VISVESVARAYA TECHNOLOGICAL UNIVERSITY

JNANA SANGAMA, BELAGAVI-590018

A Mini Project Report on

"DAIRY FARM MANAGEMENT SYSTEM"

Submitted in the partial fulfillment for the requirements for the conferment of degree of

BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND ENGINEERING

Submitted By

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(An Autonomous Institute, Affiliated to VTU, Belagavi
Avalahalli, Yelahanka, Bengaluru-560064)
2022-2023

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CERTIFICATE

This is to certify that the Mini Project work entitled **"DAIRY FARM MANAGEMENT SYSTEM"** is a bonafide work has been carried out by **Ms. Sameeksha (1BY20CS157) and Ms. Sahana Hosamani (1BY20CS161), bonafide students of BMS Institute of Technology and Management, Autonomous Institute Affiliated to VTU,** in partial fulfillment for the award of **Bachelor of Engineering Degree in Department of Computer Science and Engineering** during the year 2022-23. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in this report. The Mini project report has been approved as it satisfies the academic requirements in respect of Mini project work for the B.E Degree.

Signature of the Guide1	**Signature of the Guide2**	**Signature of the HOD**
Mrs. Ambika G.N	**Mr. Rajesh N.V**	**Dr. Thippeswamy .G**
Assistant Professor	Assistant Professor	Professor & HOD
Dept. Of CSE	Dept. Of CSE	Dept. Of CSE
BMSIT&M	BMSIT&M	BMSIT&M

Name of the Examiners **Signature with Date**

1.

2.

ABSTRACT

Different types of farm management information systems (FMIS) are being used in the recent days as practice in several sectors of farming, such as dairy fruits, vegetables, and meat farming.

The goal of this research is to identify, evaluate, and synthesize existing farm management information systems in the country's dairy sector and present the state–of–the–art. We performed a multivocal literature review (MLR) to find sources both in scientific and grey literature.

A grey literature search was adopted because most of the farm management information systems were not reported in the scientific literature. To support and improve the effectiveness of the multivocal literature review process, we have developed this project named as 'dairy farm management' to help the dairy managers and also the farmers to have a record on each deliveries.

With the help of the multivocal literature review process, we identified many of the farm management information systems used by country's dairy farmers.

After all these research done by us we understood the basic advantages and disadvantages of the farm management and developed this project accordingly to help both farmers and dairy managers to simplify the holding of dairy records

ACKNOWLEDGEMENT

We are happy to present this Mini project after completing it successfully. This project would not have been possible without the guidance, assistance and suggestions of many individuals. I would like to express my deep sense of gratitude and indebtedness to each and every one who has helped me to make this project a success.

We heartily thank our **Principal, Dr. MOHAN BABU G N, BMS Institute of Technology & Management, Autonomous Institute Affiliated to VTU** for his constant encouragement and inspiration in taking up this Mini project.

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By,
Palak Kumari(1BY20CS133)
Raksha(1BY20CS144)

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CHAPTER 1
INTRODUCTION

1.1 BRIEF INTRODUCTION

Database is an organized collection of data. The data is typically organized to model aspects of reality in a way that supports processes requiring information. A DBMS makes it possible for end users to create, read, update and delete data in a database. The DBMS essentially serves as an interface between the database and end users or application programs, ensuring that data is consistently organized and remains easily accessible.

The DBMS manages three important things: the data, the database engine that allows data to be accessed, locked and modified and the database schema, which defines the database's logical structure. These three foundational elements help provide concurrency, security, data integrity and uniform administration procedures. The DBMS can offer both logical and physical data independence.

The Dairy Farm Management System is a database Management system that uses database technology to construct, maintain and manipulate various kinds of data about deliveries and farmers having dairy.The Dairy Farm Management System is a web based application that can be accessed over the web. This system can be used to automate the workflow of dairy farm and their invoices.

The project has been planned to be having the view of distributed architecture, with centralized storage of the database. The application

for the storage of the data has been planned. Using the constructs of MySQL Server

and all the user interfaces has been designed using the PHP technologies. The database connectivity is planned using the “MySQL Connection” methodology.

1.2 Motivation and Scope

- To deploy a website which keeps track of each delivery produced by the farmer and details of the farmer who produce milk thus, creating a transparent and a user friendly website for dairy farm management.
- It can be used for rural area people survive option, paperwork reduction improved
- Data quality, reduce transportation expense, view reports daily basis, error reduction
- This application is built in such a way that it should suit for all type of dairy farmers in future .So every effort is taken to implement this project in farm management field. On successful implementation of this project we can target other Milk Distributors in the city.
- Milk dairy management system project is a software web application useful for dairy forms for managing daily activities like receiving of milk from various sources and records of the same.
- The Dairy Management System is a platform where the manager can log in to keep track of all the deliveries and to check whether the farmers are paid or not.

1.2 Objectives

The main objective of the developed system is to allow to add Farmers and Employees information to the database. Information such as the farmers id, farmers name and the employees name, farmers number . It also helps the Farmers and the Employees to easily create, delete, update, view, and select a particular Farmers information. A visitor with minimum knowledge can easily access and also work on these kind of operations. Suppose if the information in the database, you want it to beremoved, you can either delete it one by one or just click on the reset button this will clear the entire data in the database. You can now create a database by adding new information of the Farmers and Employees in it.

1.3 Benefits of having Student Regristration System

- Enhances the overall performance.
- It helps to streamline all task.
- Can be accessed by anyone.
- Well-organized management.
- Helps to maintain the record of all Farmers .
- Reduction of human labour, papers and workload.
- Provide an inbuilt management.

1.4 Modern pillars of Dairy Management System

With technology and urbanization, modern needs are rapidly growing. In order to keep the software the performance of the software streamlined as per the growing requirements, it is always better to keep on adding new features to your tech stack. Below are the three integral new day features that should be embedded in management system:

1. Cloud-based

Cloud-based software has significant advantages when compared with locally hosted counterparts. With Cloud system, there is a minimal need for IT support, hardware maintenance, and it offers software upgrades. Therefore, making it significantly more accessible for the IT division to operate multiple systems.

2. Information security

Data is the most critical and confidential aspect for every industry, including agriculture and dairy. Therefore, it must be secure, and there should be a proper management for backing up this data. Because system management software also deals with an array of sensitive information, so they need to have a security layer to safeguard it from illegitimate hackers or unknown users.

3. Integrations

Integrations ensures that the data kept inside your software is consistent and accurate in all the software system databases.

1.5 Problem statement

The common issue faced by Dairy Management are Some of the dairy managers hold their records in Ms Excel spreadsheets and Ms Word documents which is a risky method that is costly in the event their computers get stolen or corrupt all the data and information stored there.
In most cases there have been instances of data and information incontinency when updates are performed on selected records and such changes do not reflect in other records.

1.6 Solution

The main purpose of the Dairy Farm Management System is to track farmers details, employees details, logins, per farmer deliveries total farmer deliveries report. It keeps track of all report, farmers, and related information. Dairy Management systems make it easier for farmers and employees to retrieve and sort information, which makes their jobs easier. Farmers and dairy Employees can use this method to keep track of their students records and reports. These objectives foster, support, and sustain an atmosphere inside Dairy farm that promotes, supports, and sustains Dairy Farming.

CHAPTER 2
LITRETURE SURVEY

In recent years, web application frameworks have been widely practiced by many developers to increase programming productivity as the framework are more flexible, rapidly built using HTMLand CSS,JavaScript published under an open-source license which will reduce the final cost of development. Although the javascript automation in the web application framework boosts the development process, there are many important aspects of a web application absent from the output. Therefore, this multivocal literature review investigates the records management aspects that are required in modern WA and the perceived benefit of integrating the records management aspect into operation. The study extracted 284 publications from respectable scientific resources and the grey resources literature created by WA development practitioners outside academic mediums. After a detailed review process, only 14 scientific primary studies and 13 grey studies were considered for this review based on defined inclusion and exclusion criteria. The review shows that the most important aspect required in WA is search, role-based access control, retention, appraisal, search, audit trail, digital archiving, sharing, reporting, inactive files management and several other features. This important aspect has been analyzed and characterized according to its function and features. The method and procedure for integrating the specified aspect into operation are identified and discussed. Integrating and implementing the specified report management features into operation will boost the WA development productivity by producing more features as a standard output with integrated records management functions.

CHAPTER 3

Software Requirements Specification

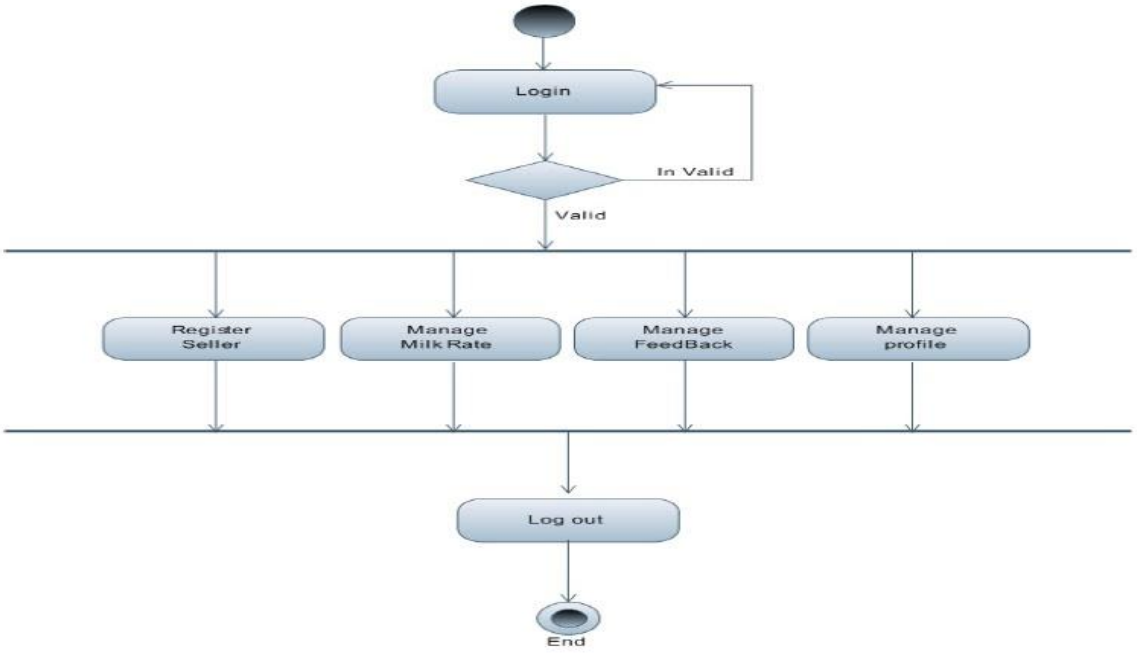
3.1 Hardware Requirements

- Processor: Intel Pentium 3 or more.
- Ram: 1 GB or more, and database memory.
- Hard disk: 40 GB hard disk recommended for the primary partition.

3.2 Modules of Dairy Farm Management System

The system has a different segment to process a specific task which is the modules.This will help the system to be developed easily and make it more user friendly.

- **Overall Design:**



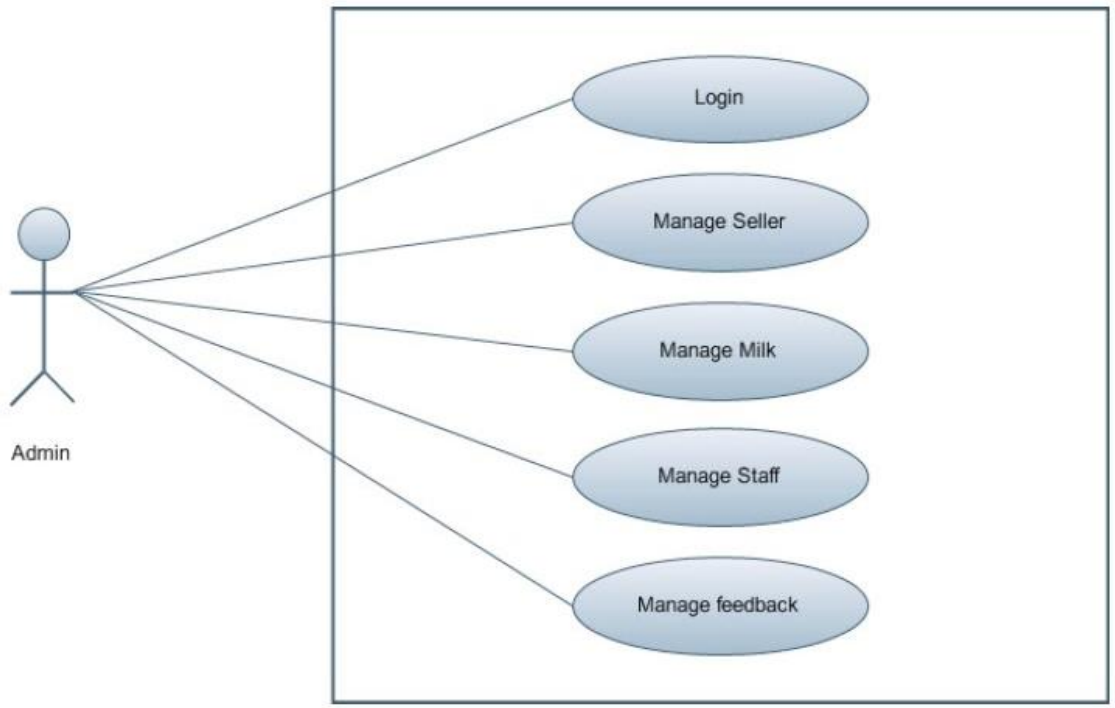
The first step in our project was having a discussion about what functionalities we want to provide with our work. After getting a mutual understanding of what the end product might look like, we worked on the database design. Two of us made our own database schema, compared them, and put together a final database schema that we all could agree upon, with parts of all our works to make what we deemed to be the

most functionally accurate database.

The next step was frontend development (using HTML + CSS) and database creation (using MySQL), both of which were done simultaneously. The frontend was made with regular interaction with the backend-in-charge, to make sure it properly reflects the backend and at the same time is user-friendly.

After these were done, Flask framework was used to put the project together, some final touches were added, and was then hosted onto the internet.

Admin Module:



Admin upon login is redirected to a Dashboard where the admin can view all the previously entered data by user i.e. farmers and employees and can update them as well. The Admin can go through the different farmer's details available and perform possible transaction updating which can be performed based on organization processes which take place. And can view log of all transactions and newly added farmers and employees details and can also check the statistics of transactions performed.

The Admin has all rights to update and remove any of the entities in the platform..

3.3 Hardware Interfaces

- We require LAN connection for interacting with the database.
- local computers for any help or any other requirement.
- We use TCP/IP protocol for communicating with local hosts.

3.4 Software Interfaces

- We use HTML ,CSS,JavaScript and PHP programming language for writing the code for the project.
- Using GUI for interacting with the database.
- SQL server is used for creating the local and global database (server).
- Operating system: Windows XP or higher version.

3.5 Communication Interfaces

- The communication functions required by this product are LAN connection within the whole company so that anyone can interact with each other.
- We use TCP/IP protocol.

3.6 User Documentation

In our user manual, we are going to keep the information regarding our product which can be understandable by a new person who is going to use it. If a newperson is using it online help will be provided in that we are going to explain each and every step clearly why our product can be useful for any user.

3.7 Software Requirements

The software required for the development of the project is:

Operation System: Windows 2000 Professional

Environment: Visual Studio Code

Net Backend: Xamp Server

3.8 Functional Requirement

- Creation of the new record for the new Farmers.
- Deletion of the record which already exists in the system based on the requirement of the dairy farm.
- Update in the record which is present in the system as per the need.
- Generate the report on the per farmer delivery and Total farmer delivery.
- Admin's handle the all modules, this function eases the process of management.

3.9 Non-Functional Requirement

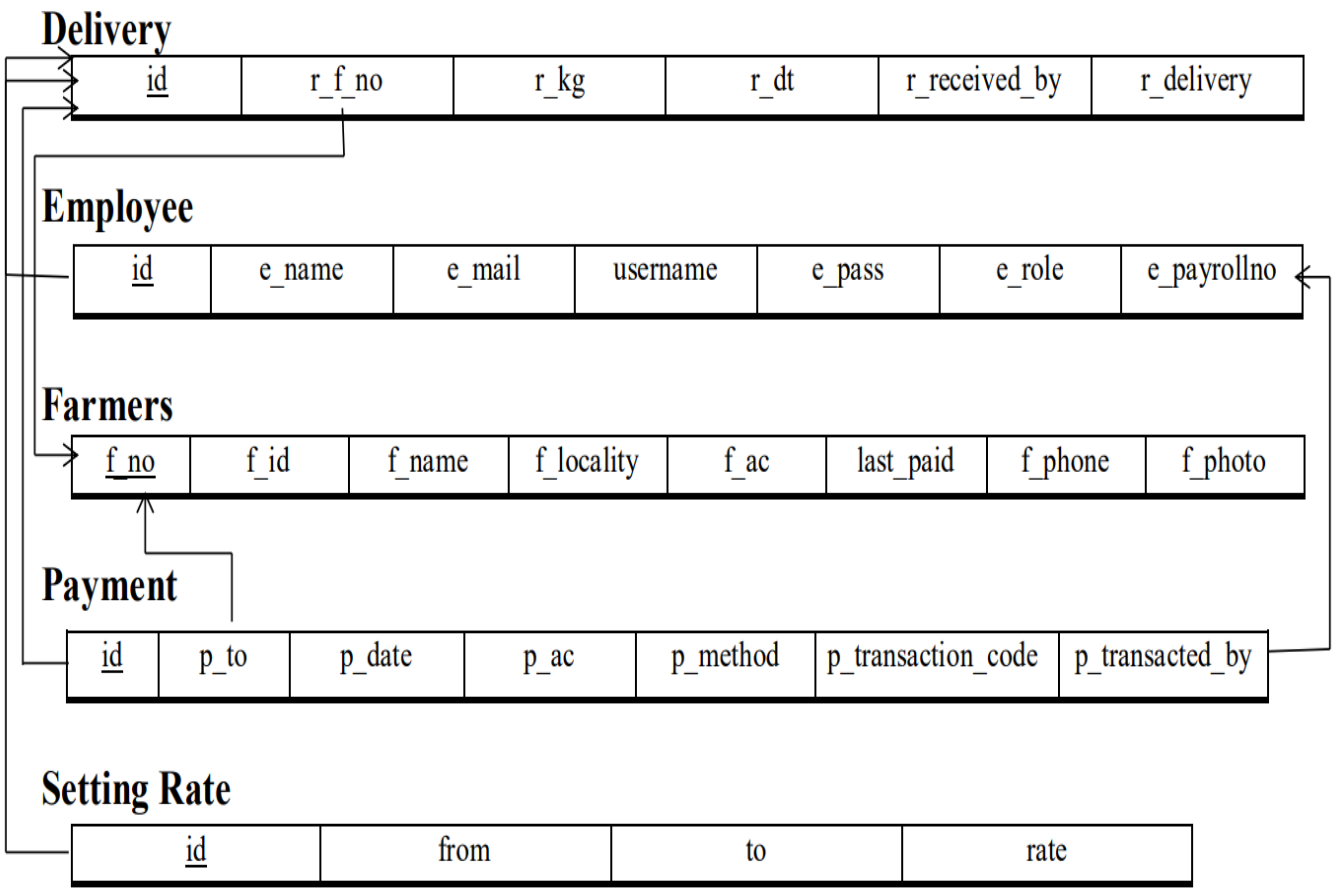
- The security of the system is maintained by providing a login interface to the user. Only those who have the login is and password can enter the system.
- User-Friendly as the system is very interactive and can be easily operated.
- Maintainability and reliability if the system is kept very thoroughly as all the records kept in the database have the backups and system can restore if there is power loss.

CHAPTER 4

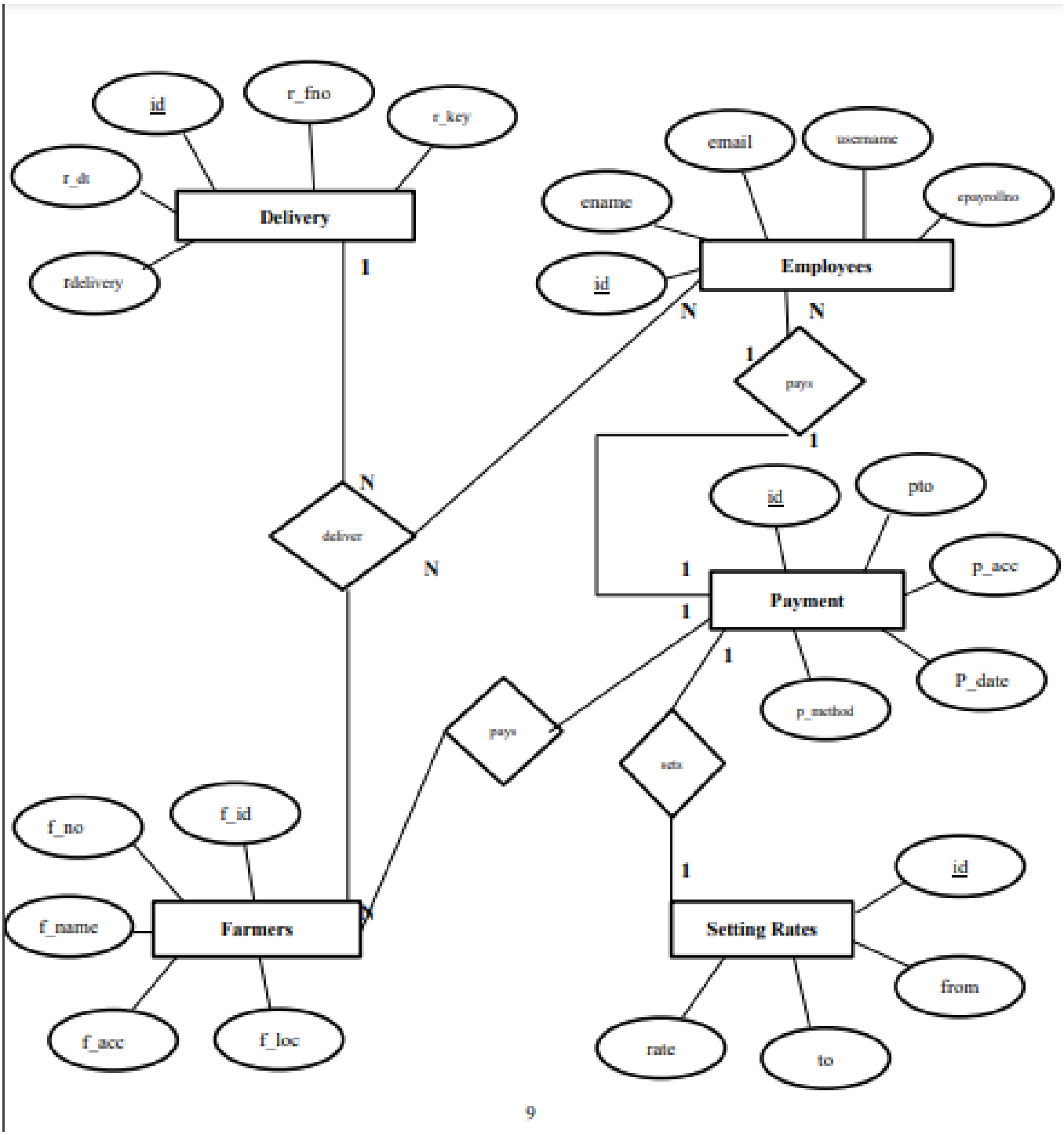
SYSTEM DESIGN

4.1 SCHEMA DIAGRAM

4.2 Schema Diagram :



4.2 Entity-Relationship Diagram



CHAPTER 5
IMPLEMENTATION

5.1 Description of Database used

The database language used to create the DBMS used in the project is the SQL (Structured query language). It is a domain-specific language used in programming and designed for managing data hold in a Relational Database Management System (RDBMS), or for stream processing in a Relational Data Stream Management System (RDSMS). In comparison to older read/write APIs like ISAM or VSAM,SQL offers two main advantages: first, it introduced the concept of accessing many records with one single command; and second, it eliminates the need to specify how to reach a record, e.g with or without an index. Originally based upon relational algebra and tuple relational calculus, SQL consists of a data definition language, datamanipulation language, and data control language. The scope of SQL includes data insert, query, update and delete, schema creation and modification, and data access control. Although SOL is often described as, and to a great extent is, a declarative language (4GL), it also includes procedural elements. SQL was one of the first commercial languages for Edgar F. Codd's relational model, as described in his influential 1970 paper, "A Relational Model of Data for Large Shared Data Banks". Despite not entirely adhering to the relational model as described by Codd, it becamethe most widely used database language. SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organizationfor Standardization (ISO) in 1987.Since then, the standard has been revised to include a larger set of features. Despite the existence of such standards, most SQL code is not completely portable among different database systems withoutadjustments.

The Database used was MySQL, MySQL is an open source relational database management system (RDBMS) that works with an operating system to implement a relational database in a computer's storage system, manages users, allows for network access and facilitates testing database integrity and creation of backups. It is most noted for its quick processing, proven reliability, ease and flexibility of use. It is a stable, reliable and powerful solution with advanced features like: Data Security, High Performance, complete workflow control, flexibility of open source.

The MySQL Database Server is very fast, reliable, scalable, and easy to use.MySQL server can run comfortably on a desktop or laptop, alongside your other applications, web servers, and so on, requiring little or no attention.

The MySQL Database Software is a client/server system that consists of a multithreaded SQL server that supports different back ends, several different client programs and libraries, administrative tools, and a wide range of application programming interfaces (APIs). It also provides MySQL Server as an embedded multithreaded library that you can link into your application to get a smaller, faster, easier-to-manage standalone product.

The MySQL Database Server is very fast, reliable, scalable, and easy to use. If that is what you are looking for, you should give it a try. MySQL Server can run comfortably on a desktop or laptop, alongside your other applications, web servers, and so on, requiring little or no attention.

We have used Flask which is an API of Python that allows us to build up web-applications. It was developed by Armin Ronacher. Flask's framework is more explicit than Django's framework and is also easier to learn because it has less base code to implement a simple web-Application. A Web-Application Framework or Web Framework is the collection of modules and libraries that helps the developer to write applications without writing the low- level codes such as protocols, thread management, etc.

Description of Implementation:

For front-end development, Visual Studio Code was used. Visual Studio Code is a free source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git.

Visual Studio Code is a lightweight but powerful source code editor which runs on your desktop and is available for Windows, macOS and Linux. It comes with built-in support for JavaScript, TypeScript and Node.js and has a rich ecosystem of extensions for other languages (such as C++, C#, Java, Python, PHP, Go) and runtimes (such as .NET and Unity).

HTML5:

Hypertext Markup Language revision 5 (HTML5) is markup language for the structure and presentation of World Wide Web contents. HTML5 supports the traditional HTML and XHTML style syntax and other new features in its markup, New APIs, XHTML and error handling.

CSS:

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML. CSS is a cornerstone technology ofthe World Wide Web, alongside HTML and JAVASCRIPT.

JAVASCRIPT:

JavaScript is a programming language that started off simply as a mechanism to add logic and interactivity to an otherwise static Netscape browser.

5.2 Component Tests:

Component testing is undertaken when a module has been created and successfully reviewed.

Each component of the software was tested individually from adding user as farmers and employees from two logins to performing dairy transactions and updating logs and multiple other components were also tested.

Login Screen:		
TESTUNIT	TEST CASE	RESULT
Login Screen	Providing an registered user id and password	The system takes the user to their respective Dashboards.
Login Screen	Providing login details which do not match registered credentials	The system does not grant access to the user/admin and shows error message
Admin Functions:		
TEST UNIT	TEST CASE	RESULT
Add/delete/ update	Click on farmers/employees to perform search/ Add/delete	User is displayed with selected data & availed to see the farmers/employees.
Admin Home	Admin Click on Add/Update/ Remove options	Admin corresponding payments opens up
Search Filters:		
TESTUNIT	TEST CASE	RESULT
Search Filters	Click on filters	Search gets filtered based on the letters entries and greedy matching occurs successfully

5.3 System Test:

The whole system testing was done to evaluate the efficient working of software. All the bugs that were found were sorted out.

Our Project went through two levels of testing

5.3.1: Unit Testing

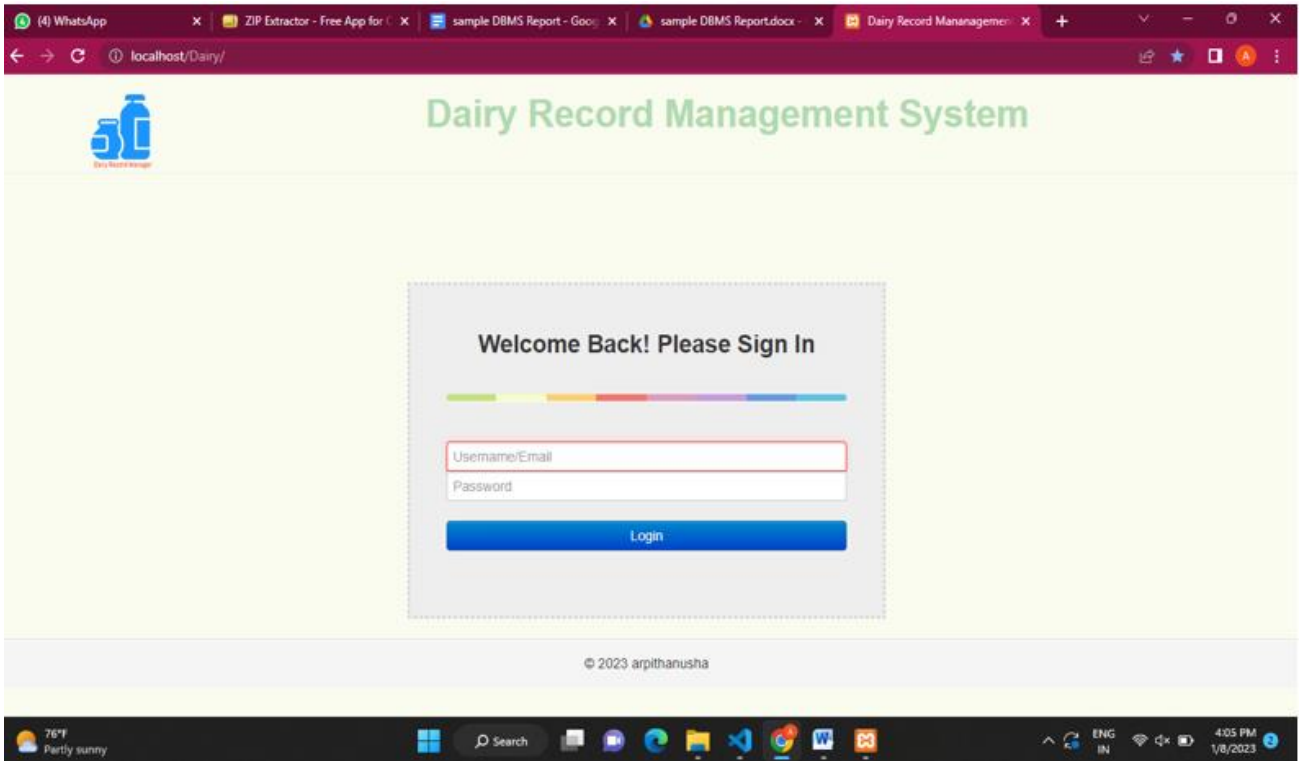
Unit Testing is a type of software testing where individual units or components of a software are tested. The purpose is to validate that each unit of the software code performs as expected. Unit Testing is done during the development (coding phase) of an application by the developers.

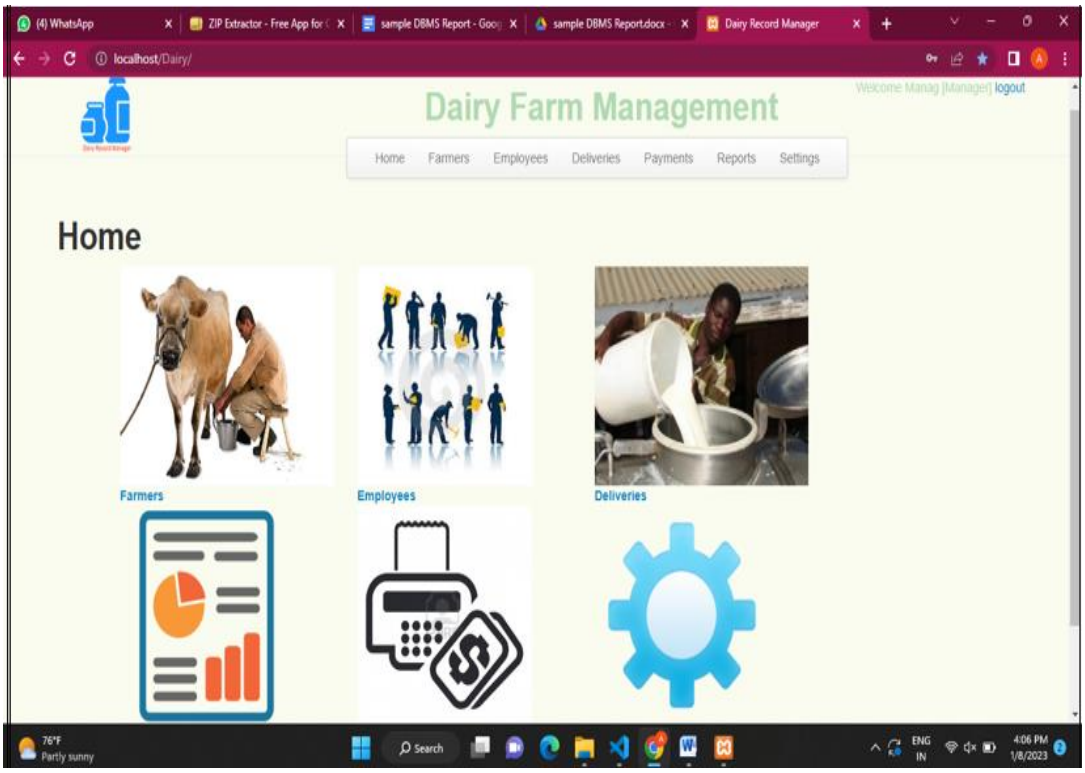
5.3.2 Integration Testing

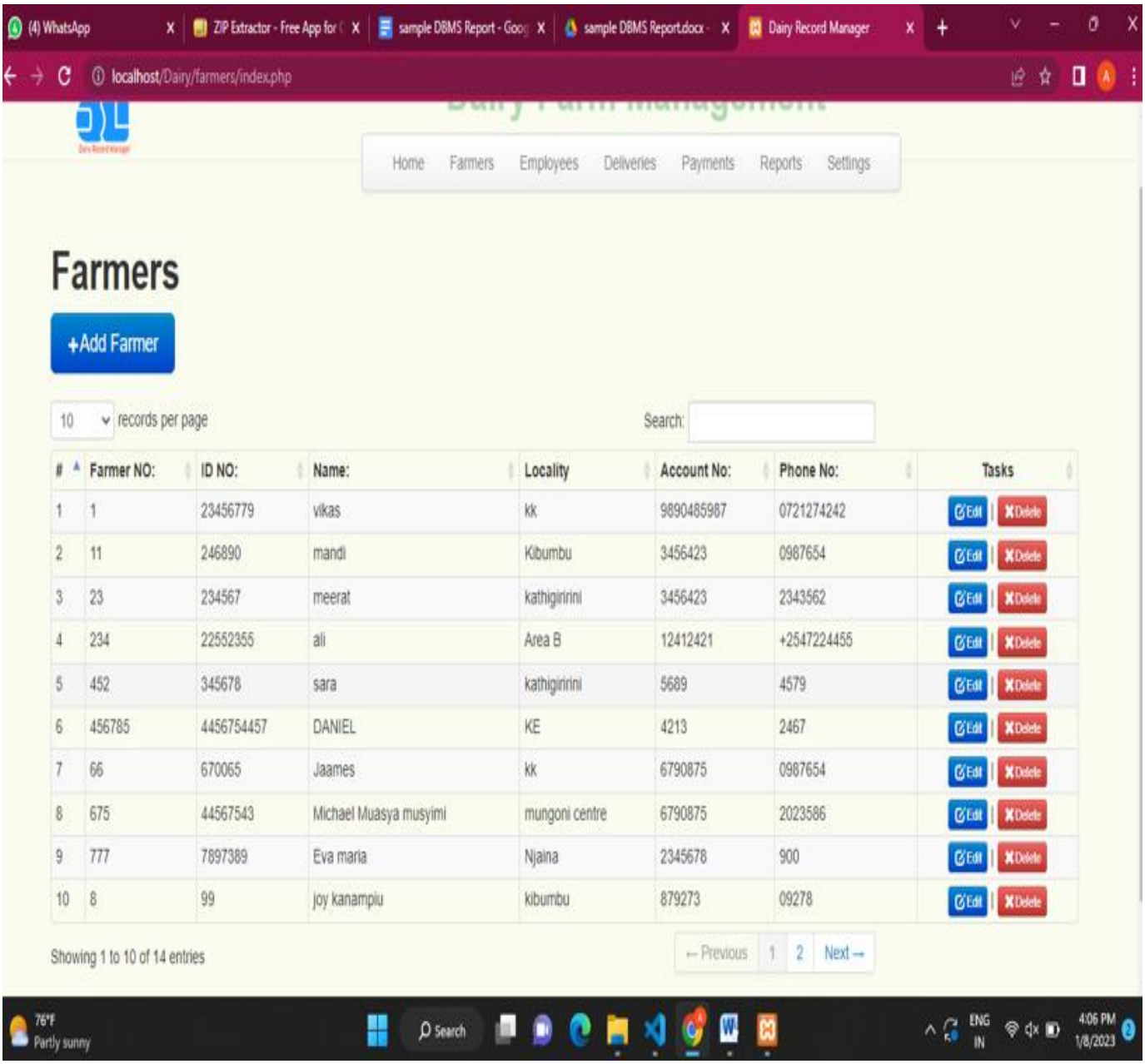
Integration Testing is defined as a type of testing where software modules are integrated logically and tested as a group. A typical software project consists of multiple software modules, coded by different programmers. The purpose of this level of testing is to expose defects in the interaction between these software modules when they are integrated.

TEST UNIT	TEST CASE	RESULT
Login	Click on login button	The system takes the user to their dashboard And admin dashboard
Responsive Design	Resize window	System design, including navbar, sizing, styling,changes
Navbar Button	Click on Userhome/Home	The tab userhome/Admin Home Opens
Add a entity(farmers/employees/deliveries/reports/payments/setting rate)	Fill Form and click on add button	New farmer added and success message displays, if failure error message displayed
Saved Applications	Saved applications button is clicked	Resumes of applicants previously saved by the user can be seen.
Search Saved(farmers/employees/deliveries/reports/payments/setting rate	Search farmers/employees/deliveries/reports/payments/setting rate	Previously Stored entries are successfully displayed and sorted, user can search key words.
Add reports	Opt for either per farmer delivery or total farmer delivery	Get per farmer delivery or total farmer delivery within the respected dates.
Logout	Click on the logout button	Successfully logs out from the user/admin account and leads to login page

5.4 Implementation and ScreenShots



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Home
Farmers
Employees
Deliveries
Payments
Reports
Settings
Farmers
+Add Farmer
10 records per page
Search:
Farmer NO: ID NO: Name: Locality Account No: Phone No: Tasks
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10 8 99 joy kanampiu kibumbu 879273 09278 Edit Delete
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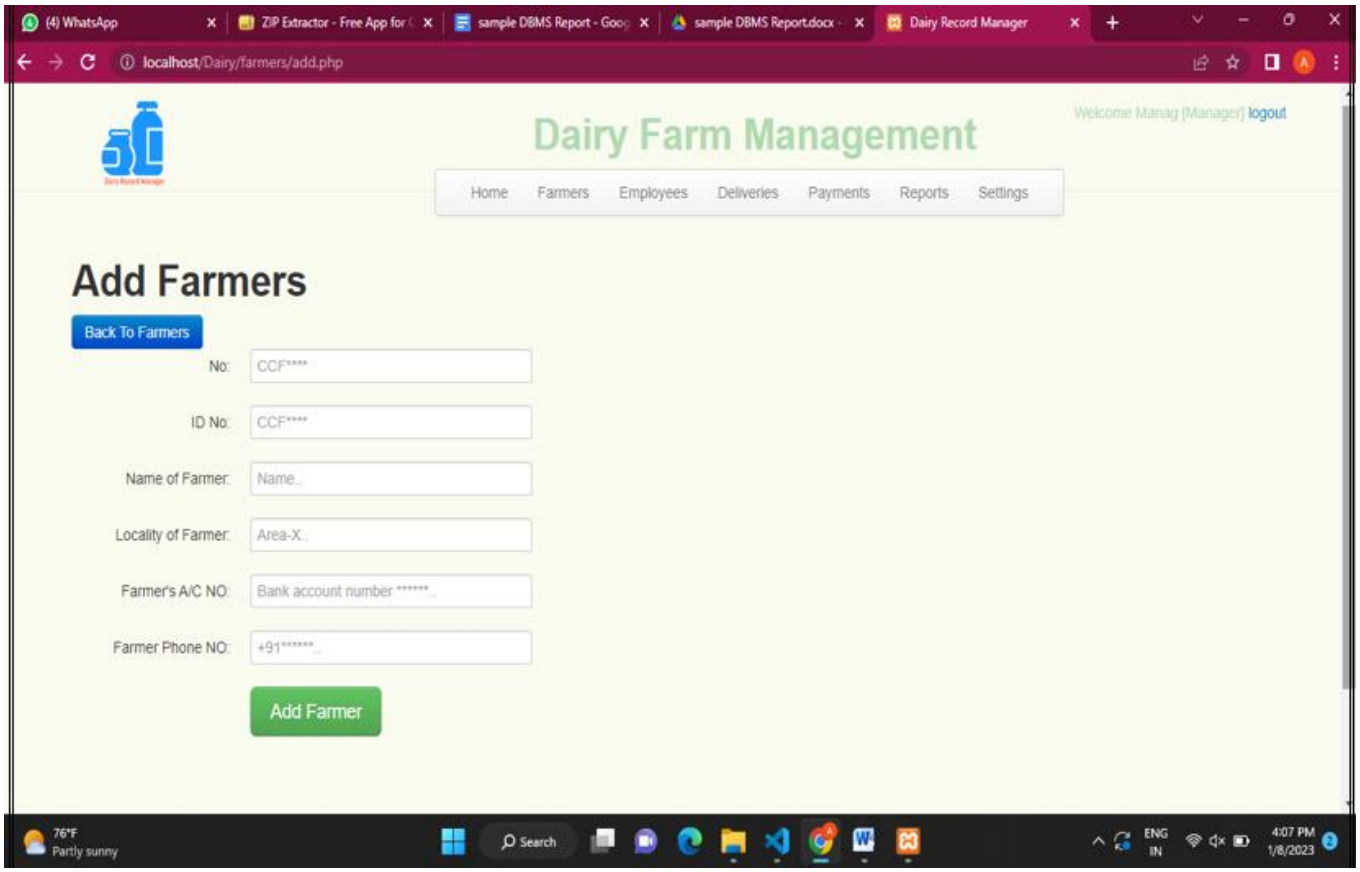
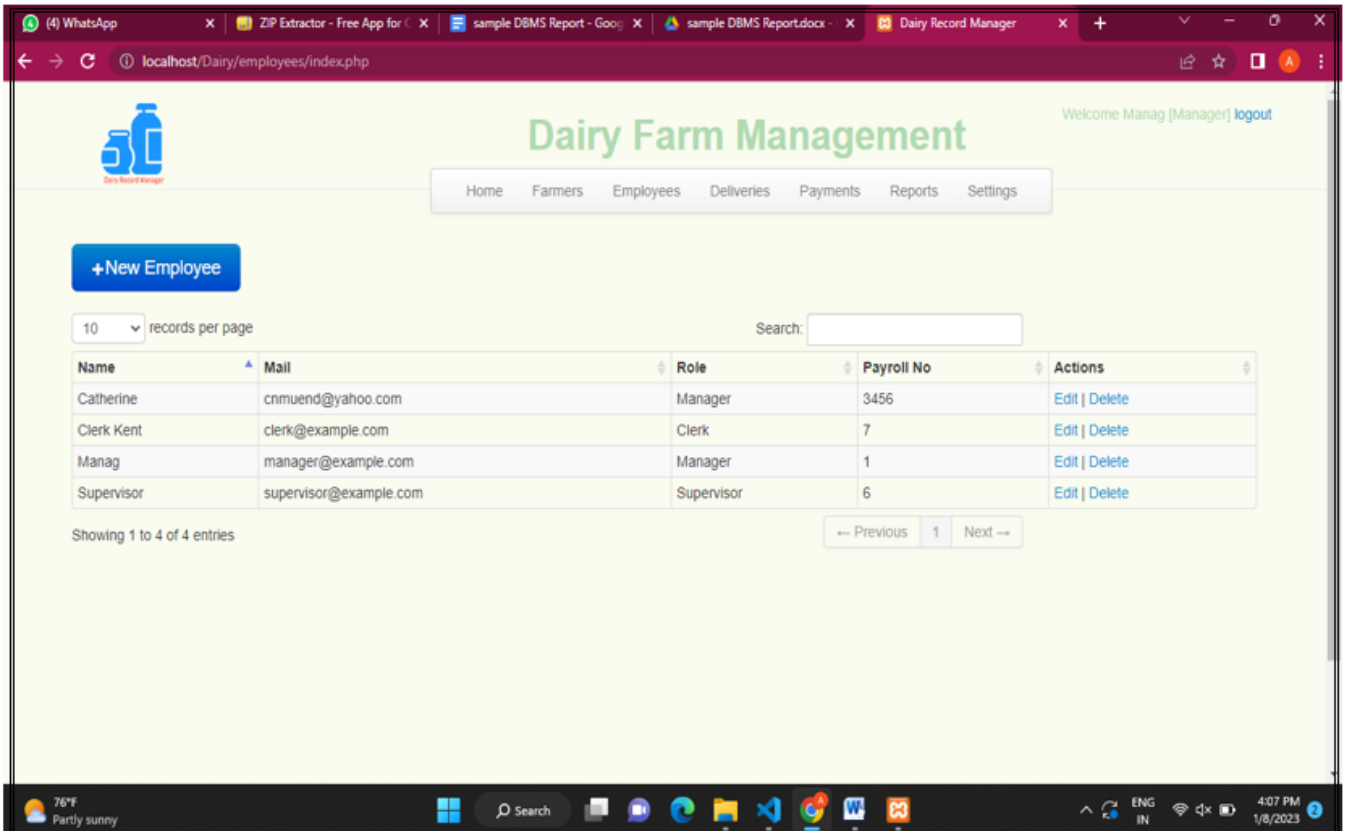

localhost/Dairy/farmers/add.php
Dairy Farm Management
Welcome Manag [Manager] logout
Home
Farmers
Employees
Deliveries
Payments
Reports
Settings
Add Farmers
Back To Farmers
No:
ID No:
Name of Farmer:
Locality of Farmer:
Farmer's A/C NO:
Farmer Phone NO:
Add Farmer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Payments
Reports
Settings
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Search:
Name
Mail
Role
Payroll No
Actions
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Manager
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Edit | Delete
Clerk Kent
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Clerk
7
Edit | Delete
Manag
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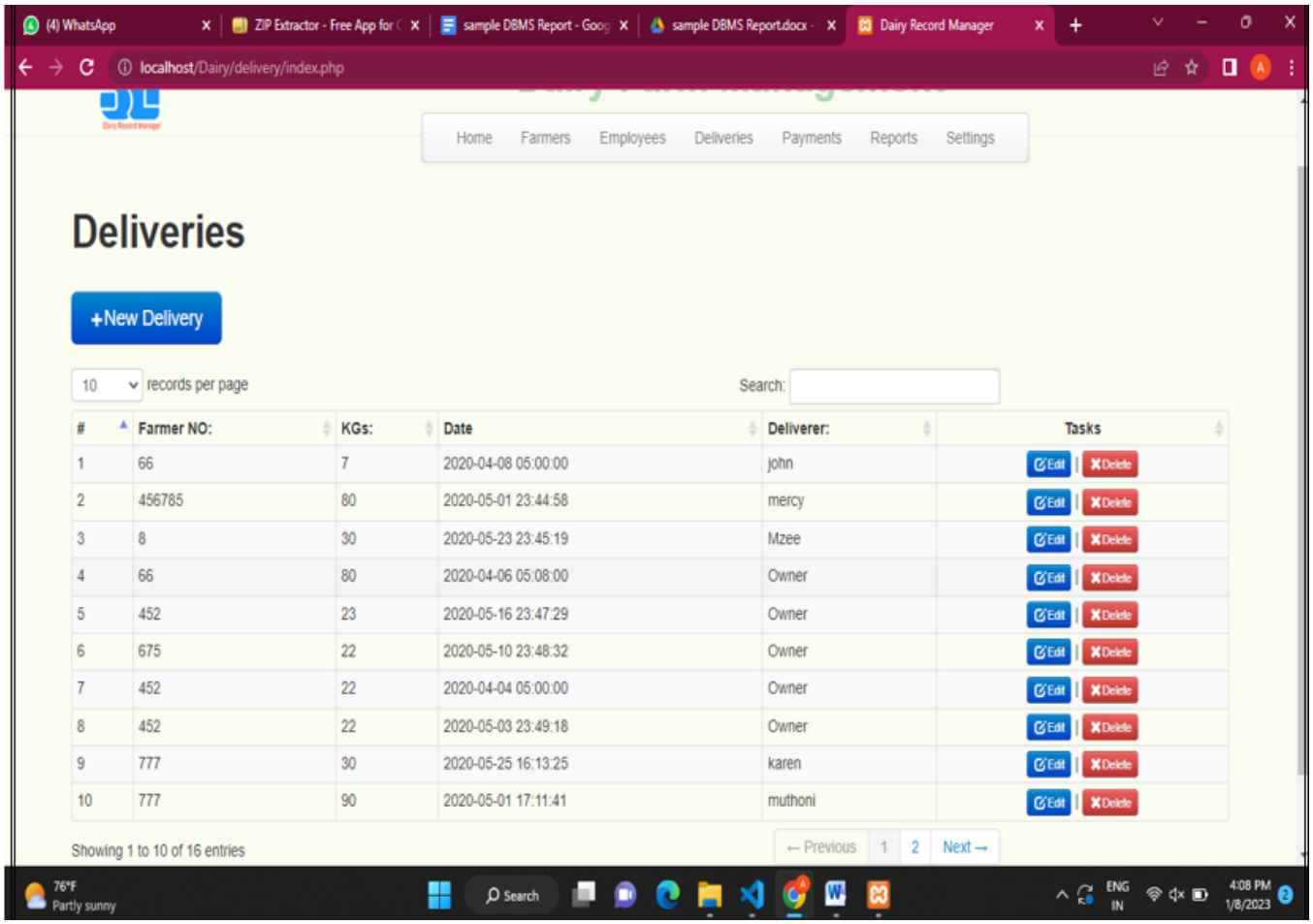
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Farmers
Employees
Deliveries
Payments
Reports
Settings
Deliveries
+New Delivery
10 records per page
Search:
Farmer NO: KGs: Date Deliverer: Tasks
1 66 7 2020-04-08 05:00:00 john Edit Delete
2 456785 80 2020-05-01 23:44:58 mercy Edit Delete
3 8 30 2020-05-23 23:45:19 Mzee Edit Delete
4 66 80 2020-04-06 05:08:00 Owner Edit Delete
5 452 23 2020-05-16 23:47:29 Owner Edit Delete
6 675 22 2020-05-10 23:48:32 Owner Edit Delete
7 452 22 2020-04-04 05:00:00 Owner Edit Delete
8 452 22 2020-05-03 23:49:18 Owner Edit Delete
9 777 30 2020-05-25 16:13:25 karen Edit Delete
10 777 90 2020-05-01 17:11:41 muthoni Edit Delete
Showing 1 to 10 of 16 entries
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76°F
Partly sunny
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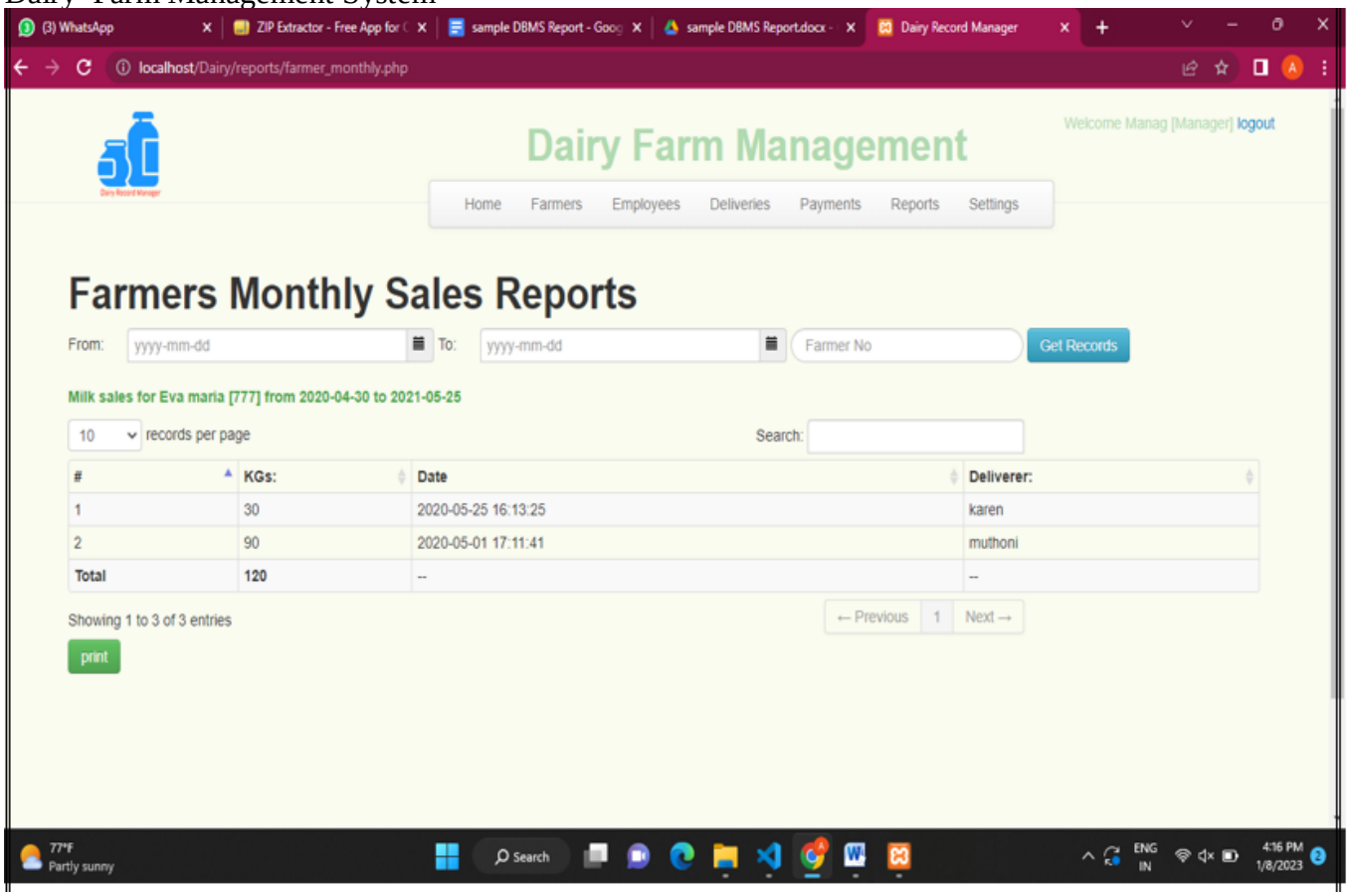
Dairy Farm Management
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Farmers
Employees
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Reports
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yyyy-mm-dd
To:
yyyy-mm-dd
Farmer No
Get Records
Milk sales for Eva maria [777] from 2020-04-30 to 2021-05-25
10
records per page
Search:
KGs: Date Deliverer:
1 30 2020-05-25 16:13:25 karen
2 90 2020-05-01 17:11:41 muthoni
Total 120 -- --
Showing 1 to 3 of 3 entries
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CHAPTER 6

Conclusion And Future Enhancement

6.1 Conclusion

- The "Dairy Farm Management System" is successfully designed and developed to fulfill necessary requirements, as identified in the requirements analysis phase, such as the system is very much user friendly, form level validation and field level validation are performing very efficiently.
- The new computerized system was found to be much faster and reliable and user friendly then then existing system, the system has been designed and developed step by step and tested successfully.
- It eliminates the human error that are likely to creep in the kind of working in which a bulk quantity of data and calculations as to be processed.
- The system results in quick retrieval of information that is very vital for the progress any organization. Cost is minimized in case of stationary.
- Burden of manual work is reduced as whenever transaction takes place, there is a no need to record it in many places manually
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6.2 Future Enhancements

The project has a very vast scope in future. The project can be implemented on intranet in future. Project can be updated in near future as and when requirement for the same arises, as it is very flexible in terms of expansion. With the proposed software of database Space Manager ready and fully functional the client is now able to manage and hence run the entire work in a much better, accurate and error free manner. The following are the future scope for the project.

- We can add poultry and vegetables modules.
- Feedback from farmers and customers.
- Login by recognizing the face of farmers and employees .

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