



Sri Lanka Institute of Information Technology

Information Technology Project

Year2, Semester 2 - 2024

Project Charter

Title of the Project :	Dairy Farm Management System	
Campus & Batch :	(leave blank till you are allocated to a batch)	Group No: T049
Development Technology :	(MERN Stack) FE: React BE: Express, Node.js DB: MongoDB	

Description of the Project:

Nevil Nutri Feeds (Pvt) Ltd is a diversified dairy farm specializing in cattle breeding, feed manufacturing, and retailing of meat and dairy products. As a comprehensive operation, they manage and maintain cows, while also producing and selling a variety of dairy products including yoghurts, curd, ice cream, and butter.

There is a significant market gap in the production of dairy-made products, especially milk, where the high demand isn't met by the current Sri Lankan market. Local Dairy farms with manual record-keeping and limited data insights, struggle to optimize milk production, manage herd health efficiently, and navigate market access. A web-based dairy farm management system is needed to provide real-time data, analysis tools, and communication features, empowering farmers to improve profitability, animal welfare, and market connectivity.

The proposed dairy farm management system is a web application designed to address the aforementioned challenges. This system integrates real-time data collection, analytics tools, and communication features to enhance various aspects of dairy farm operations, increasing the Farm's efficiency significantly. By automating record-keeping processes and providing farmers with valuable insights, the system aims to optimize milk production, improve herd health management, and facilitate efficient market access. The ultimate goal is to provide farms with the digital tools they need to enhance profitability, promote better animal welfare, and establish a stronger presence within the market. Through this integration of technology into traditional farming practices, the dairy farm management system will directly contribute to the overall efficiency and sustainability of the Sri Lankan dairy industry.



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Details of the Group Members: *(Provide the details of the group leader in the first row)*

	Name with Initials (Surname first)	Registration Number	Contact Phone Number	Email
1.	L.K.R.S. JAYASURIYA	IT22891518	0763458607	it22891518@my.sliit.lk
2.	RANAWEERA R A D S	IT22884510	0701260526	it22884510@my.sliit.lk
3.	PIYARISI T D	IT22326690	0772485225	it22326690@my.sliit.lk
4.	PINTO M J I	IT22149558	0740043235	it22149558@my.sliit.lk
5.	WICKRAMASOORIYA J D A S	IT22347244	0704012965	it22347244@my.sliit.lk
6.	KAHATAPITIYA K R D M	IT22080394	0715353455	it22080394@my.sliit.lk
7.	MANAMPERI S A	IT22004772	0715581536	it22004772@my.sliit.lk
8.	DILSHAN J M H	IT22266828	0705559052	it22266828@my.sliit.lk

List of Functions Developed by the Group Members:

	Name with Initials	Description of the Function
1.	L.K.R.S. JAYASURIYA	<p>The Finance sub system manages all the finances of the dairy farm and shows data on profits, losses and other financial data needed to make major decisions.</p> <ul style="list-style-type: none">Budgeting tool which can create and manage budgets and set restraints/goals that help make sure the company's is within these financial boundaries.Income/Expenses tracker which automatically records transactions from the surrounding functions as well as user entered transactions to keep track of the company's financial status.Employee Payroll Manager to manage employee salaries, deductions, taxes, OT and bonuses etc.Produce analytical reports that provide valuable insights into financial usage patterns within the finance subsystem.
2.	RANAWEERA R A D S	<p>The Veterinary sub system simplifies Breeding, Registration, and Health Records. Veterinarians manage breeding, update lifelong cow records, and track health efficiently. The system provides control for Veterinary Surgeons and timely reminders.</p> <ul style="list-style-type: none">Maintain accurate cow records for life with user-friendly search, filters. Veterinary Surgeons manage detailed cow profiles.



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		<ul style="list-style-type: none">• Veterinarians easily choose breeding cows, handle inseminations, and control breeding plans efficiently.• Track health, get Vaccination and Deworming reminders, download PDF reports. Veterinary Surgeons control the health records of each cow.
3.	PIYARISI T D	<p>The Supplier and Inventory Management subsystem manages inventory and suppliers, facilitating the sending of invoices to the financial subsystem. Usage tracking helps to make informed decisions regarding the inventory and its suppliers.</p> <ul style="list-style-type: none">• Efficiently place orders, track their status and deliveries, and make dynamic adjustments based on evolving requirements.• The Supplier Management feature involves regular updates to all information related to suppliers.• Inventory Control includes monitoring item stock levels, implementing automated reorder processes when stocks run low.• Integrate financial processes by passing the supplier payment details to the financial subsystem to ensure smooth operations.• Generates analytical reports to offer insights into usage patterns.
4.	PINTO M J I	<p>The Grazing Management subsystem is designed to enhance cattle grazing efficiency through integrated functions. It combines Pasture Inventory, Cattle Allocation, and Rotation Alerts to streamline strategic planning, prevent overgrazing, and maximize forage utilization.</p> <ul style="list-style-type: none">• Efficient Water Management is ensured through real-time monitoring of grazing lands, promoting cattle hydration and preventing water-related issues. The system also facilitates timely tracking of manure and disposal activities, maintaining records for effective land management and compliance with sustainability practices.• Additionally, the subsystem incorporates an Effluent Control module, managing data for waste control. This ensures compliance with environmental regulations and promotes sustainable waste management practices on grazing lands.• This subsystem optimizes cattle grazing by integrating key functions, promoting sustainability, and enhancing overall herd well-being and productivity.
5.	WICKRAMASOORIYA J D A S	<p>The Milking Management subsystem optimizes dairy farm milking operations. From strategic milking session scheduling, quality checking the yield to recording storage data after storing milk in refrigerated tanks, this subsystem is organized to fully cover the whole milking process.</p>



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		<ul style="list-style-type: none">• Schedule Milking Session feature allows planning milking sessions in advance for efficient farm operations.• Record Milking Data component will be used for storing milking data, including milk yield, milking duration, any observed irregularities, etc.• Quality Check Logging logs result from the initial milking quality checks, such as temperature and bacterial content as well as the final quality checks before sending to production.• Update Storage feature records the quantity of milk stored in on-farm refrigerated tanks.
6.	KAHATAPITIYA K R D M	<p>The Employee Management System centers on Employee Registration, Work Hours Tracking, and Task Entry and Management for collaboration. Admins have separate access to handle personal info and salary details.</p> <ul style="list-style-type: none">• The system provides separate access levels for administrators and users. Admins can manage personal information, including name and contacts, and track salary details.• Efficiently keep track of how long employees work with a system that captures and manages their work hours.• In Task Management, admins assign tasks with details and use an admin dashboard for clear visibility and updates, enhancing collaboration.
7.	MANAMPERI S A	<p>The Sales and Analytics sub system integrates inventory management, sales processes, and data analytics to optimize dairy farm operations by ensuring real-time product availability, smooth order processing, and efficient delivery logistics. Additionally, an analytics module provides crucial insights from sales data helping to make strategic decisions.</p> <ul style="list-style-type: none">• The Inventory Management system efficiently stores, updates, and deletes dairy products, maintaining an organized record and enabling seamless management of product details.• The Sales Management and Distribution sub system ensures smooth order processing, efficient delivery logistics and gives a satisfying sales experience.• The Sales Data Analyzing module provides useful insights derived from reporting and analytics and gathers it into a centralized database which helps transform sales data into valuable information to make crucial business decisions.



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8.	DILSHAN J M H	<p>The Product Management subsystem handles everything about the products from raw material to final product, utilizing the resources efficiently to produce high quality market ready products.</p> <ul style="list-style-type: none">• Monitor all the activities in raw milk to processed milk production and the dairy products production line.• Implement accurate, real-time stock tracking.• Establish 3-phase quality control for raw milk, processed milk, and dairy products to maintain high standards.• Ensure product efficiency through continuous analysis of nutritional content, customer feedback, cost-effectiveness, and buying patterns.• A platform to Introduce, test, and provide a comprehensive overview of new products.• Manage product storage, release schedules, and monitoring safety/temperature parameters.• Inspect returned/expired products and develop procedures for managing, disposing, and reprocessing.
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