SAHYADRI
COLLEGE OF ENGINEERING & MANAGEMENT
(An Autonomous Institution)
Adyar,Mangaluru – 575007

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

A PROJECT REPORT
ON

ONLINE AGRICULTURAL MARKETPLACE SYSTEM

BY

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Under the guidance of
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In the partial fulfillment of the requirement for V Sem. B. E. (CSE)

DBMS LABORATORY WITH MINI PROJECT

SAHYADRI

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CERTIFICATE

This is to certify that the project entitled "**ONLINE AGRICULTURAL MARKETPLACE SYSTEM"** is submitted in partial fulfillment for the requirement of V sem. B. E. (Computer Science & Engineering), "DBMS LABORATORY WITH MINI PROJECT" during the year 2023 – 24 is a result of bonafide work carried out by

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1.…….

2. …….

ABSTRACT

The Online Agricultural Marketplace System is a digital platform designed to revolutionize the way agricultural products are traded, connecting farmers directly with buyers in an efficient and transparent manner. With the increasing demand for fresh, sustainable produce and the challenges faced by traditional distribution channels, OAMS offers a comprehensive solution to streamline the agricultural supply chain. It provides a user-friendly interface accessible via web and mobile applications, facilitating seamless interactions between farmers, distributors, retailers, and consumers. Farmers can showcase their products, including fruits, vegetables, grains, and livestock, with detailed descriptions and images. Buyers can browse the extensive catalog, compare prices, and place orders with ease, eliminating the need for intermediaries and reducing transaction costs.

Key features include real-time inventory management, automated payment processing, and logistics optimization. Farmers can manage their inventory levels, update product availability, and receive notifications for new orders, ensuring efficient operations and timely deliveries. The platform integrates secure payment gateways to facilitate transactions, providing assurance to both parties involved. By promoting transparency and traceability throughout the supply chain, it enhances trust and accountability, ensuring the quality and safety of agricultural products.

In conclusion, it represents a paradigm shift in the agricultural industry, empowering farmers, and buyers alike to participate in a more efficient, transparent, and sustainable food ecosystem. With its innovative features and user-centric design, OAMS is poised to revolutionize the way agricultural products are traded, creating value for all stakeholders involved.

ACKNOWLEDGEMENT

It is with great satisfaction and euphoria that we are submitting the Mini Project Report on **"Online Agricultural Marketplace System"** We have completed it as a part of the V semester DBMS Laboratory with Mini Project (21CSL55) of Bachelor of Engineering in Computer Science & Engineering of Visvesvaraya Technological University, Belagavi.

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CHAPTER 1

INTRODUCTION

1.1 Overview of Database Management System

A Database Management System (DBMS) is a software application that facilitates the creation, maintenance, and utilization of databases. It serves as an intermediary between users and databases, offering a structured approach to store, organize, retrieve, and manipulate data. DBMS provides functionalities such as data modeling, query optimization, and transaction management to ensure data integrity, security, and efficiency. It offers users a centralized platform to store and access data, eliminating redundancy and inconsistency while promoting data sharing and collaboration. Overall, a DBMS plays a crucial role in modern information systems by providing a robust framework for managing large volumes of data effectively.

Characteristics of a Database Management System.

- Organizes data in a structured manner using tables, rows, and columns, enabling efficient storage and retrieval of information.
- Ensures that only valid data is stored in the database by enforcing rules such as primary key constraints, foreign key constraints, and data type constraints.
- Implements security measures to protect sensitive data from unauthorized access, modification, or disclosure.
- Manages concurrent access to the database by multiple users or applications to prevent data corruption and inconsistency.
- Provides abstraction layers to separate the logical structure of the database from its physical implementation.

Advantages of a Database Management System

- Improved data organization and accessibility enhance decision-making and productivity.
- Enhanced data integrity and security measures protect against unauthorized access and data loss.
- Efficient query optimization and scalability support better performance and handling of large datasets.

- Centralized management reduces redundancy and inconsistencies, promoting data consistency and collaboration.

Disadvantages of Database Management Systems

- Initial setup and maintenance costs can be high, especially for complex systems.
- Dependency on skilled personnel for administration and troubleshooting may pose challenges.
- System failures or crashes could lead to downtime and potential data loss if not properly backed up.
- Over-reliance on a single system can create vulnerabilities, necessitating robust disaster recovery plans.

1.2 Problem Statement

The existing agricultural supply chain faces inefficiencies and lacks a digital platform for farmers and customers to streamline the buying and selling process. The absence of an online marketplace hinders farmers' ability to reach a wider audience and maximize profits. There is a need for a comprehensive solution that allows farmers to showcase their products, facilitates buyer interaction through purchase requests for quality checks, and ultimately connects farmers with customers in a digital environment. The system should include secure login credentials for both farmers and customers, a centralized data collection mechanism, and dedicated sections for articles and agricultural products to enhance farmers' product visibility and economic viability.

1.3 Objective.

- Enable farmers to showcase and sell their produce directly to consumers, cutting out intermediaries and ensuring fair prices for both parties.

- Provide a platform for farmers to access a wider market reach beyond their local communities, enabling them to sell their products to customers regionally, nationally, and potentially internationally.

- Increase transparency in agricultural product pricing by allowing buyers to compare prices from different sellers, promoting fair competition and ensuring reasonable pricing for consumers.
- Encourage sustainable farming practices by highlighting and incentivizing eco-friendly farming methods and locally sourced products, fostering environmental stewardship and consumer awareness.
- Empower rural communities by providing farmers with a platform to sell their products online, boosting local economies and creating opportunities for income generation and job creation.

1.4 Description

The current state of the agricultural supply chain is plagued by inefficiencies and a lack of a digital platform, posing significant challenges for both farmers and customers. This absence of an online marketplace inhibits farmers from reaching a broader audience and optimizing their profits. The pressing need is for a comprehensive solution that addresses these issues by providing farmers with a platform to showcase their products. The envisioned Online Agricultural Marketplace System aims to revolutionize the buying and selling process in agriculture. It will serve as a digital hub where farmers can exhibit their products, fostering a direct connection with potential customers. By implementing a secure login system for both farmers and customers, the platform ensures a trustworthy and reliable environment. One of the key features of this system is a centralized data collection mechanism, which streamlines information management and enhances overall efficiency in the agricultural supply chain. Moreover, the system will facilitate buyer interaction by allowing purchase requests for quality checks, ensuring transparency and satisfaction in transactions. In conclusion, the envisioned Online Agricultural Marketplace System is poised to revolutionize the agricultural supply chain by providing a digital platform that connects farmers with a broader customer base. By addressing existing inefficiencies, streamlining communication, and enhancing product visibility, this innovative solution seeks to empower farmers economically, foster sustainable agriculture, and create a more resilient and interconnected agricultural ecosystem.

CHAPTER 2

DESIGN

2.1 Entity Relationship Diagram

An Entity Relationship Diagram (ERD) is a visual representation used in database design to illustrate the relationships between entities (such as objects, concepts, or people) within a system. It typically consists of three main components: Entities, Attributes and Relationships.

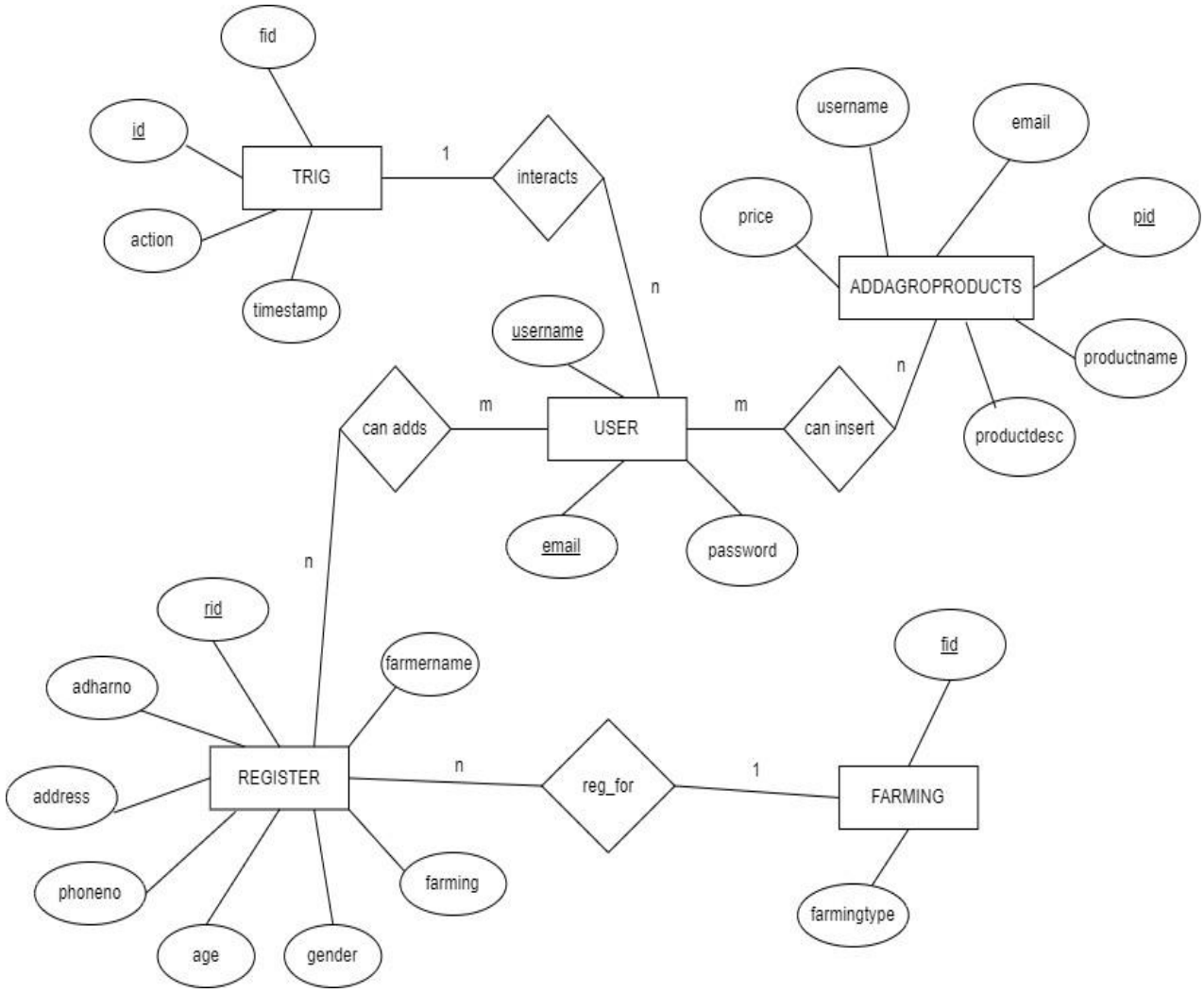
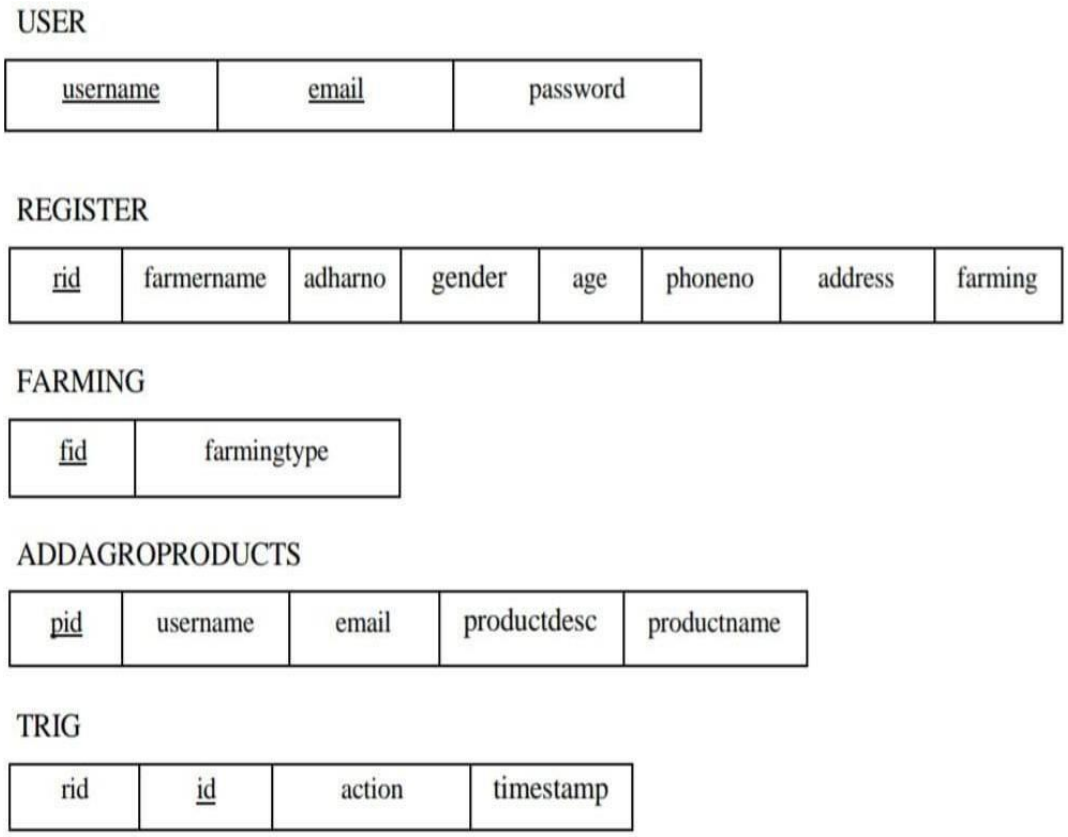


Figure 2.1 Entity Relationship Diagram

2.2 Relational Schema

STEP 1: Mapping of strong entities



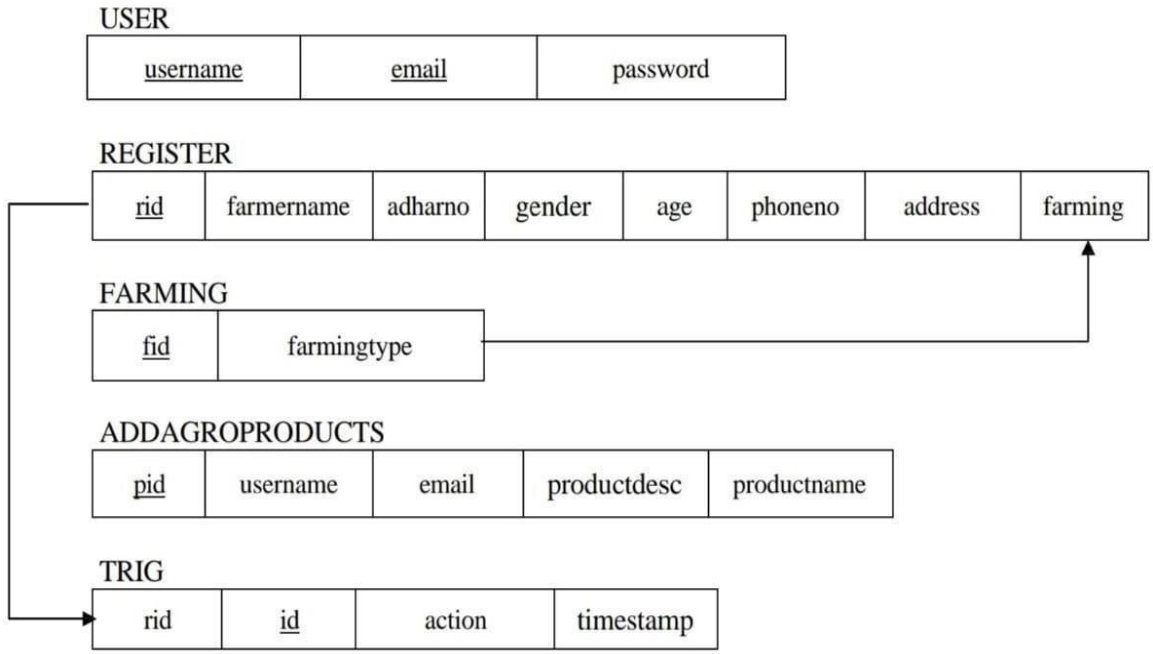
STEP 2: Mapping of weak entities

There are no explicit weak entities in the provided schema

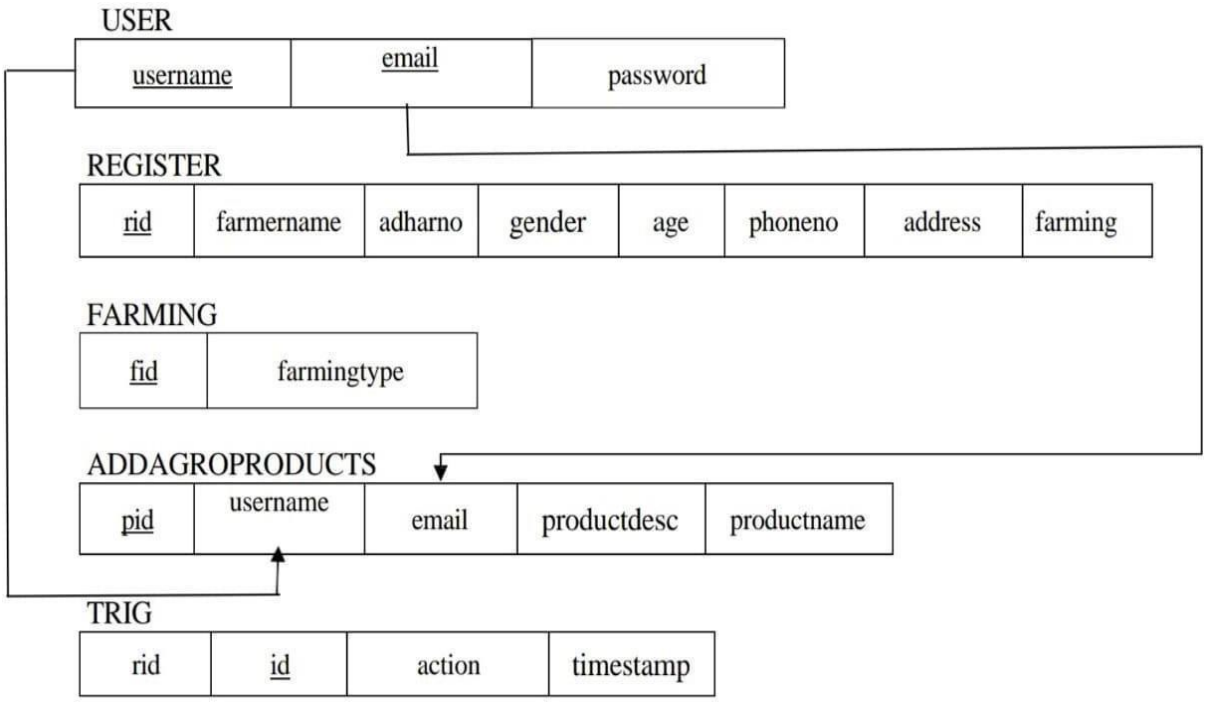
STEP 3: Mapping of binary 1:1 relationship

The ER diagram of the project does not contain 1:1 binary relationship

STEP 4: Mapping of binary 1:N relationship



STEP 5: Mapping of binary M:N relationship



STEP 6: Mapping of multivalued attributes

The ERD of this project does not contain any multivalued attributes

STEP 7: Mapping of N-ary relation

The ERD of this project does not contain N-ary relationship

2.3 Schema Database Relationship Diagram

A database schema is the skeleton structure that represents the logical view of the entire database. It formulates all the constraints that are to be applied on the data. A database schema defines its entities and the relationship among them. It contains a descriptive detail of the database, which can be depicted by means of schema diagrams.

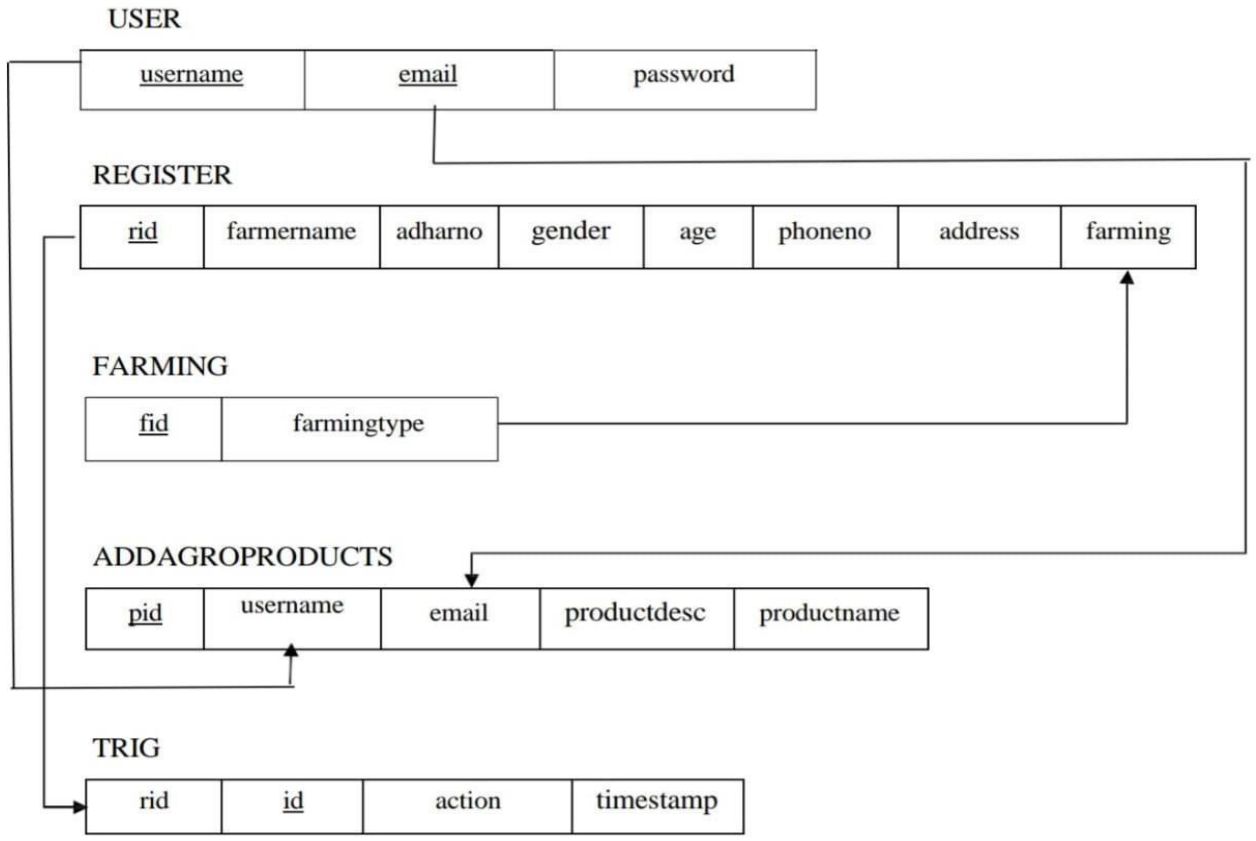


Figure 3.3 Schema Database Relationship Diagram

CHAPTER 3

NORMALIZATION

Normalization rule are divided into following normal form.

1. First Normal Form
2. Second Normal Form
3. Third Normal Form

To determine whether each table in the provided SQL dump is in 1NF, 2NF, or 3NF, we need to analyze their structure and the relationships between their attributes. Let's go through each table:

USER table:

Attributes: id, username, email, password

Primary Key: id

This table is in 1NF, 2NF, and 3NF because all attributes are atomic and depend directly on the primary key.

REGISTER table:

Attributes: rid, farmername, adharnumber, age, gender, phonenumber, address, farming

Primary Key: rid

This table is in 1NF because each attribute contains atomic values.

It's in 2NF because all non-prime attributes depend on the whole primary key (rid). There are no partial dependencies.

However, it's not in 3NF because there is a transitive dependency between rid and farming. The farming attribute depends on rid, which is not a candidate key. To achieve 3NF, farming should be a foreign key referencing the farming table.

FARMING table:

Attributes: fid, farmingtype

Primary Key: fid

This table is in 1NF because each attribute contains atomic values.

It's also in 2NF and 3NF as there are no partial or transitive dependencies. All attributes depend on the

primary key.

ADDAGROPRODUCTS table:

Attributes: username, email, pid, productname, productdesc, price

Primary Key: pid

This table is in 1NF because each attribute contains atomic values.

It's also in 2NF because there are no partial dependencies. Each non-prime attribute (productname, productdesc, price) depends on the whole primary key.

And it's in 3NF because there are no transitive dependencies. All non-key attributes depend directly on the primary key.

TRIG table:

Attributes: id, fid, action, timestamp

Primary Key: id

This table is in 1NF, 2NF, and 3NF because all attributes are atomic and depend directly on the primary key.

CHAPTER 4

IMPLEMENTATION

4.1 Table Creation

USER

```
CREATE TABLE USER (
id int(11) NOT NULL AUTO_INCREMENT,
username varchar(50) NOT NULL,
email varchar(50) NOT NULL,
password varchar(500) NOT NULL,
PRIMARY KEY (id)
);
```

REGISTER

```
CREATE TABLE REGISTER (
rid int(11) NOT NULL AUTO_INCREMENT,
farmername varchar(50) NOT NULL,
adharnumber varchar(20) NOT NULL,
age int(100) NOT NULL,
gender varchar(50) NOT NULL,
phonenumber varchar(12) NOT NULL,
address varchar(50) NOT NULL,
farming int(11) NOT NULL,
PRIMARY KEY (rid),
CONSTRAINT fk_farming
FOREIGN KEY (farming)
REFERENCES farming (fid)
ON DELETE CASCADE
);
```

FARMING

```
CREATE TABLE FARMING (
fid int(11) NOT NULL AUTO_INCREMENT,
farmingtype varchar(200) NOT NULL,
PRIMARY KEY (fid)
);
```

ADDAGROPRODUCTS

```
CREATE TABLE ADDAGROPRODUCTS (
username varchar(50) NOT NULL,
email varchar(50) NOT NULL,
pid int(11) NOT NULL AUTO_INCREMENT,
productname varchar(100) NOT NULL,
productdesc text NOT NULL,
price int(100) NOT NULL,
PRIMARY KEY (pid)
);
```

TRIG

```
CREATE TABLE TRIG (
id int(11) NOT NULL AUTO_INCREMENT,
fid int(11) NOT NULL,
action varchar(50) NOT NULL,
timestamp datetime NOT NULL,
PRIMARY KEY (id),
CONSTRAINT fk_register
FOREIGN KEY (fid)
REFERENCES register (rid)
ON DELETE CASCADE
);
```

CHAPTER 5

RESULTS

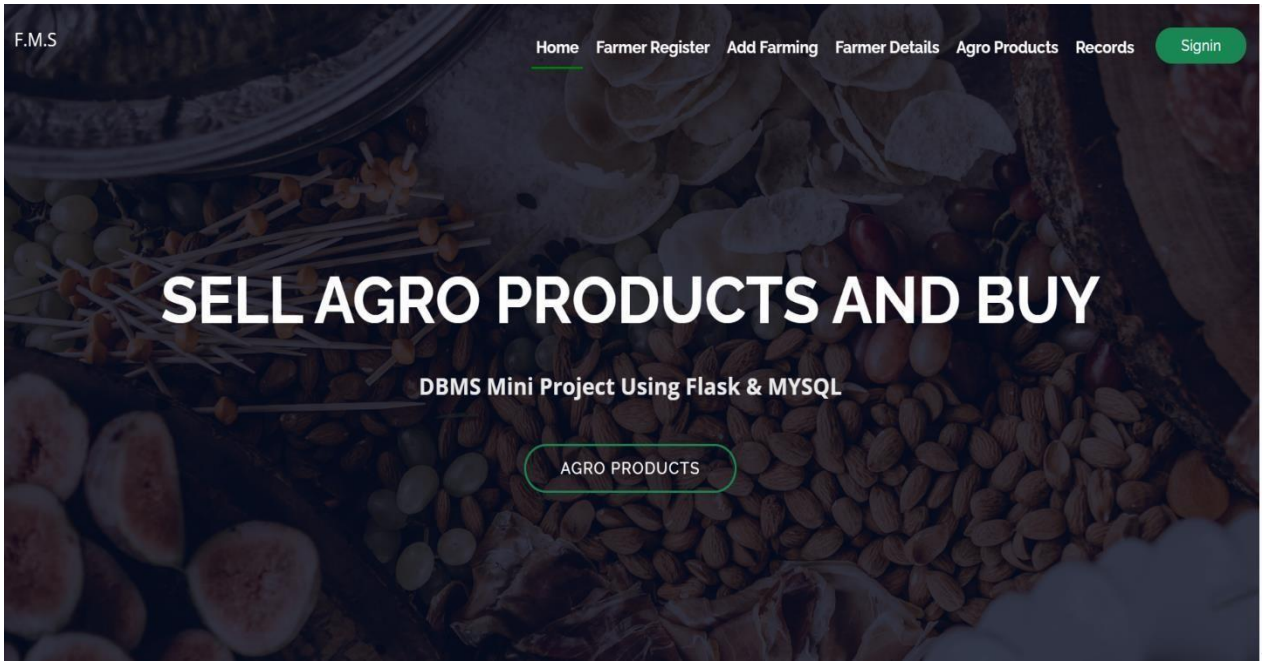


Figure 5.1: Home page.

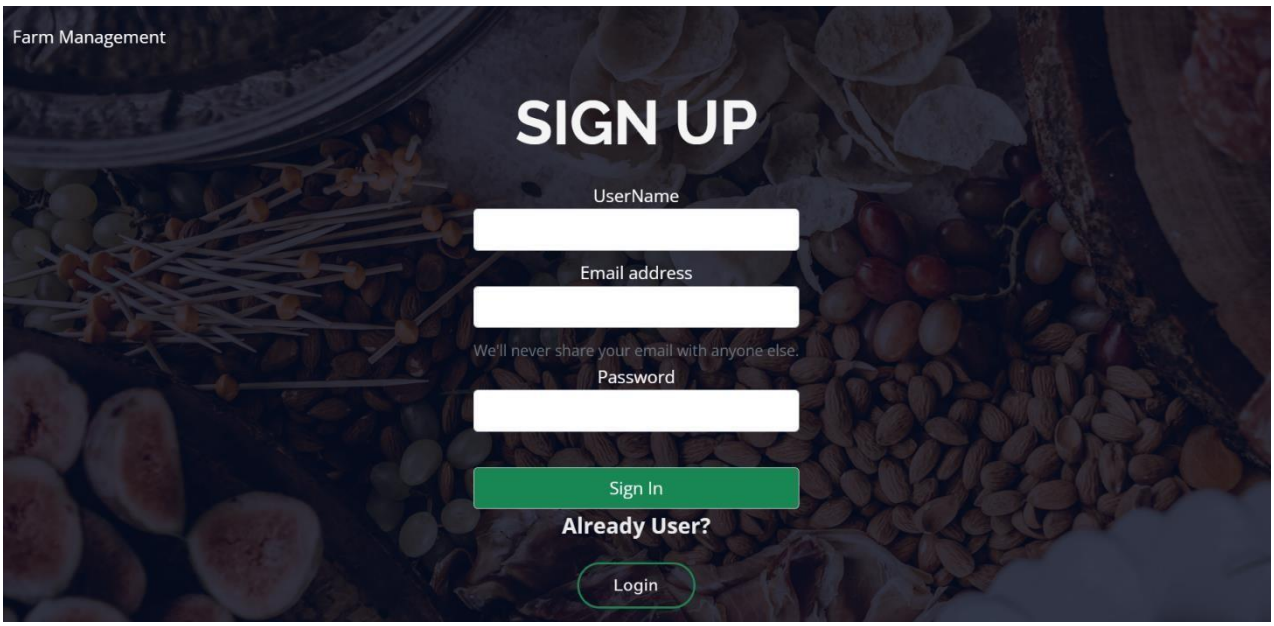


Figure 5.2: Sign Up Page

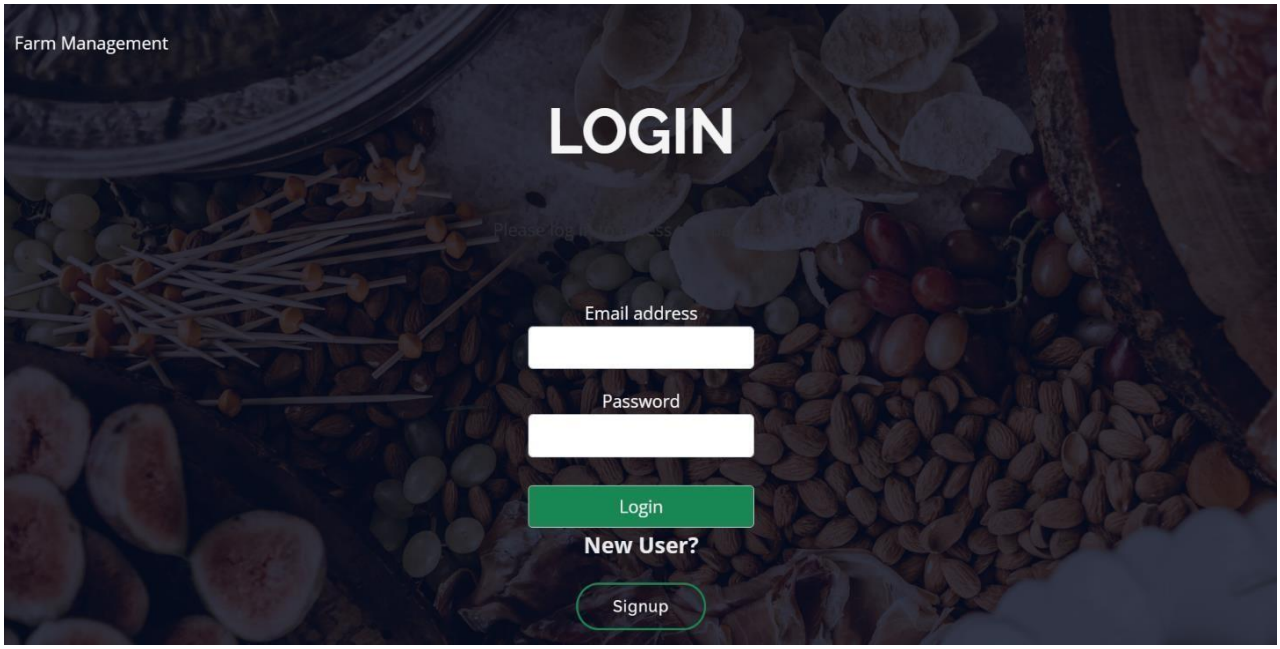


Figure 5.3: Login Page

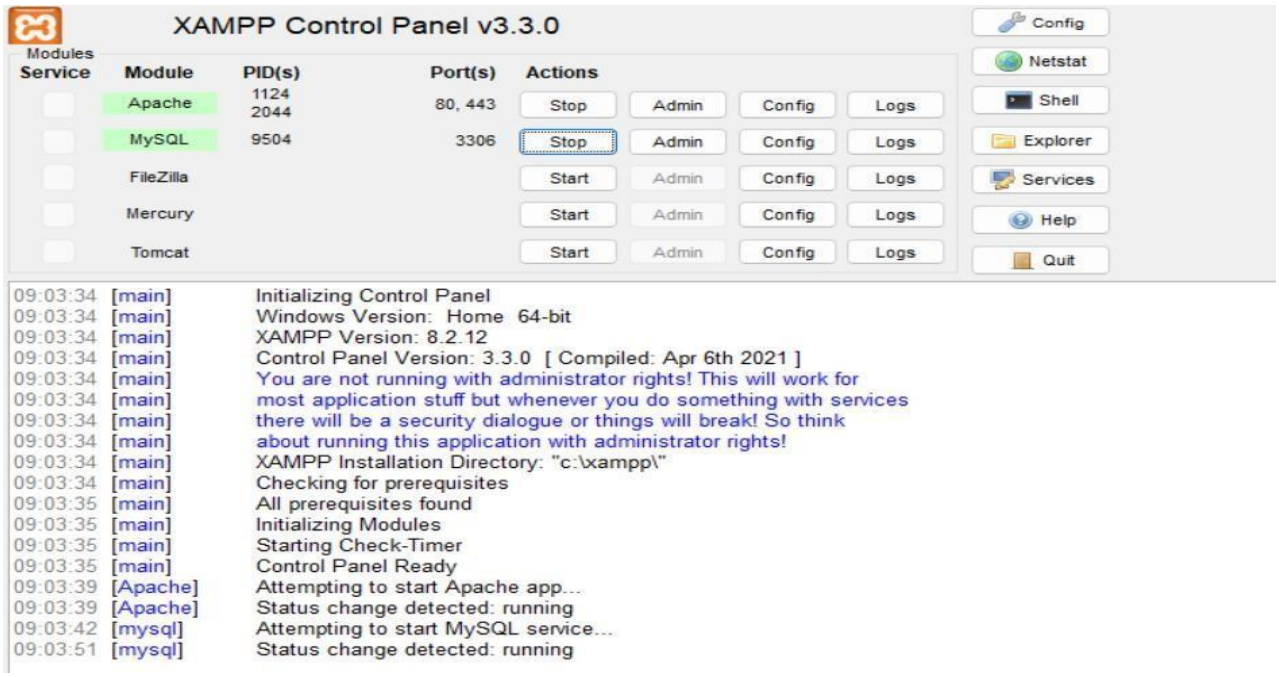


Figure 5.4: Xampp Control Panel

CHAPTER 6

CONCLUSION

Conclusion:

The Online Agricultural Marketplace System serves as a comprehensive platform facilitating interactions between farmers and consumers within the agricultural sector. Through this system, farmers can showcase their produce, ranging from crops to livestock, while consumers can browse and purchase these goods conveniently online. The system incorporates features such as user registration, product listings with detailed descriptions, pricing, and secure payment gateways to ensure seamless transactions. Additionally, it offers a dynamic environment where farmers can connect with potential buyers, negotiate deals, and receive feedback, fostering a sense of community and trust. By leveraging technology to bridge the gap between producers and consumers, the Online Agricultural Marketplace System not only promotes transparency and efficiency in agricultural transactions but also contributes to the growth and sustainability of the agricultural industry as a whole.