent, and user-friendly platform. With its innovative features, such as predictive analytics, AI-driven virtual assistance, and dynamic market strategies, the system empowers farm owners to optimize operations, enhance productivity, and ensure superior customer experiences. By addressing every critical aspect of dairy management, this platform paves the way for a sustainable and digitally advanced future in dairy farming.