

Chapter 1

Introduction

1.1 Introduction:

The *Dairy Management System* is a web-based application developed in Python, designed to streamline and automate the milk collection process from various farmers in a dairy network. This user-friendly platform assists the dairy management team in handling daily operations with ease and efficiency.

The application manages the entire milk collection workflow—from farmer registration and milk quantity tracking to report generation for managerial decision-making. It serves as a vital link between rural milk suppliers and the central dairy management, promoting better communication and coordination.

The primary mission of this project is to bridge the gap between rural farmers and dairy management through a digital platform, thereby encouraging the growth and modernization of the dairy industry. The system enables the registration of suppliers and buyers, and maintains records of purchases, sales, and other transactions critical to day-to-day operations.

Titled “**DAIRY MANAGEMENT SYSTEM**” this project is a pilot initiative aimed at supporting a new milk distribution center set to launch in the city next month. With plans to collect milk from multiple sources and distribute it to various buyers, the management requires a robust web application to manage operations efficiently and scale seamlessly with growth.

1.2 Existing system

When we analyse the Manage about this field then we face that they working with manual.

The existing system for dairy management System involves a manual process where milk is collected from dairy farms and transported to processing facilities for further processing. The manual system involves various steps, including:

s: Milk is collected from dairy farms by milk collectors, who transport the milk in cans or containers to the nearest dairy processing facility.

However, this manual system has several limitations including:

- The manual system requires more time for processing.
- It requires more critical work.
- The manual system has more error.
- Difficult to maintain.
- Immediate response to the queries is difficult and time consuming.
- More man power needed.
- Duplication of entry.
- Manual system shows of the particular place.

To overcome these limitations, dairy milk collection systems have been developed, which use technology to automate and streamline the milk collection process and provide better data insights.

1.3 Need and Scope of Computer System

1.3.1 Need :

The traditional method of milk collection in rural areas often involves manual record-keeping, which is time-consuming, error-prone, and inefficient. Managing multiple farmers, buyers, and transactions manually can lead to data loss, miscommunication, and discrepancies in payments or milk quality.

To address these challenges, there is a strong need for a digital solution that automates the milk collection process, maintains accurate records, and ensures transparency between farmers and dairy management. A centralized web application helps in maintaining consistency, saving time, and improving the overall productivity of the dairy operations.

Key reasons for the need:

- To automate and streamline milk collection and distribution processes.
- To ensure accurate record-keeping of milk quantity, supplier details, and buyer transactions.
- To enhance communication between rural farmers and the central dairy office.
- To eliminate manual errors and improve operational transparency.
- To support the scalability of a growing milk distribution network.

1.3.2 Scope:

The Dairy Management System is designed as a full-fledged web application that can be deployed in any milk collection or distribution center. Its modular design allows it to scale from small dairy farms to large cooperative networks. The system will be used by dairy staff, suppliers, and management to handle daily tasks with ease.

Functional Scope:

- Farmer and buyer registration and profile management.
- Daily milk collection entry with quantity, fat content, and pricing details.
- Purchase and sales tracking with automated calculation of payments.
- Generation of detailed reports on milk collection, supplier earnings, and sales.
- Dashboard for management to monitor overall performance.
- Secure login system for authorized access.

Chapter 2

Proposed System

2.2Objective:

The main objective of this website is to automate the complete process of the Dairy Distributors office and bring ease between each dairy managers and the system admin. The Objectives are as follow:

- To provide a more efficient, reliable, and transparent system for the collection and distribution of milk, benefiting all stakeholders involved in the dairy supply chain.
- The web application has a user-friendly interface and is easy to use.
- To improve the quality, efficiency, and traceability of the milk collection process in the dairy industry. To Reduce the manual work and time consumption.

2.3 Requirement Engineering

Before developing the Dairy Milk Collection System, it was important to clearly understand what the system should do, who will use it, and how it should perform. This stage—called Requirement Engineering—helped us define all the key expectations and functionalities of the system so that it can be built to solve real problems faced by dairy management.

1. Functional Requirements

These are the basic features the system must have for it to do its job properly:

- **Registering Farmers and Buyers**

The system should allow dairy staff to add new farmers (milk suppliers) and buyers with their basic details like name, contact info, and address.

- **Milk Collection Entries**

Every day, milk quantities collected from each farmer should be recorded along with fat content, price per liter, and date.

- **Sales and Purchase Records**

There should be an easy way to record how much milk was sold and to whom, along with prices and total sales.

- **Reports Generation**

The system should generate reports for daily milk collection, supplier payments, and monthly summaries to help management make better decisions.

- **User Login and Roles**

The system should allow login for admins and staff, where each role has access to specific parts of the system.

- **Dashboard Overview**

A simple dashboard should show key statistics like total milk collected, number of suppliers, and total earnings.

2. Non-Functional Requirements

These are not about what the system does, but about how well it does it:

- **User-Friendly Interface**

The system should be easy to use, especially for staff who may not be very tech-savvy.

- **Fast and Efficient**

It should not take long to enter data or load reports, even as more records are added over time.

- **Secure**

Only authorized users should be able to log in and access data. Sensitive information must be protected.

- **Reliable**

The system should work consistently without crashing or losing data.

- **Scalable**

As the dairy expands and adds more suppliers, the system should be able to handle the extra data without slowing down.

- **Easy to Maintain**

If updates or changes are needed later, the system should be easy to update without major rewrites.

3. User Requirements

Understanding what the users expect from the system is just as important:

- **For Admins/Managers**

They should be able to manage users, suppliers, and view all reports and transactions.

- **For Data Entry Staff**

They should have access to add daily milk entries, update records, and generate reports—but not delete critical data.

4. System Requirements

To run this system smoothly, here's what we need:

- **Hardware:**

A computer with at least 4GB RAM

100 GB hard disk space

Internet connection (for cloud deployment)

- **Software:**

Python (with Flask)

MySQL or MariaDB

HTML/CSS/JavaScript for frontend

2.4 Requirement Gathering

Requirement Gathering is the first and most important phase in the software development lifecycle. It involves collecting all the necessary information from stakeholders to understand their needs and expectations from the system. For the *Dairy Milk Collection System*, this phase focused on identifying the core functionalities and challenges faced in the traditional milk collection process.

1. Stakeholders Involved

- **Dairy Management Team** – Responsible for overall operations, planning, and reports.
- **Data Entry Operators** – Handle day-to-day data entry for milk collection and transactions.
- **Farmers (Suppliers)** – Rural milk suppliers whose milk is collected and paid for.
- **Buyers/Distributors** – Individuals or businesses purchasing milk in bulk.
- **System Developers** – Responsible for designing and building the software.

2. Techniques Used for Gathering Requirements

• Interviews

Conducted informal discussions with dairy staff and management to understand their daily tasks, problems with manual systems, and expectations from automation.

• Observation

Visited a local milk collection center to observe how milk is measured, recorded, and payments are calculated manually.

• Questionnaires

Shared simple questionnaires with dairy operators to collect input on what features they would find useful (e.g., automated reports, daily summaries, payment tracking).

• Document

Analysis

Reviewed existing logbooks, registers, and payment records to identify how data is currently stored and what key information must be captured digitally.

Chapter 3

System Analysis

System Analysis:

- **Data Flow Diagram :**

DFD is also known as Bubble Chart Its purpose as to classify system requirement and identifying major transformation that will become program in a system design. So, it is a starting point of the design phase that functionality decomposes the requirements specifications down to the lowest level of the detail A DFD consists of series of bubbles joined by lines. The bubble represents data transmission and line represents data flow in the system.

- **Entity Relationship Diagram :**

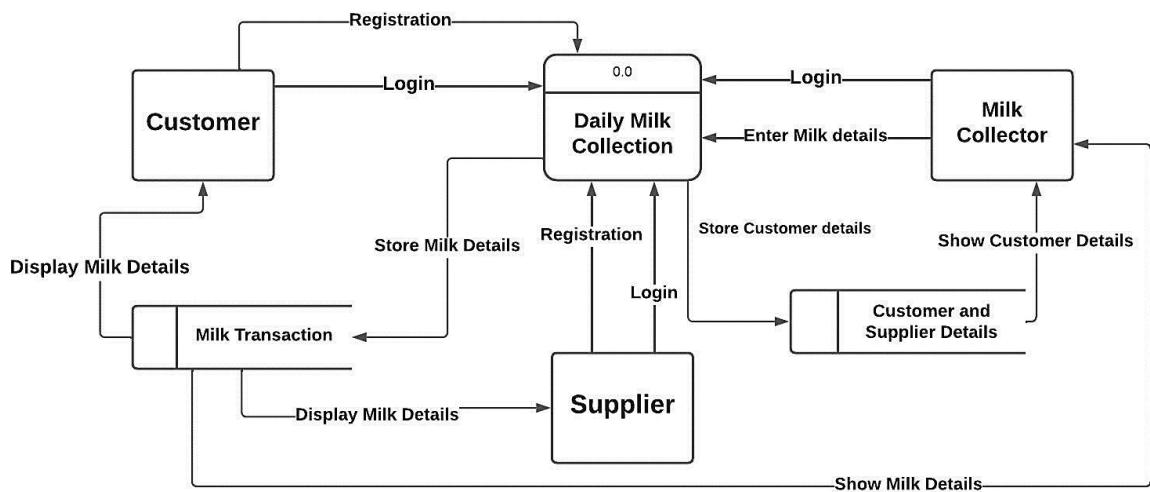
Entity relationship diagram graphically represent overall logical structure of database which includes interactions between entity of various ways Entity relationship (ERD) illustrates the logical structure of database Entity relationship ERD's in 1976 since then Charles Bachman and James Martin have added some slight refinements to the basic ERD principles.

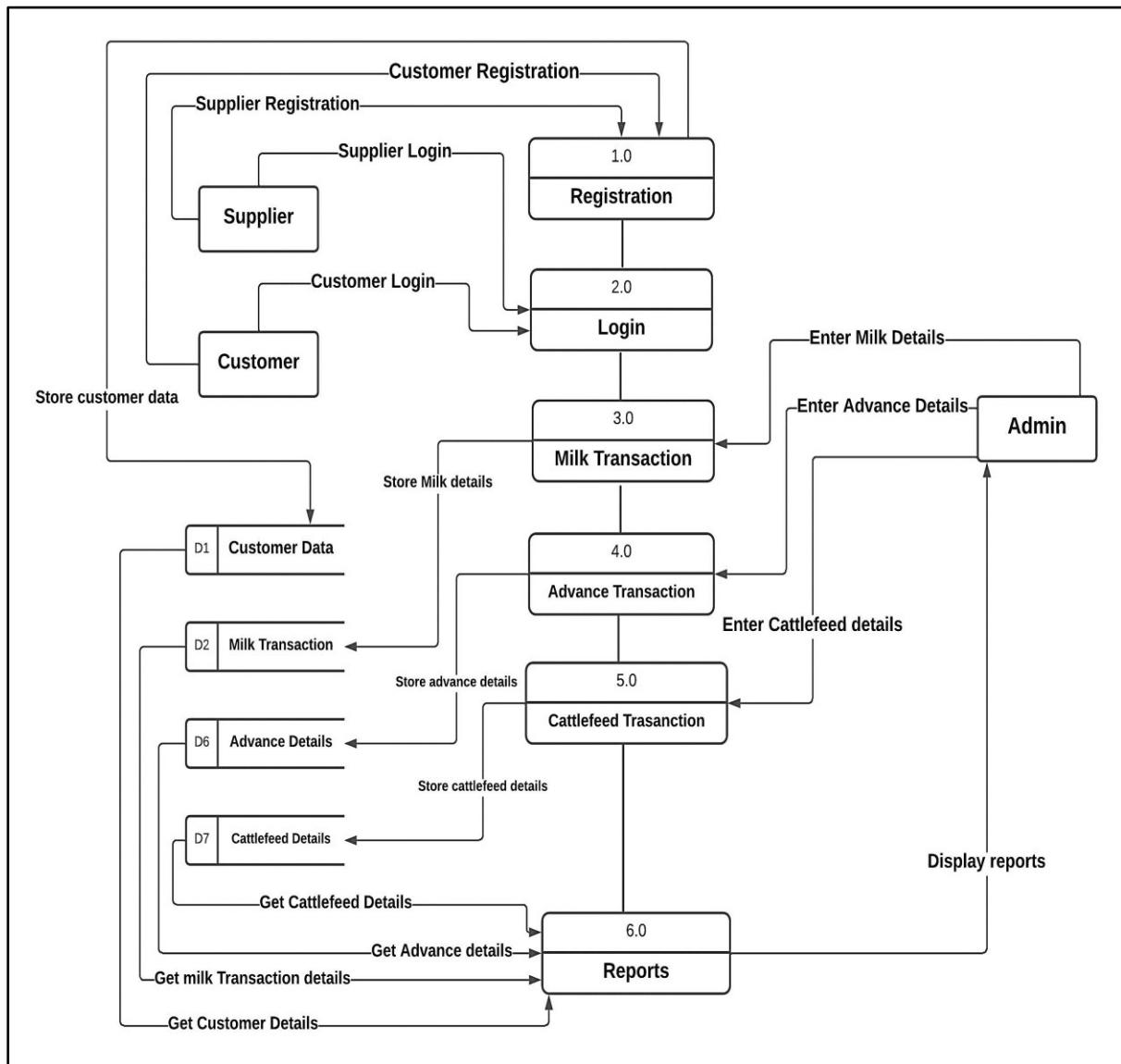
- **Unified Modelling Language Diagram :**

Unified Modeling Language (UML) is a standardized modeling language used in software engineering to visually represent a system's design. It provides a set of graphical notations that help communicate and document various aspects of a software project. UML diagrams serve as a visual communication tool, allowing developers, stakeholders, and other project members to better understand the architecture, behavior, and structure of a software system. The choice of which diagrams to use depends on the specific needs and focus of the project.

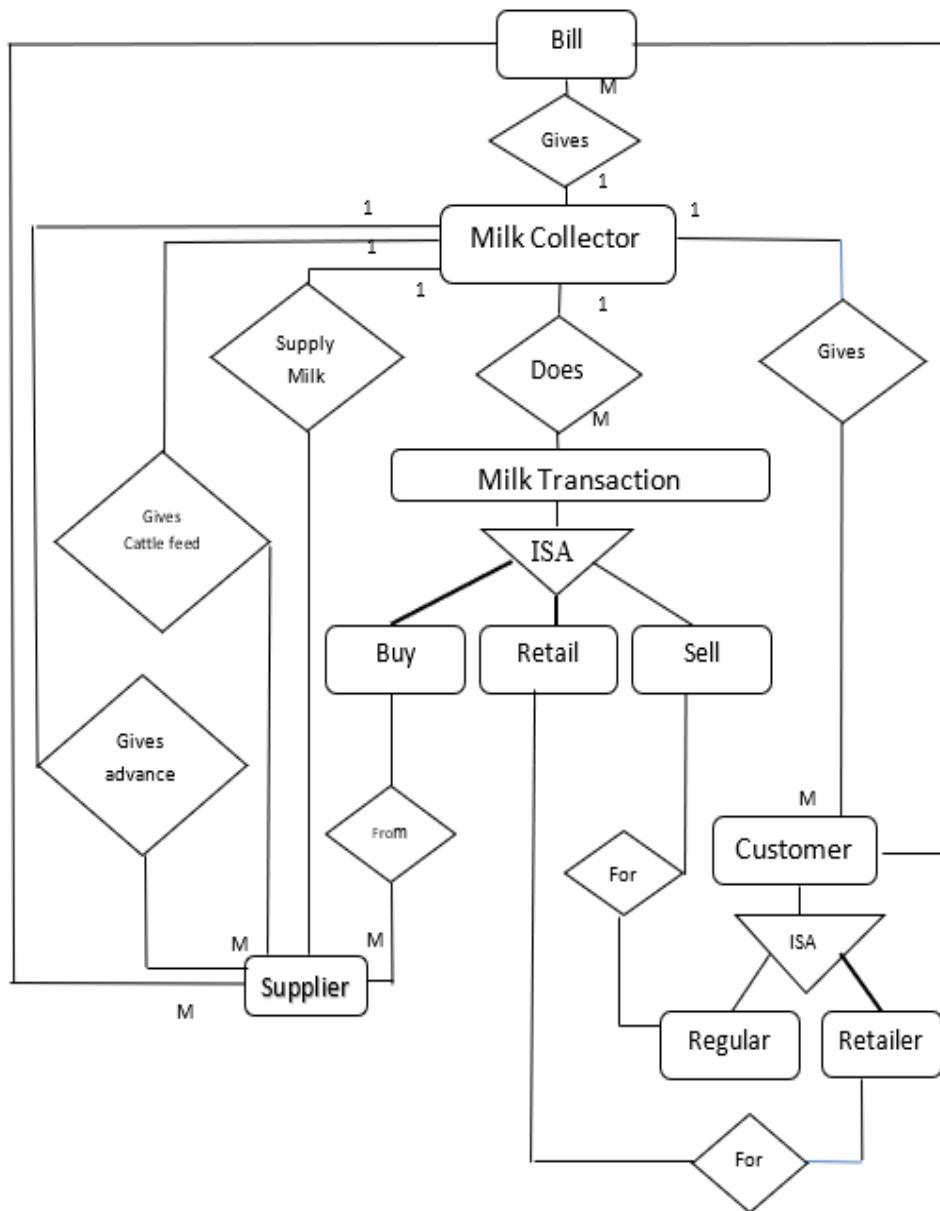
3.1.1 DFD

0th Level:



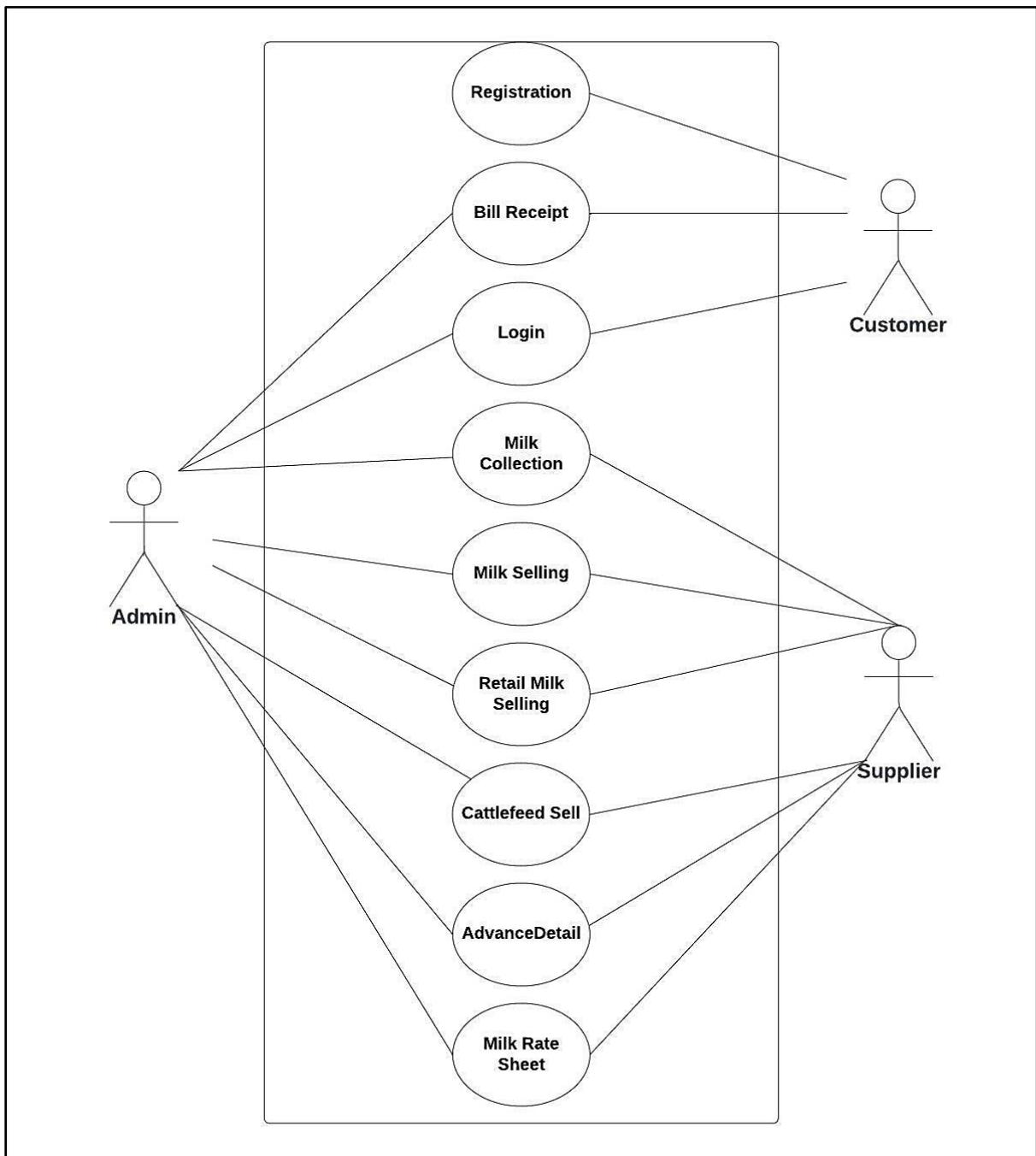
1st level :

3.2 Entity Relationship Diagram:



3.3 Unified Modelling Language(UML):

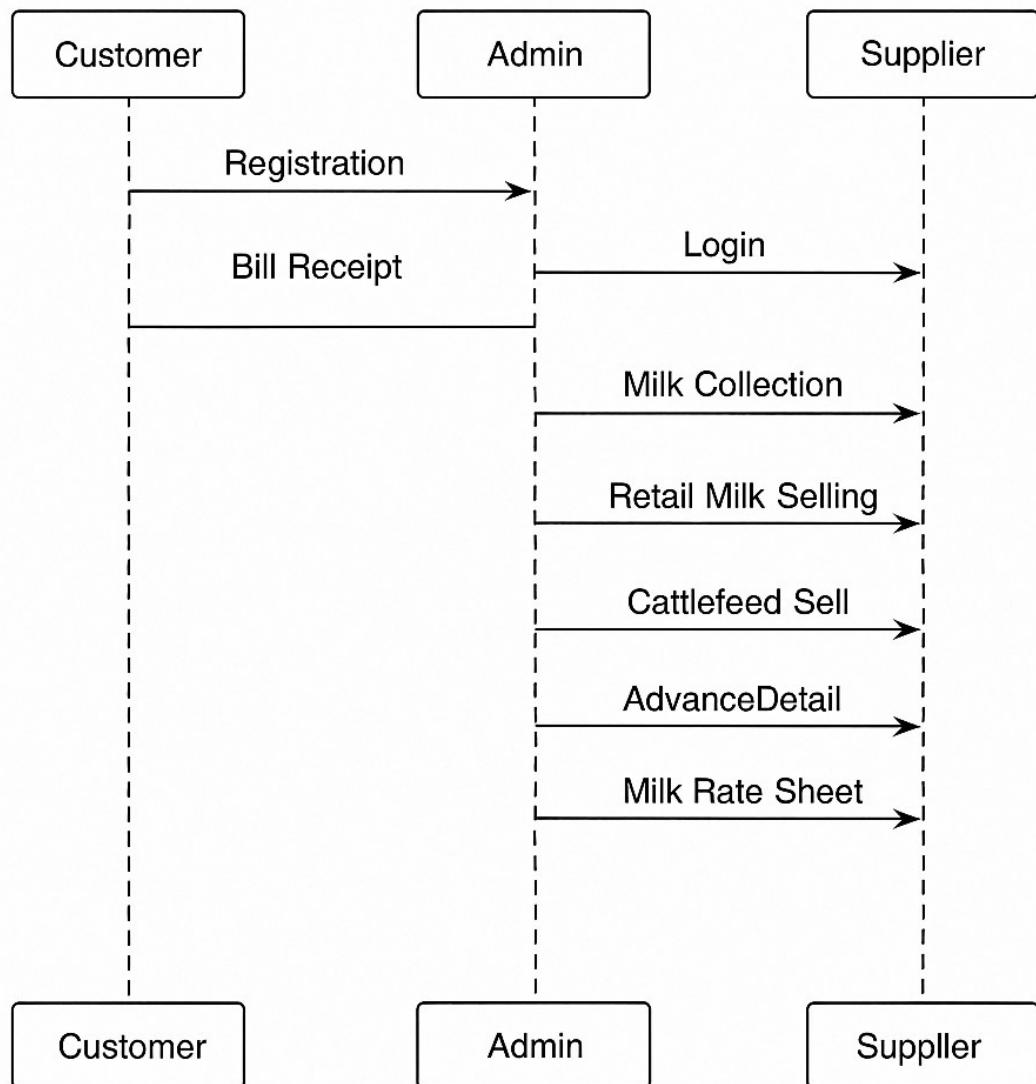
3.3.1 Use Case Diagram:

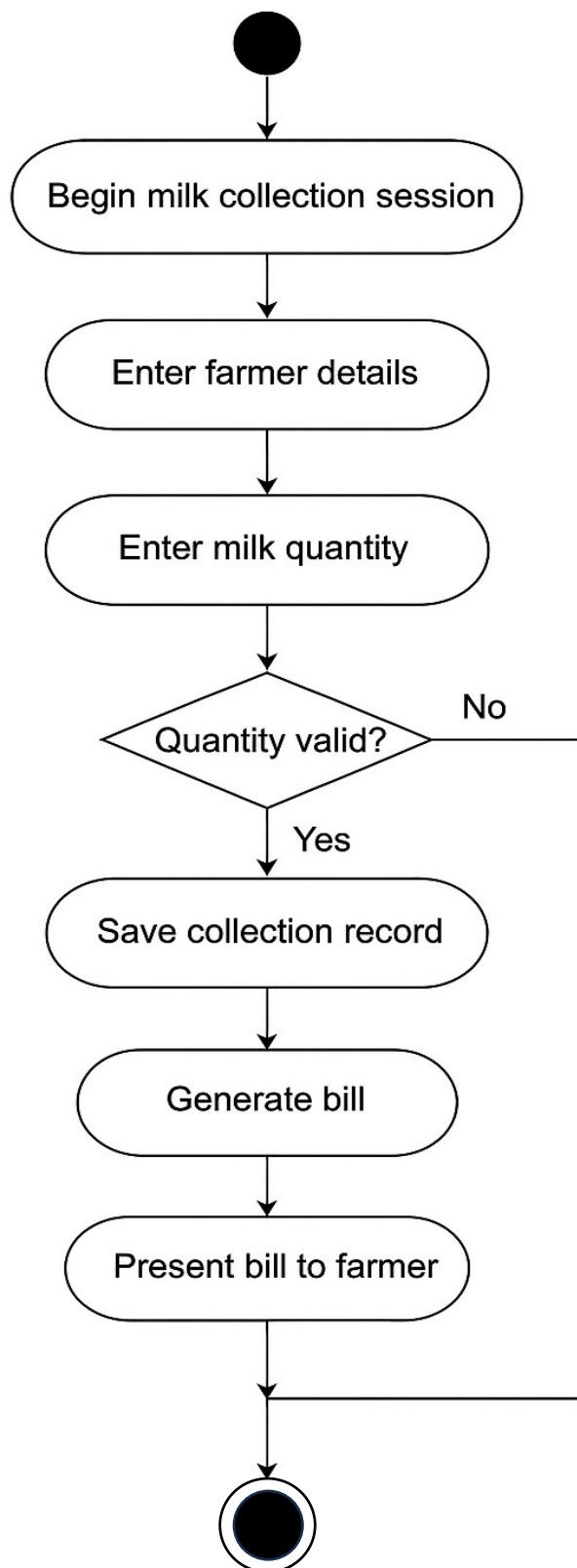


3.3.2 State Diagram:



3.3.3 Sequence Diagram:



3.3.4 Activity Diagram:

Chapter 4

System Design

4.1 Database Design:

Table Name: register

Field Name	Data Type	Description	Constraint
userid	Int	User Id	Primary key, auto_increment, Not null
name	Varchar(40)	User full name	Not null
address	Varchar(50)	User address	Not null
pincode	Int	Pincode of user	Not null
phone	Bigint	Phone of user	Unique
cust_type	Varchar(20)	Customer type	Not null
password	Varchar(10)	Password of user	Not null

Table Name: collection

Field Name	Data Type	Description	Constraint
day	Date	Date of milk collection	Default (crudate()), Not null
userid	Int	Id of milk Supplier	Null
daytime	Varchar(20)	Daytime of milk supply	Not null
milk_type	Varchar(20)	Type of a milk	Null
quantity	Float	Milk quantity	Not null
fat	Float	Fat of milk	Not null

snf	Float	Snf of milk	Not null
degree	Float	Milk degree	Not null
rate	Float	Rate of milk	Not null
amount	Float	Milk amount	Not null

Table Name: selling

Field Name	Data Type	Description	Constraint
day	Date	Date of milk selling	Default (crudate()), Not null
userid	Int	Id of milk buyer	Null
daytime	Varchar(10)	Daytime of milk purchase	Not null
Milk type	Varchar(20)	Type of a milk	Null
quantity	Float	Quantity of milk	Not null
rate	Float	Rate of milk	Not null
amount	Float	Amount of selling milk	Not null

Table Name: retailsell

Field Name	Data Type	Description	Constraint
day	Date	Date of milk selling	Default (crudate()), Not null
name	Varchar(50)	Name of milk buyer	Null

daytime	Varchar(10)	Daytime of milk purchase	Not null
milk_type	Varchar(20)	Type of a milk	Null
quantity	Float	Quantity of milk	Not null
rate	Float	Rate of milk	Not null
amount	Float	Amount of selling milk	Not null

Table Name: Cattlefeedsell

Field Name	Data Type	Description	Constraint
day	Date	Date of cattlefeed selling	Default (crudate()), Not null
userid	Int	Id of milk supplier	Not Null
name	Varchar(30)	Name of milk supplier	Not null
feed_name	Varchar(40)	name of cattlefeed	Not Null
sacks	int	Number of sacks of cattlefeed	Not null
rate	Bigint	Rate of cattlefeed	Not null
amount	Bigint	Amount of cattlefeed	Not null

Table Name: cattlefeedentry

Field Name	Data Type	Description	Constraint
id	Int	Id of cattlefeed	Primary key, Not null
day	Date	Date of cattlefeed entry	Default (crudate()), Not null
feed_name	Varchar(40)	Name of cattlefeed	Null
sacks	Int	Total Number of sacks of cattlefeed	Null
sack_price	int	Price of sack	Null

Table Name: cattlefeed

Field Name	Data Type	Description	Constraint
day	Date	Date of cattlefeed reduction	Default (crudate()), Not null
userid	Int	User Id of milk supplier	Primary key, auto_increment, Not null
reduction	Int	Reduction of cattlefeed per bill	Not null
bal	Int	Remaining balance of supplier	Not null

Table Name: advance

Field Name	Data Type	Description	Constraint
day	Date	Date of updated Advance	Default (crudate()), Not null
userId	Int	User Id of milk supplier	Primary key, auto_increment, Not null
reduction	int	Reduction of advance per bill	Not null
balance_amount		Remaining balance of supplier	Not null

Table Name: advance_entry

Field Name	Data Type	Description	Constraint
day	Date	Date of Advance entry	Default (crudate()), Not null
userId	Int	UserId of milk supplier	Not null
advance	int	Amount of advance	Not null

Table Name: rate_sheet

Field Name	Data Type	Description	Constraint
day	Date	Date of updated rate sheet	Default (crudate()), Not null
fat	Float	Value of milk fat	Not null
SNF	Float	Value of milk SNF	Not null
cow_rate	Double	Rate of cow milk	Null
buffallo_rate	Double	Rate of buffallo milk	Null

Table Name: local_milk_rate

Field Name	Data Type	Description	Constraint
day	Date	Date of set local milk rate	Default (crudate()), Not null
cow_rate	Double	Rate of cow milk	Null
buffallo_rate	Double	Rate of buffallo milk	Null

Table Name: sanghreceipt

Field Name	Data Type	Description	Constraint
day	Date	Date of Sangh receipt	Default (crudate ()), Not null
daytime	Varchar(20)	Daytime of Sangh receipt	Not null
milk_type	Varchar(20)	Type of a milk	Null
good_quantity	Float	Milk quantity	Not null
fat	Float	Fat of milk	Not null
SNF	Float	Snf of milk	Not null
degree	Float	Milk degree	Not null
rate	Float	Rate of milk	Not null
amount	Float	Milk amount	Not null
Spoiled_quantity	Float	Quantity of spoiled milk	Not null
srate	Float	Rate of spoiled milk	Not null

Table Name: admin

Field Name	Data Type	Description	Constraint
admin_name	Varchar(40)	User full name	Not null
phone	Bigint	Phone of user	Unique
address	Double	Address of admin	Null
password	Varchar(10)	Password of admin	Not null
dairy_name	Varchar(40)	Dairy full name	Not null

Table Name: contact

Field Name	Data Type	Description	Constraint
name	Varchar(40)	User full name	Not null
phone	Bigint	Phone of user	Not null
subject	Varchar(90)	Subject message	Not null
message	longtext	Message of the user	Not null

4.2 Input Design & Output Design :

Input Design:

Login Form :-



Create an account

Login

Your UserId

Password

Remember me

Registration Form :-

Registration

Name
Sayali Shrikant Powar

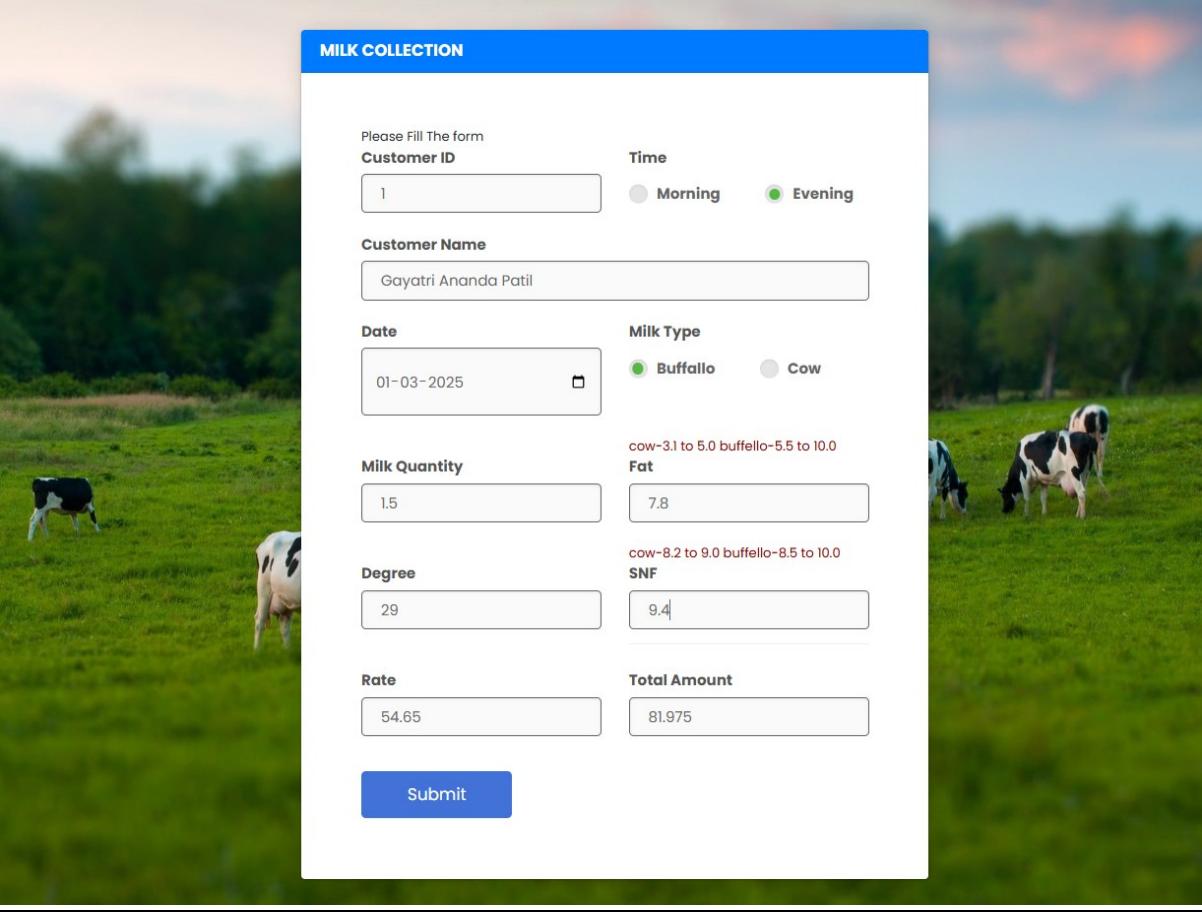
Address
Kallammavadi Vasahat Akiwat

Pincode
416106

Phone No
8806792450

Customer Type
Local Milk Buyer

Password
....

All Forms from Admin Dashboard:-Milk Collection form :-

MILK COLLECTION

Please Fill The form

Customer ID **Time** Morning Evening

Customer Name

Date **Milk Type** Buffalo Cow

Milk Quantity **Fat**
cow-3.1 to 5.0 buffello-5.5 to 10.0
Fat

Degree **SNF**
cow-8.2 to 9.0 buffello-8.5 to 10.0
SNF

Rate **Total Amount**

Submit

Milk Selling form :-

MILK Selling

Please Fill The form

Customer ID

Time

Morning Evening

Customer Name

Date

Milk Type

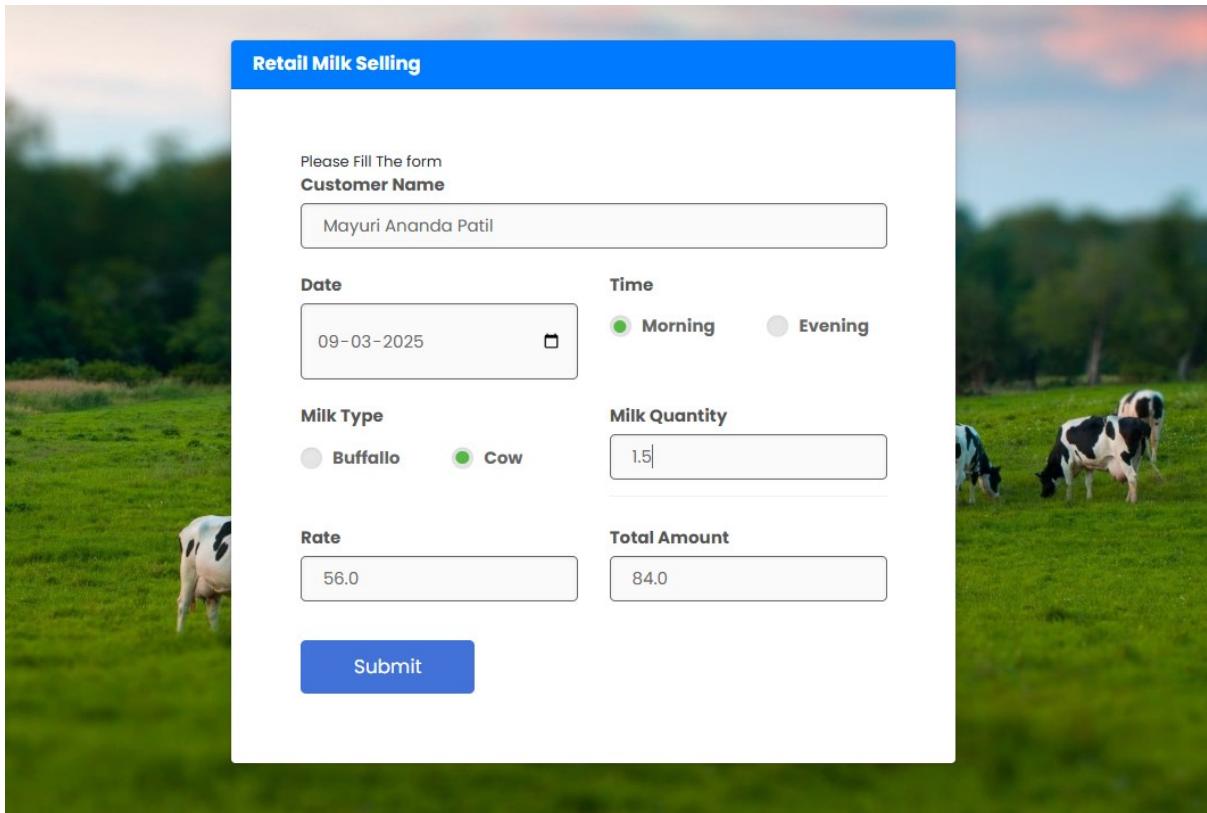
Buffalo Cow

Milk Quantity

Rate

Total Amount

Submit

Retail Milk Selling Form:-

Retail Milk Selling

Please Fill The form

Customer Name

Date

Time

Morning Evening

Milk Type

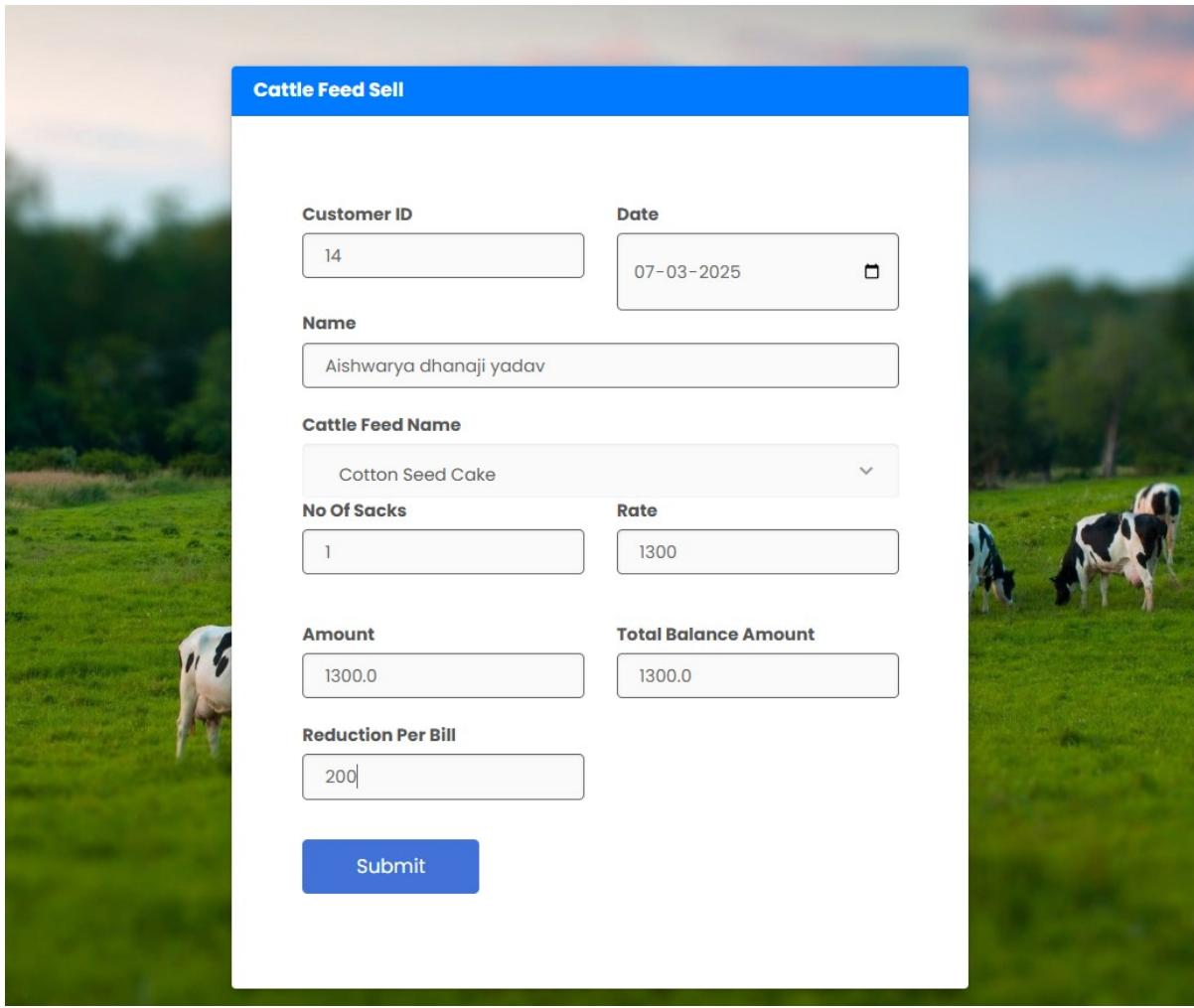
Buffalo Cow

Milk Quantity

Rate

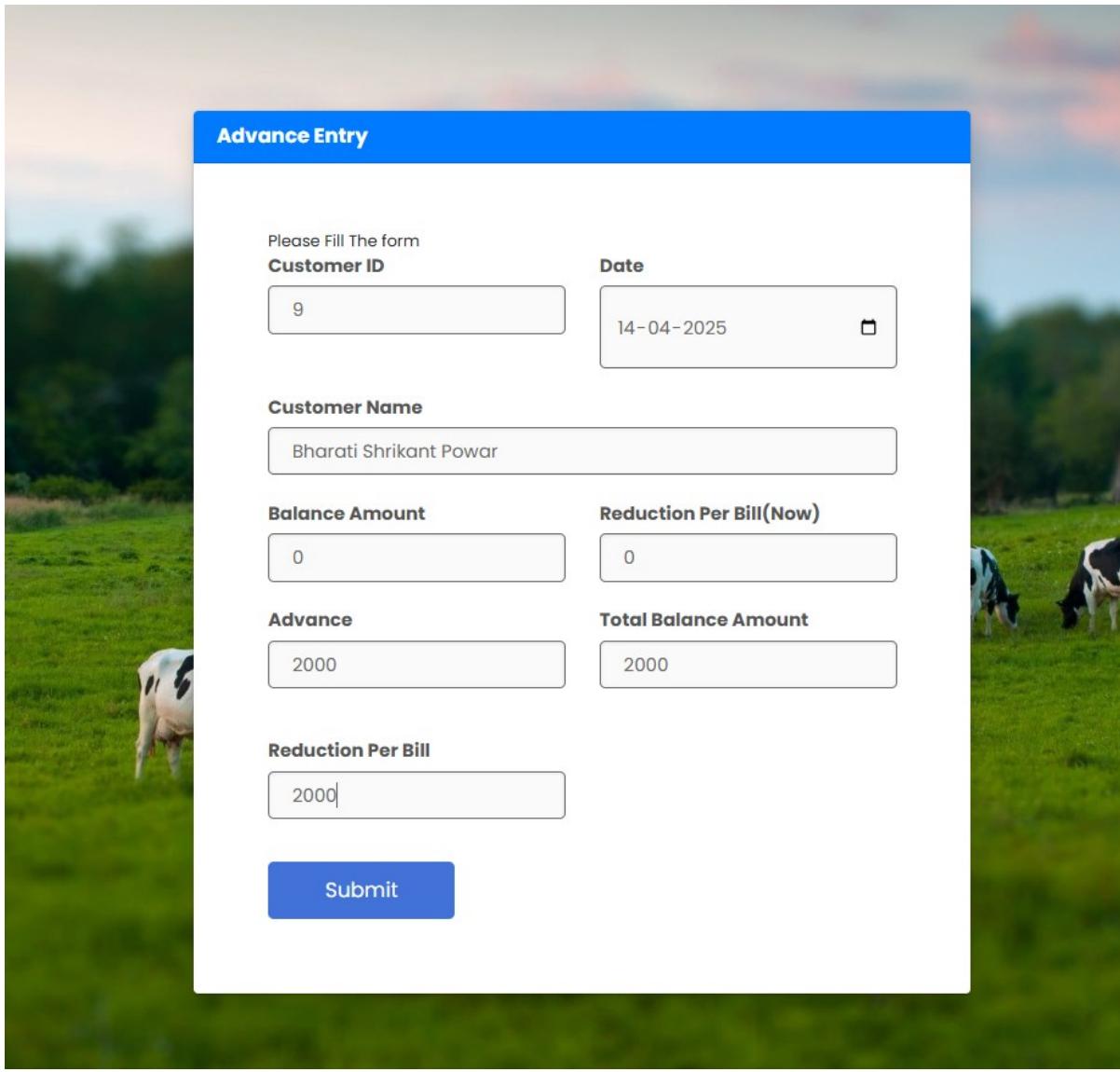
Total Amount

Submit

Cattlefeed Selling Form:

Cattle Feed Sell

Customer ID	Date
14	07-03-2025
Name	Aishwarya dhanaji yadav
Cattle Feed Name	
Cotton Seed Cake	
No Of Sacks	Rate
1	1300
Amount	Total Balance Amount
1300.0	1300.0
Reduction Per Bill	
200	
Submit	

Advance Entry form:-

Advance Entry

Please Fill The form

Customer ID	Date
9	14-04-2025 <input type="button" value=""/>

Customer Name

Bharati Shrikant Powar

Balance Amount **Reduction Per Bill(Now)**

0	0
---	---

Advance **Total Balance Amount**

2000	2000
------	------

Reduction Per Bill

2000

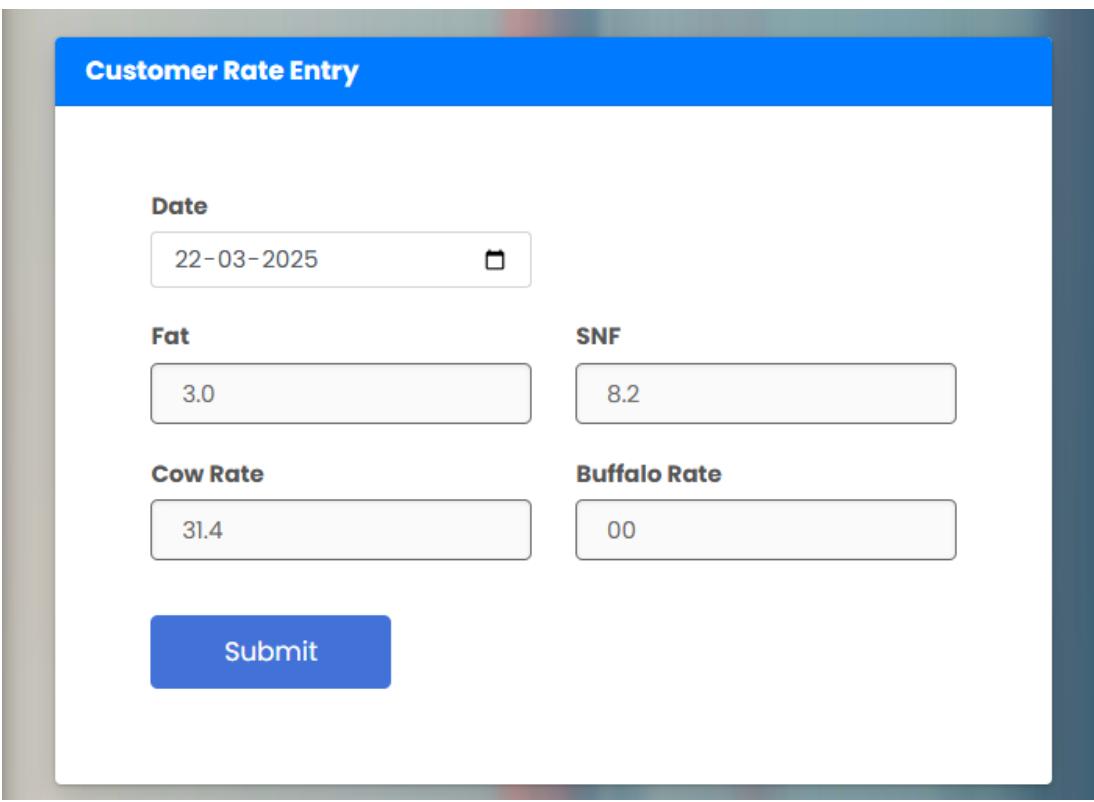
Submit

Sangh receipt Entry Form:-

Sangh Receipt Entry

Date	Time
15-04-2025	<input checked="" type="radio"/> Morning <input type="radio"/> Evening
Milk Type	Total Quantity
<input checked="" type="radio"/> Buffalo <input type="radio"/> Cow	45.4
Good Milk Quantity	Fat
40.2	7.4
SNF	Degree
8.9	27
Rate	Amount
55	2211
Spoiled Milk Quantity	Rate Of Spoiled Milk
5.2	2

Submit

Customer Rate sheet:-

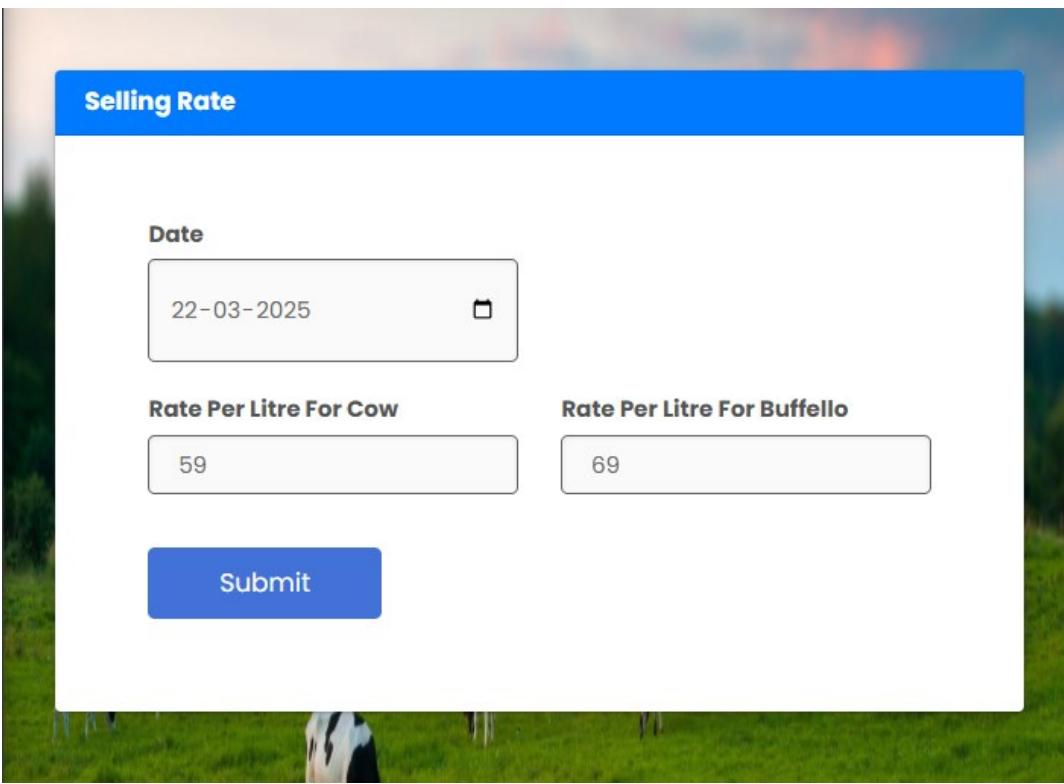
Customer Rate Entry

Date: 22-03-2025

Fat: 3.0 SNF: 8.2

Cow Rate: 31.4 Buffalo Rate: 00

Submit

Retail Milk Selling Rate:-

Selling Rate

Date: 22-03-2025

Rate Per Litre For Cow: 59 Rate Per Litre For Buffalo: 69

Submit

Cattle feed Entry:-

Cattle Feed Entry

Date
10-03-2025

Cattle Feed Name
Cotton Seed Cake

No Of Sack
10

Price Per Sack
1375

Submit

4.3 Output Design:

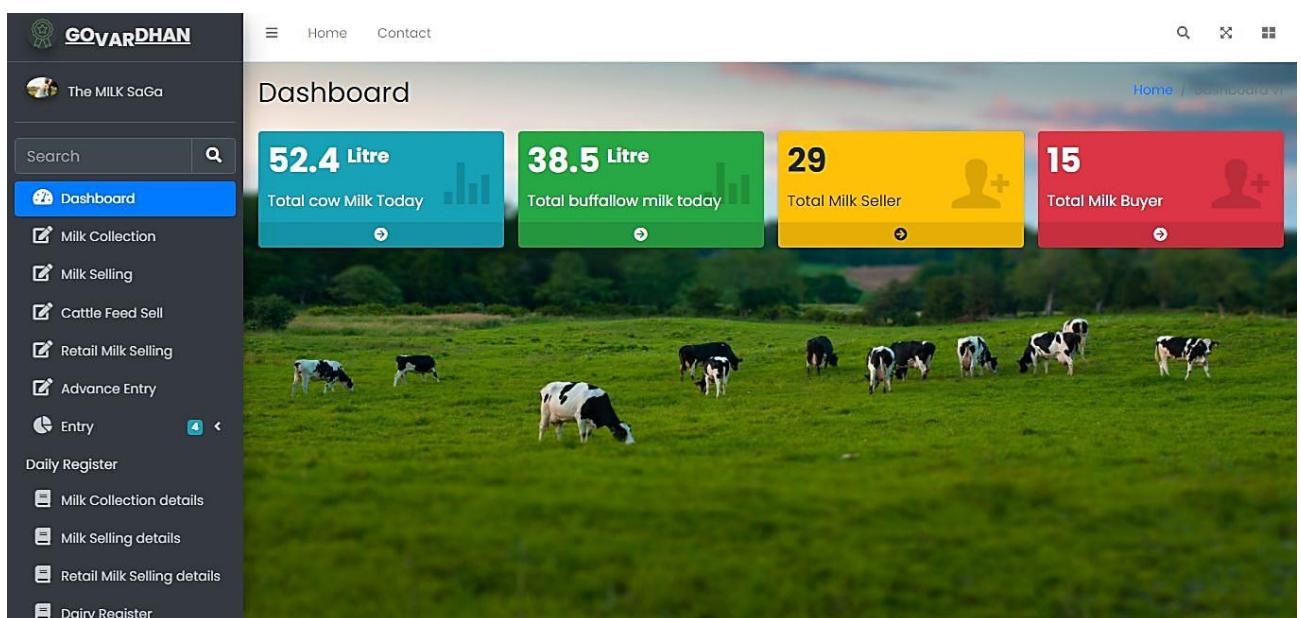
Home page of System :-

This is homepage of our System which contains navigation bar with Home, About us, Gallery, Contacts and Login and registration for User.



Admin Dashboard:-

This is an admin dashboard from this dashboard admin which is dairy owner will handle all things of system. Admin has all rights to update, delete the information. Here admin can collect and sell the milk. He can add cattle feed, advance details from here. And he is also able to see all the data from the system.

**Bill Receipt for Supplier:-**

Bill Receipt

[Home](#) / [DataTables](#)

From Date:- To Date:- UserID:-

Milk Magic Bill Receipt

Name :- Ananda Maruti Patil Customer ID:- 4

Address:- A/p kalmba

Phone No:-9423841747

Date:- 2025-03-01 To 2025-04-10

total quantity(in liter)	total Amount	advance	cattlefeed	Total Bill
6.3	220.12	50.0	0.0	170.0

Bill Receipt for Customer:-

From Date:- To Date:- UserID:-

Milk Magic Bill Receipt

Name :- Apeksha Bhujgonda Patil Customer ID:- 15

Address:- A/p nagav

Phone No:-9309169086

Date:- 2025-03-01 To 2025-03-10

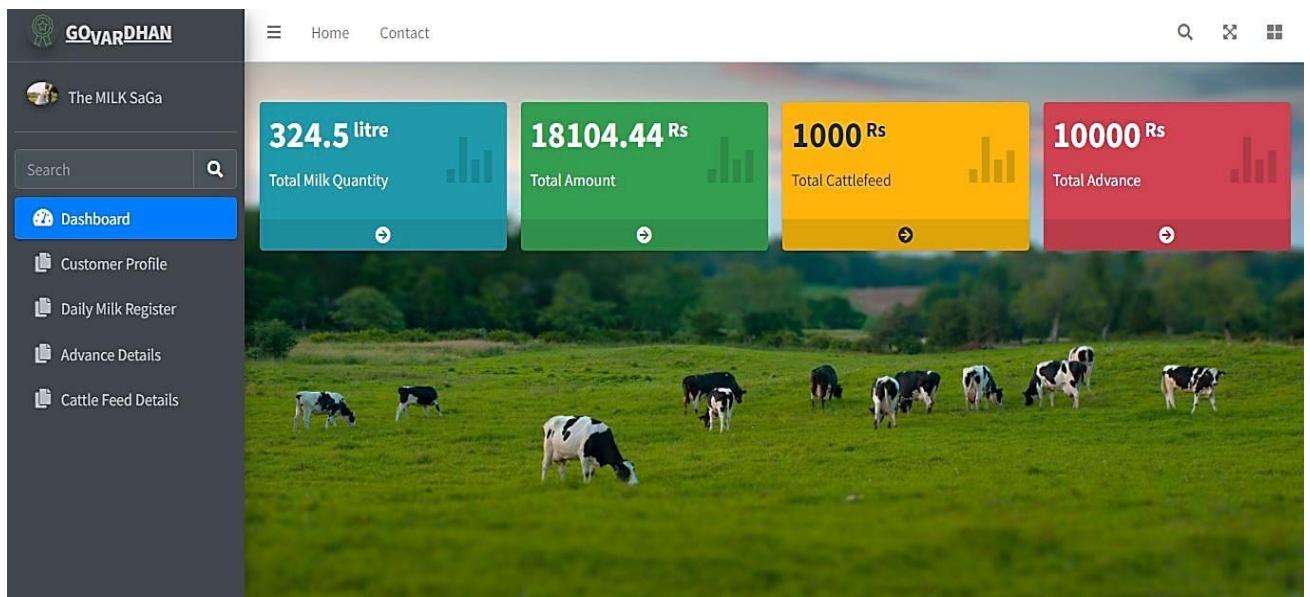
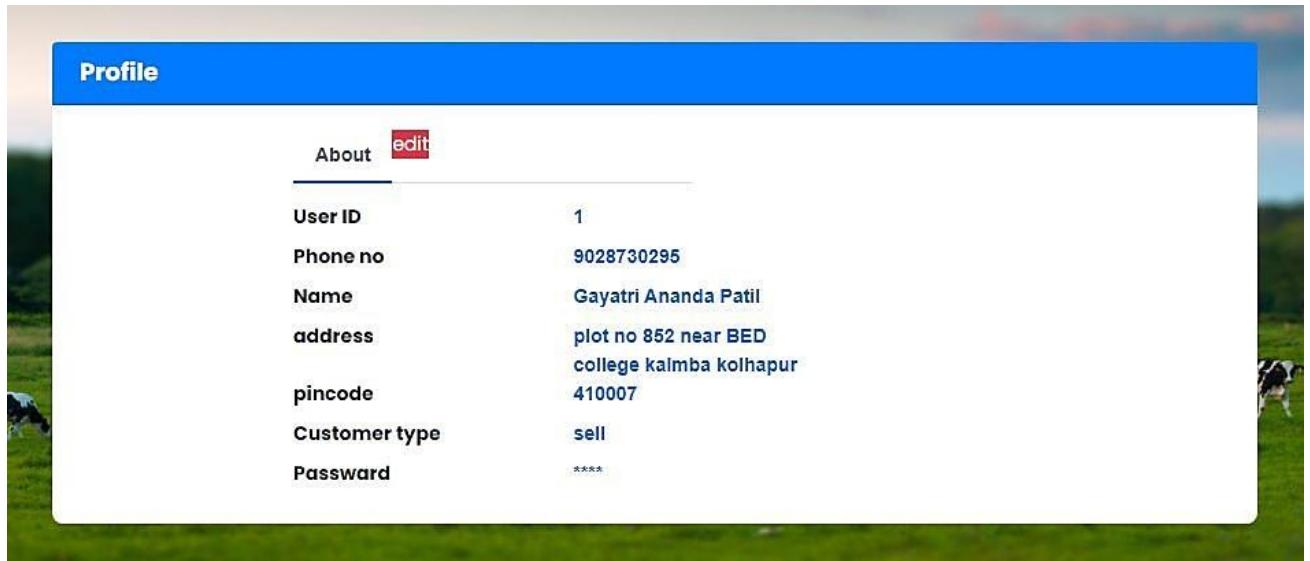
total quantity(in liter)	total Amount
18.0	1050.0

Daily Milk collection Details :-

Day	Userid	Daytime	Milk Type	Quantity	Fat	SNF	degree	Rate	Amount	Option
2025-03-01	1	morning	buffalo	2.3	7.1	8.8	29.0	50.7	116.61	<button>edit</button> <button>delete</button>
2025-03-01	3	morning	buffalo	3.1	8.1	9.2	26.0	55.45	171.895	<button>edit</button> <button>delete</button>
2025-03-01	5	morning	cow	4.5	3.8	8.3	26.0	33.8	152.1	<button>edit</button> <button>delete</button>
2025-03-01	7	morning	buffalo	2.3	7.6	8.8	26.0	52.2	120.06	<button>edit</button> <button>delete</button>
2025-03-01	9	morning	cow	3.2	4.2	8.3	27.0	34.6	110.72	<button>edit</button> <button>delete</button>
2025-03-01	11	morning	cow	3.6	4.0	8.7	27.0	36.65	131.94	<button>edit</button> <button>delete</button>
2025-03-01	12	morning	buffalo	2.5	6.2	8.8	27.0	47.5	118.75	<button>edit</button> <button>delete</button>
2025-03-01	14	morning	cow	3.1	4.5	8.3	26.0	35.2	109.12	<button>edit</button> <button>delete</button>
2025-03-01	17	morning	buffalo	2.3	6.2	8.7	29.0	47.2	108.56	<button>edit</button> <button>delete</button>
2025-03-01	19	morning	buffalo	2.3	6.7	9.2	27.0	50.05	115.115	<button>edit</button> <button>delete</button>
2025-03-01	21	morning	cow	2.3	4.5	8.4	27.0	35.5	81.65	<button>edit</button> <button>delete</button>
2025-03-01	22	morning	buffalo	3.4	7.8	9.2	26.0	54.55	185.47	<button>edit</button> <button>delete</button>

Daily Milk Selling Details:-

Day	Userid	Daytime	Milk Type	Quantity	Rate	Amount	Option
2025-03-02	2	morning	buffalo	1.0	60.0	60.0	<button>edit</button> <button>delete</button>
2025-03-02	2	evening	buffalo	0.5	60.0	30.0	<button>edit</button> <button>delete</button>
2025-03-03	2	morning	buffalo	0.5	60.0	30.0	<button>edit</button> <button>delete</button>
2025-03-03	2	evening	buffalo	1.0	60.0	60.0	<button>edit</button> <button>delete</button>
2025-03-04	2	morning	buffalo	1.0	60.0	60.0	<button>edit</button> <button>delete</button>
2025-03-04	2	evening	buffalo	0.5	60.0	30.0	<button>edit</button> <button>delete</button>
2025-03-05	2	morning	buffalo	1.5	60.0	90.0	<button>edit</button> <button>delete</button>
2025-03-06	2	morning	buffalo	1.0	60.0	60.0	<button>edit</button> <button>delete</button>
2025-03-06	2	evening	buffalo	0.5	60.0	30.0	<button>edit</button> <button>delete</button>
2025-03-07	2	morning	buffalo	1.0	60.0	60.0	<button>edit</button> <button>delete</button>
2025-03-07	2	evening	buffalo	0.5	60.0	30.0	<button>edit</button> <button>delete</button>
2025-03-08	2	morning	buffalo	1.0	60.0	60.0	<button>edit</button> <button>delete</button>

Supplier Dashboard :-Supplier Profile :-

Supplier daily milk Details:-

The screenshot shows a dashboard with a sidebar containing links like Dashboard, Customer Profile, Daily Milk Register, Advance Details, and Cattle Feed Details. The main area is titled "Daily Milk Register" and displays a table with columns: Day, Time, Quantity, Fat, SNF, Degree, Rate, and Amount. The data spans from March 1st to March 7th, showing morning and evening collections with their respective metrics and calculated amounts.

Day	Time	Quantity	Fat	SNF	Degree	Rate	Amount
2025-03-01	morning	2.3	7.1	8.8	29.0	50.7	116.61
2025-03-01	evening	2.5	7.5	9.1	27.0	53.6	134.0
2025-03-02	evening	2.0	6.6	8.7	29.0	48.7	97.4
2025-03-03	morning	2.4	7.2	9.1	27.0	52.7	126.48
2025-03-03	evening	3.1	7.8	9.3	26.0	54.6	169.26
2025-03-04	morning	1.8	7.3	8.9	29.0	51.6	92.88
2025-03-04	evening	1.7	7.3	8.7	26.0	51.0	86.7
2025-03-05	morning	1.3	6.3	9.3	29.0	48.6	63.18
2025-03-05	evening	1.9	7.3	9.4	28.0	53.15	100.985
2025-03-06	morning	1.9	7.9	9.5	30.0	55.0	104.5
2025-03-06	evening	2.1	6.6	9.2	28.0	49.75	104.475
2025-03-07	evening	1.6	7.2	9.1	28.0	52.7	84.32

Supplier Advance Details:-

The screenshot shows two pages. The top part is titled "Advance Details" and displays two rows of data: "Balance Amount for Advance" (7400) and "Reduction per bill for advance" (200). The bottom part is titled "Advance Table" and shows a table with columns "Date" and "Advance Taken". It contains one entry for December 3rd, 2022, with an amount of 10000. There are navigation buttons for "Previous", "Next", and a page number "1".

Balance Amount for Advance	7400
Reduction per bill for advance	200

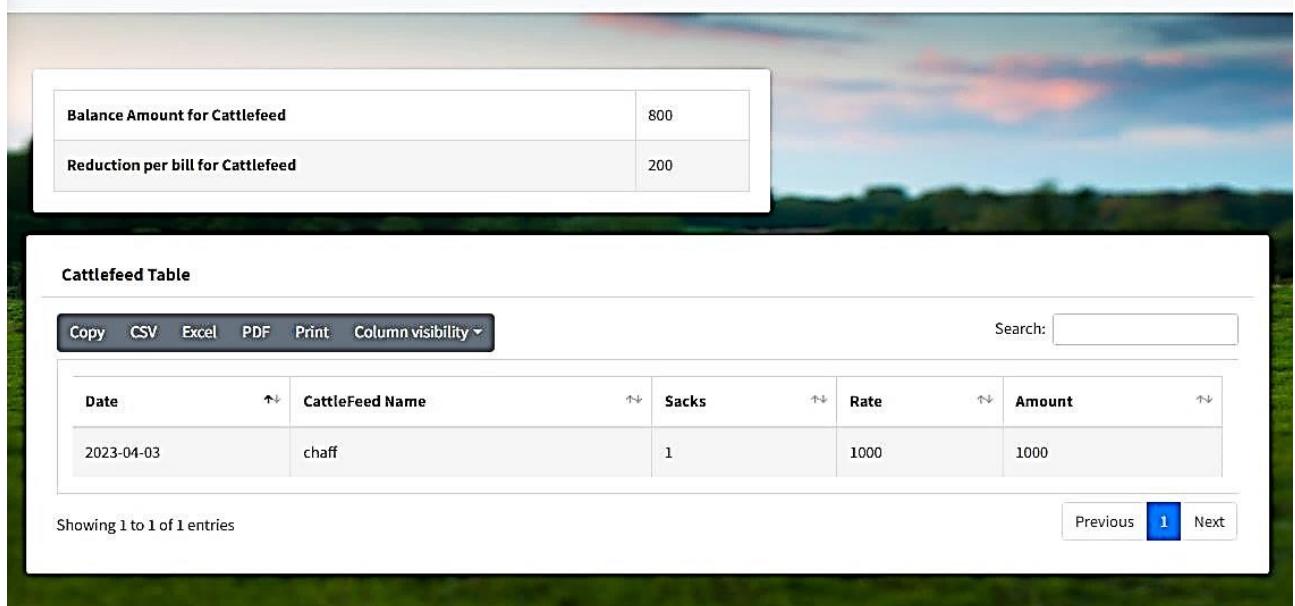
Date	Advance Taken
2022-12-03	10000

Showing 1 to 1 of 1 entries

Previous **1** Next

Supplier cattle feed details :-

Cattlefeed Details



Cattlefeed Details

Balance Amount for Cattlefeed	800
Reduction per bill for Cattlefeed	200

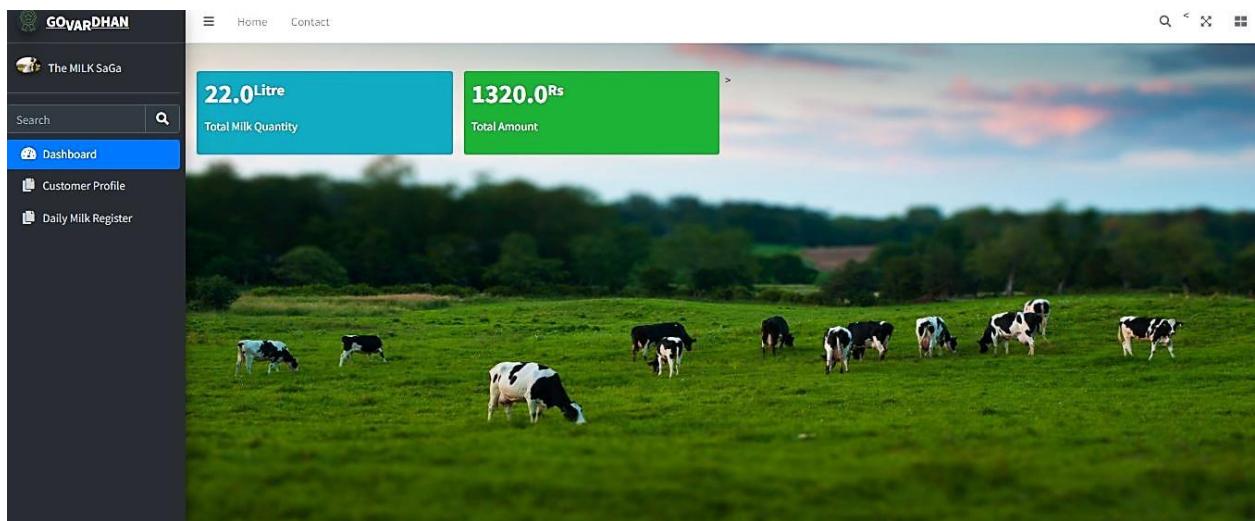
Cattlefeed Table

Date	CattleFeed Name	Sacks	Rate	Amount
2023-04-03	chaff	1	1000	1000

Showing 1 to 1 of 1 entries

[Copy](#) [CSV](#) [Excel](#) [PDF](#) [Print](#) [Column visibility](#) [Search](#)

[Previous](#) 1 [Next](#)

Customer Dashboard:-


GOVARDHAN

The MILK SaGa

Home Contact

Search

Dashboard

Customer Profile

Daily Milk Register

22.0 Litre **1320.0 Rs**

Total Milk Quantity Total Amount

Customer daily milk Details :-

The screenshot shows a web-based dairy management system. At the top, there's a header with the logo 'GOVARDHAN' and the text 'The MILK SaGa'. Below the header, there's a navigation bar with links for Home and Contact. On the left side, there's a sidebar with a search bar and links for Customer Profile and Daily Milk Register. The main content area is titled 'Daily Milk Register' and contains a table with data from March 1st to March 6th, 2025. The table has columns for Day, Time, Milk Type, Quantity, Rate, Amount, and Option. The data shows morning and evening collections for both cow and buffalo milk at various quantities and rates.

Day	Time	Milk Type	Quantity	Rate	Amount	Option
2025-03-01	morning	cow	0.5	45.0	22.5	
2025-03-01	evening	cow	0.5	45.0	22.5	
2025-03-02	morning	cow	0.5	45.0	22.5	
2025-03-02	evening	cow	0.5	45.0	22.5	
2025-03-02	morning	buffalo	1.0	60.0	60.0	
2025-03-02	evening	buffalo	0.5	60.0	30.0	
2025-03-03	morning	buffalo	0.5	60.0	30.0	
2025-03-03	evening	buffalo	1.0	60.0	60.0	
2025-03-04	morning	buffalo	1.0	60.0	60.0	
2025-03-04	evening	buffalo	0.5	60.0	30.0	
2025-03-05	morning	buffalo	1.5	60.0	90.0	
2025-03-06	morning	buffalo	1.0	60.0	60.0	

Chapter 5

Implementation

5.2 Installation Process for Visual Studio Code:

5.2 Installation Process for Visual Studio Code

The technology stack chosen for implementing the *Dairy Milk Collection System* is **Python (Flask Framework)** and **MySQL**, with **Flask** acting as the development server. The project is developed on a Windows platform using **Visual Studio Code** for writing and testing the application. CSS and HTML are used for front-end styling and structure.

5.2.1 Python:

Python is a high-level, interpreted programming language known for its simplicity and versatility. It supports object-oriented, functional, and procedural programming paradigms. Python is widely used in web development, automation, data science, machine learning, and system scripting.

It supports integration with databases like MySQL and allows for seamless backend web development through frameworks like **Flask**. Being open-source, Python allows users to

customize and extend its features for specific applications. It is available for all major platforms and can be easily installed and configured on any system.

5.2.2 Flask Framework:

Flask is a lightweight web framework for Python that is easy to use and deploy. It is based on the Werkzeug toolkit and Jinja2 templating engine. Flask is ideal for small and medium-sized web applications and provides routing, session management, and templating features out of the box.

Unlike more heavyweight frameworks like Django, Flask offers flexibility, letting developers use extensions or integrate only the components they need.

Key features:

- Minimal setup
- URL routing and view functions
- Jinja2 template rendering
- RESTful request handling
- Session and cookie management
- Easy integration with MySQL using libraries

5.2.3 MySQL:

MySQL is a widely used open-source relational database management system (RDBMS). It uses structured query language (SQL) for accessing and managing data. In this project, MySQL is used to store user details, milk collection records, sales, rate sheets, and transaction logs.

The database is connected to the Flask application using **mysql-connector-python** or **SQLAlchemy**.

5.3 User Guidelines:

The Dairy Milk Collection System is a web-based platform designed to help dairy administrators manage milk collection, supplier and buyer records, sales, and reporting. Below are the basic instructions for users of the system:

For Admin:

- Login using the admin credentials.
- Register new customers/suppliers through the registration module.
- Use the Milk Collection feature to record daily milk received from suppliers.
- Manage Milk Sales and Retail Sales by recording buyer details and transaction amounts.
- Maintain the Milk Rate Sheet to define current rates for each category.
- Track Advance Payments given to suppliers.
- Record and view Cattle Feed Sales details.

- Use the Report Section to view daily and monthly summaries.

For Supplier:

- View personal details and update them if needed.
- View their milk contribution history.
- Track advance payments and milk rate sheets.
- Access their bill receipts from the system.

For Customer:

- Login or register through the customer portal.
- View milk purchase history.
- Download/view bill receipts for all transactions.

Chapter 6

Reports

Chapter 7

Conclusion, Suggestion and Limitation

7.1 Conclusion:

The system is designed in such a way that future modifications can be done easily. The following conclusions can be deduced from the development of the project.

- Automation of the entire system improves the efficiency.
- It provides a friendly graphical user interface which proves to be better when compared to the existing system.
- It gives appropriate access to the authorized users depending on their permissions.
- Updating of information becomes so easier.
- System security, data security and reliability are the striking features.
- However, the success of the project depends on several factors, including access to high-quality data, sufficient computational resources, and collection centres to adopt new technologies and approach

The project can benefit farmers, consumers, and the environment, creating a more sustainable and equitable dairy industry for everyone involved

7.2 Limitations:

- **Limited access to data:** The success of a dairy milk collection system project depends on the quality and quantity of data used.
- **Complexity of the system:** A dairy milk collection system project involves many complex processes, such as milk measurement, fat content analysis, and payment calculation. Building an accurate model that accounts for all these processes can be challenging. The transaction are done offline mode.
- **Limited scalability:** The dairy milk collection system project may be challenging to scale up for larger operations. The model may need to be adjusted to handle larger volume of data.
- **Limited resources:** Developing a dairy milk collection system project in Python may require significant computational resources, such as high-end hardware and data storage. These resources can be expensive and may not be accessible to everyone.

7.3 Suggestion :

- We can give more advance software “Dairy Management System” including more facilities.
- We will host the platform on online servers to make it accessible for overall countries.
- The transactions will be executed in online mode.
- develop GUI
- make more responsive.

Overall, the dairy milk collection system project has a vast future scope, and there is a lot of potential for innovation and growth in this area. By adopting new technologies and approaches, the dairy industry can improve the efficiency, accuracy, and sustainability of milk production, benefiting farmers, consumers, and the environment.

Chapter 9

References

References:

- <https://www.w3schools.com>
- <http://www.youtube.com>
- <https://www.geeksforgrecks.org>
- <https://www.tutorialspoint.com>
- <https://www.dairyknowledge.in/article/digital-dairy-management>
- <https://www.studocu.com/in/bscoptometry/dairy-management-system>
- <https://www.techjockey.com/blog/dairy-management-system>