

FarmLink - Linking Farms To Your Table

COURSE PROJECT REPORT

18CSC303J – DATABASE MANAGEMENT SYSTEMS

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By

GOVIND KALAWATE (RA2111033010048)

Under the guidance of

Dr. M KIRUTHIKA

Assistant Professor

Department of Computational Intelligence



DEPARTMENT OF COMPUTATIONAL INTELLIGENCE

FACULTY OF ENGINEERING AND TECHNOLOGY

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

Kattankulathur, Kancheepuram

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Certified that this project report titled "**FarmLink- Linking Farms To your Table**" is a bonafide work done by **GOVIND KALAWATE (RA2111033010048)** who carried out the project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other project work or dissertation.

SIGNATURE

Faculty In-Charge

Dr. M.Kiruthika

Assistant Professor

Department of Computational

Intelligence

SRM Institute of Science and Technology

Kattankulathur

SIGNATURE

Head of Department

Dr. R. Annie Uthra

Professor

Department of Computational

Intelligence

SRM Institute of Science and Technology

Kattankulathur

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Govind Kalawate (RA2111033010048)

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CHAPTER-1

INTRODUCTION

FarmLink is the farmer system where they can plan, monitor and analyse the activity of the farmers production system. It manages farmer operation with one system and organises data in one place. It helps smart farmers become even smarter. This creates in partnership with growers and buyers. It inspire farmer to produce and buyers to consume fresh goods.

FarmLink System will make better connection among Farmers and Buyers ensure quality food. Standardise and increases efficiency of agro culture process.

Agriculture encompasses crop and livestock production, aquaculture, fisheries, and forestry for food and non-food products. Agriculture was the key development in the rise of sedentary human civilization, whereby farming of domesticated species created food surpluses that enabled people to live in cities. While humans started gathering grains at least 105,000 years ago, nascent farmers only began planting them around 11,500 years ago. Sheep, goats, pigs, and cattle were domesticated around 10,000 years ago. Plants were independently cultivated in at least 11 regions of the world. In the 20th century, industrial agriculture based on large-scale monocultures came to dominate agricultural output.

As of 2024, small farms produce about one-third of the world's food, but large farms are prevalent. The largest 1% of farms in the world are greater than 50 hectares (120 acres) and operate more than 70% of the world's farmland. Nearly 40% of agricultural land is found on farms larger than 1,000 hectares (2,500 acres). However, five of every six farms in the world consist of less than 2 hectares (4.9 acres) and take up only around 12% of all agricultural land. Farms and farming greatly influence rural economics and greatly shape rural society, effecting both the direct agricultural workforce and broader businesses that support the farms and farming populations.

The major agricultural products can be broadly grouped into foods, fibers, fuels, and raw materials (such as rubber). Food classes include cereals (grains), vegetables, fruits, cooking oils, meat, milk, eggs, and fungi. Global agricultural production amounts to approximately 11 billion tonnes of food 32 million tonnes of natural fibres and 4 billion m³ of wood.

However, around 14% of the world's food is lost from production before reaching the retail level. Modern agronomy, plant breeding, agrochemicals such as pesticides and fertilisers, and technological developments have sharply increased crop yields, but also contributed to ecological and environmental damage.

Selective breeding and modern practices in animal husbandry have similarly increased the output of meat, but have raised concerns about animal welfare and environmental damage. Environmental issues include contributions to climate change, depletion of aquifers, deforestation, antibiotic resistance, and other agricultural pollution. Agriculture is both a cause of and sensitive to environmental degradation, such as biodiversity loss, desertification.

CHAPTER-2

PROJECT FEATURES AND OBJECTIVES

1. About the project:

FarmLink is the farmer system where they can plan, monitor and analyze the activity of the farmers production system. It manages farmer operation with one system and organizes data in one place. It helps smart farmers become even smarter. This creates in partnership with growers and buyers. It inspire farmer to produce and buyers to consume fresh goods.

FarmLink system will make better connection among Farmers and Buyers ensure quality food. Standardize and increases efficiency of agro culture process.

2. Main features of FarmLink:

- 1. Qualitative Food Supply :** The project aims to provide high-quality foods to buyers, ensuring that consumers have access to fresh and healthy produce.
- 2. Automated/Online FarmLink System :** Implementing a digital platform to streamline farming operations, allowing farmers to plan, monitor, and analyse their activities online.
- 3. Inspiring Farmers for Quality Goods :** Encouraging farmers to produce quality goods and efficiently supply them to buyers, thus fostering a culture of excellence in farming practices.
- 4. Eco-Friendly Farming :** Promoting eco-friendly farming systems that are sustainable and minimise environmental impact.
- 5. Efficiency and Convenience :** Lessening the effort and labor intensity involved in agriculture by focusing on creating, managing, and running a secure quality food supply. This includes increasing convenience for both buyers and sellers.

- 6. Easy Management :** Providing an easy-to-use management system that simplifies tasks related to farming operations and supply chain management.
- 7. Software Development Methodology :** Utilising PHP and PHPMYADMIN for database design and backend development, with a focus on organizational aspects of software development.
- 8. Project Framework :** Employing a standardised set of concepts, practices, and criteria to address common problems in agricultural systems. This framework helps save time and effort by providing a common structure for development.
- 9. Data and Information Management :** Efficiently storing and analysing data related to crop yields, soil conditions, weather patterns, and resource allocation. This allows farmers to make informed decisions for enhanced productivity and sustainable agricultural practices.
- 10. Data Sources :** Gathering primary data through observations, discussions, and interactions with stakeholders, as well as utilising secondary sources such as annual reports and related websites to obtain factual information for the project.

3. Objectives of FarmLink:

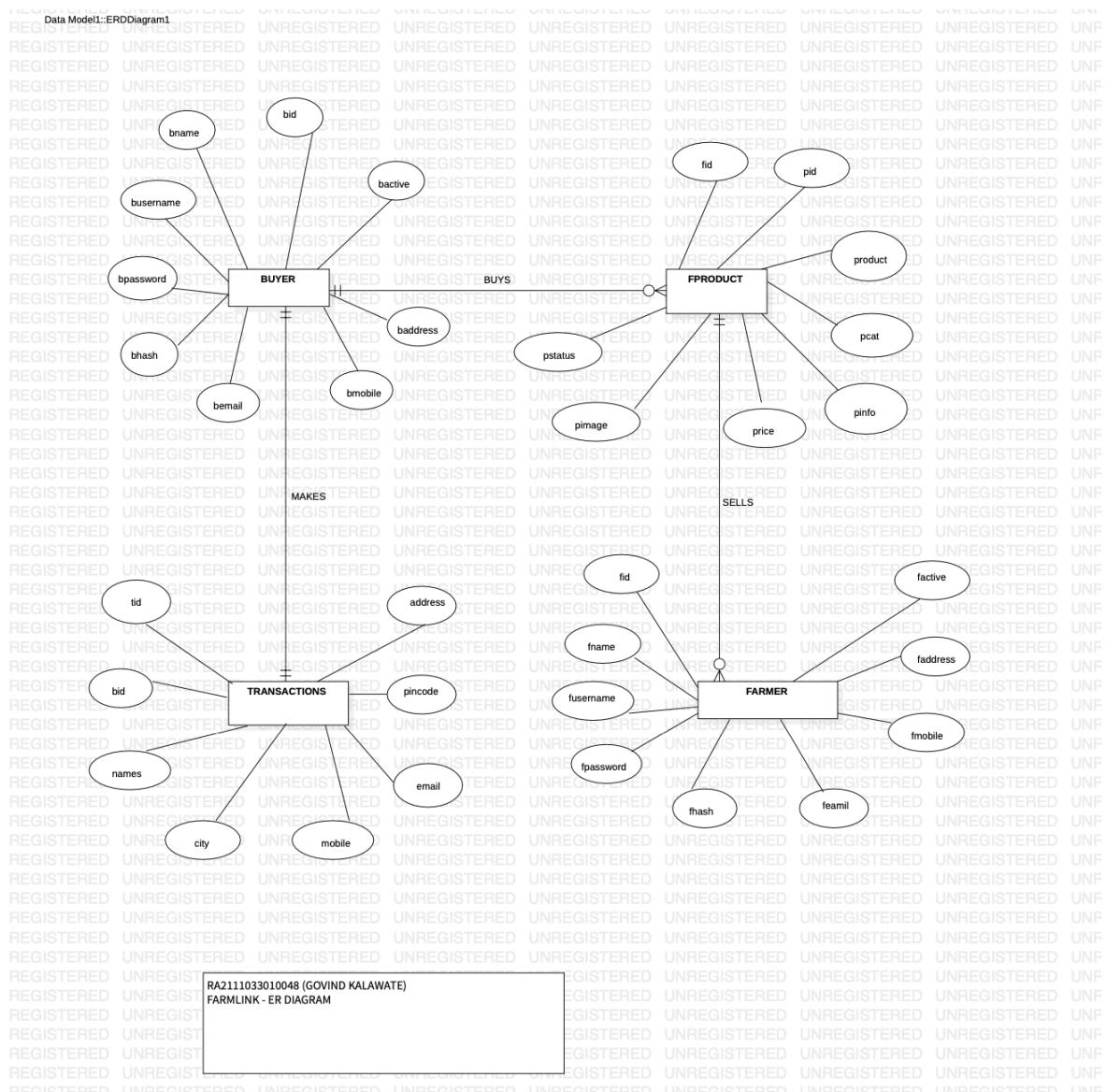
1. To provide qualitative foods to the buyers :
2. Implementing an automated/online FarmLink system.
3. To inspire farmer to produce quality goods and supply to the buyers.
4. Eco-friendly farming system.

CHAPTER-3

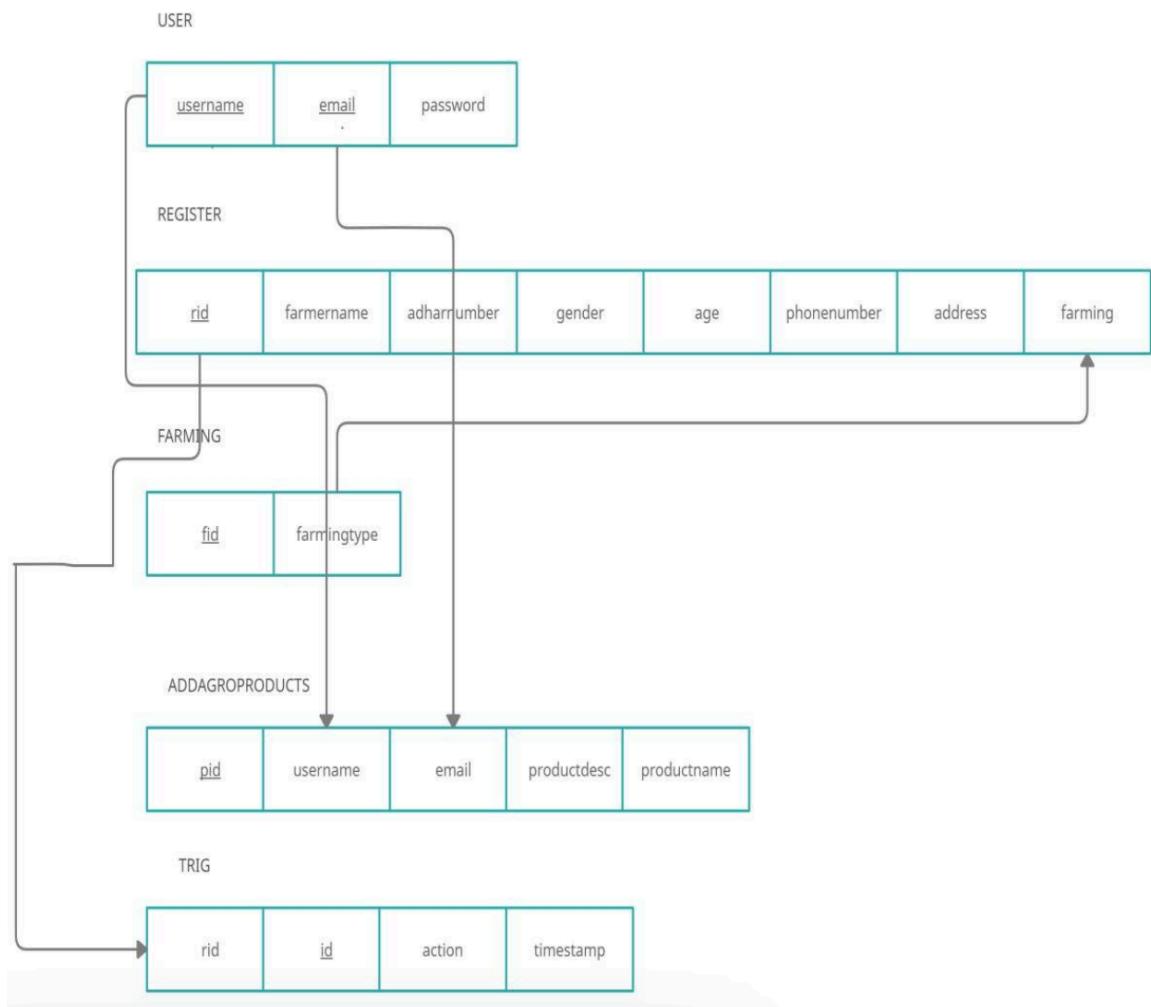
Back , Front End Design & Connectivity

3.1. Back End Design:

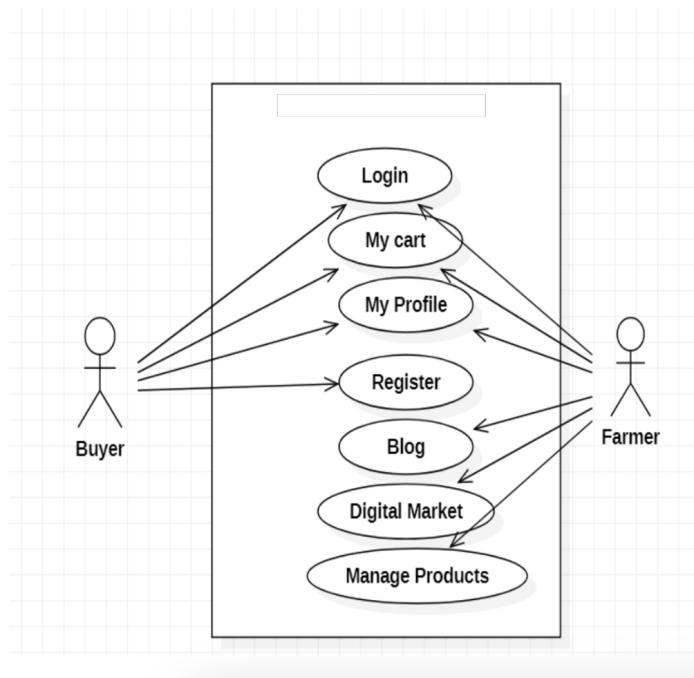
Conceptual Database Design(ER-Diagram):



Logical Database Design(ER Mapping):



Use Case Diagram:



1. SQL (Structured Query Language)

SQL is the standard language used to interact with relational databases.

It allows users to perform various operations such as querying data, updating records, and managing database structures. SQL is essential for storing, retrieving, and manipulating data efficiently.

2. PHPMyAdmin

PHPMyAdmin is a web-based tool written in PHP used for administering MySQL databases. It provides a graphical interface to manage databases, tables, columns, relationships, and execute SQL queries. PHPMyAdmin simplifies database management tasks and is widely used by developers and database administrators.

3. InnoDB

InnoDB is a storage engine for MySQL databases that provides ACID (Atomicity, Consistency, Isolation, Durability) compliance and transaction support. It ensures data integrity and reliability by supporting features like foreign key constraints, row-level locking, and crash recovery. InnoDB is known for its high-performance and scalability, making it suitable for mission-critical applications.

3.2. FRONT-END DESIGN

1. **HTML** provides the *basic structure* of sites, which is enhanced and modified by other technologies like CSS and JavaScript.
2. **CSS** is used to control presentation, formatting, and layout.
3. **JavaScript** is used to control the behavior of different elements.

HTML

HTML is at the core of every web page, regardless the complexity of a site or number of technologies involved. It's an essential skill for any web professional.

It's the starting point for anyone learning how to create content for the web. And, luckily for us, it's surprisingly easy to learn.

CSS

CSS stands for Cascading Style Sheets. This programming language dictates how the HTML elements of a website should actually appear on the frontend of the page.

JavaScript

JavaScript is a more complicated language than HTML or CSS, and it wasn't released in beta form until 1995. Nowadays, JavaScript is supported by all modern web browsers and is used on almost every site on the web for more powerful and complex functionality.

3.3. Connectivity (front end and Back end):

1. Form Submission:

HTML forms are often used in frontend web development to collect user input. PHP scripts handle form submission by processing the form data sent from the frontend. Using PHP, you can access form data via the `$_POST` or `$_GET` superglobal arrays and perform actions based on user input.

2. AJAX (Asynchronous JavaScript and XML):

AJAX enables asynchronous communication between the browser and server without reloading the entire page.

JavaScript functions in the frontend make XMLHttpRequests to PHP scripts in the backend to fetch or send data.

PHP scripts process the requests, perform database operations or other tasks, and return the results to the frontend for display or further processing.

3. Server-Side Rendering:

PHP can generate HTML content dynamically based on data retrieved from databases or other sources.

PHP scripts render HTML templates or pages with embedded PHP code that generates dynamic content.

The rendered HTML is sent to the frontend for display in the user's browser.

4. Session Management:

PHP provides session management features for maintaining user sessions across multiple requests.

Sessions are used to store user-specific data, such as login credentials or shopping cart items, between page visits.

PHP sessions enable personalized user experiences and secure authentication mechanisms in web applications.

5. Database Connectivity:

PHP facilitates connectivity to relational databases such as MySQL, PostgreSQL, or SQLite.

PHP scripts use database extension libraries (e.g., mysqli or PDO) to establish connections to databases, execute SQL queries, and retrieve or manipulate data.

Data fetched from databases can be processed by PHP and sent to the frontend for display or further processing.

CHAPTER-4

OUTPUT

1. Home

The screenshot shows the FarmLink homepage running on a local server (localhost). The top navigation bar includes links for Home, MyCart, My Profile, Digital-Market, and BLOG. The main banner features a cartoon illustration of a smiling farmer in a field, with the text "FarmLink" and "Linking Farms to Your Table." Below the banner are "LOGIN" and "REGISTER" buttons. The central green section contains the FarmLink logo and the tagline "Explore the new way of trading...". At the bottom, there are three circular icons: "Digital Market" (clock icon), "Agro-Blog" (speech bubble icon), and "Register with us" (person icon).

FarmLink

Linking Farms to Your Table.

LOGIN REGISTER

FarmLink

Explore the new way of trading...

Digital Market Agro-Blog Register with us

About Us

FarmLink ©

FarmLink
Chennai

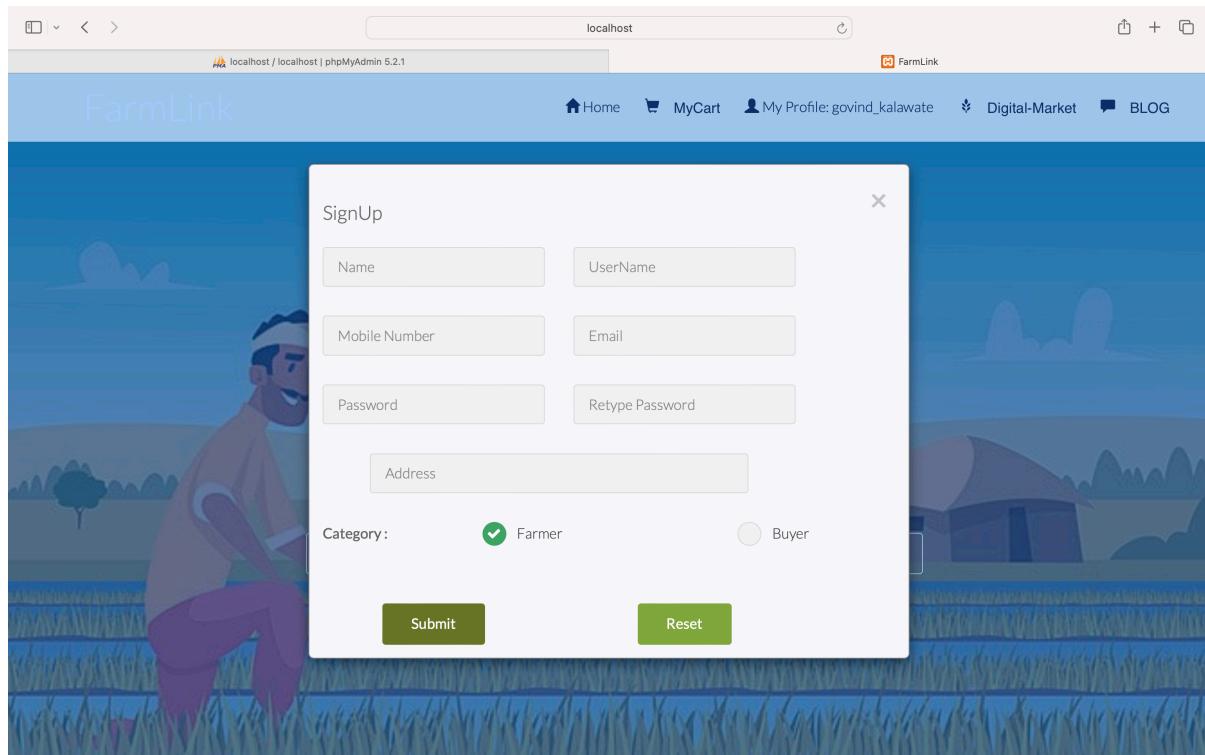
7666486747

ga3211@srmist.edu.in

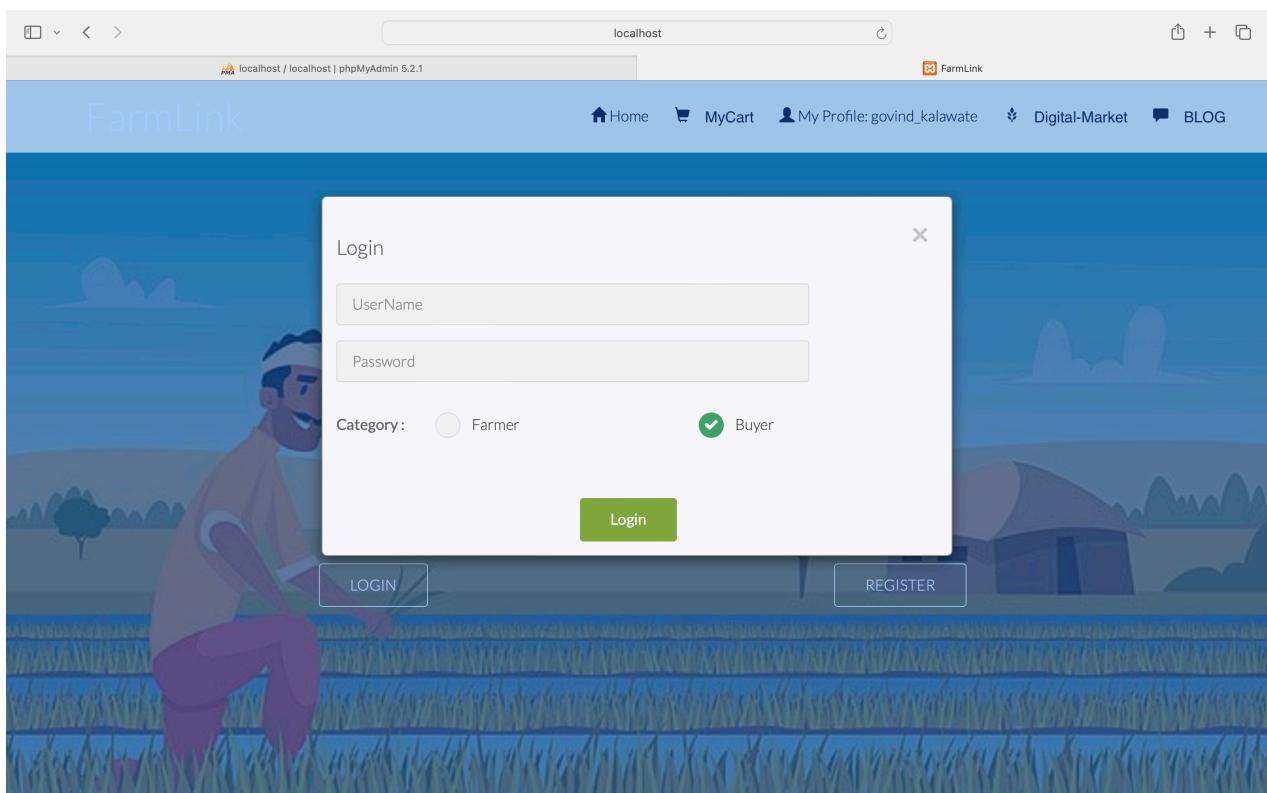
FarmLink
Linking Farms to Your Table.....

f i t

2. Farmer's & Buyer's SignUp



3. Farmer's & Buyer's Login



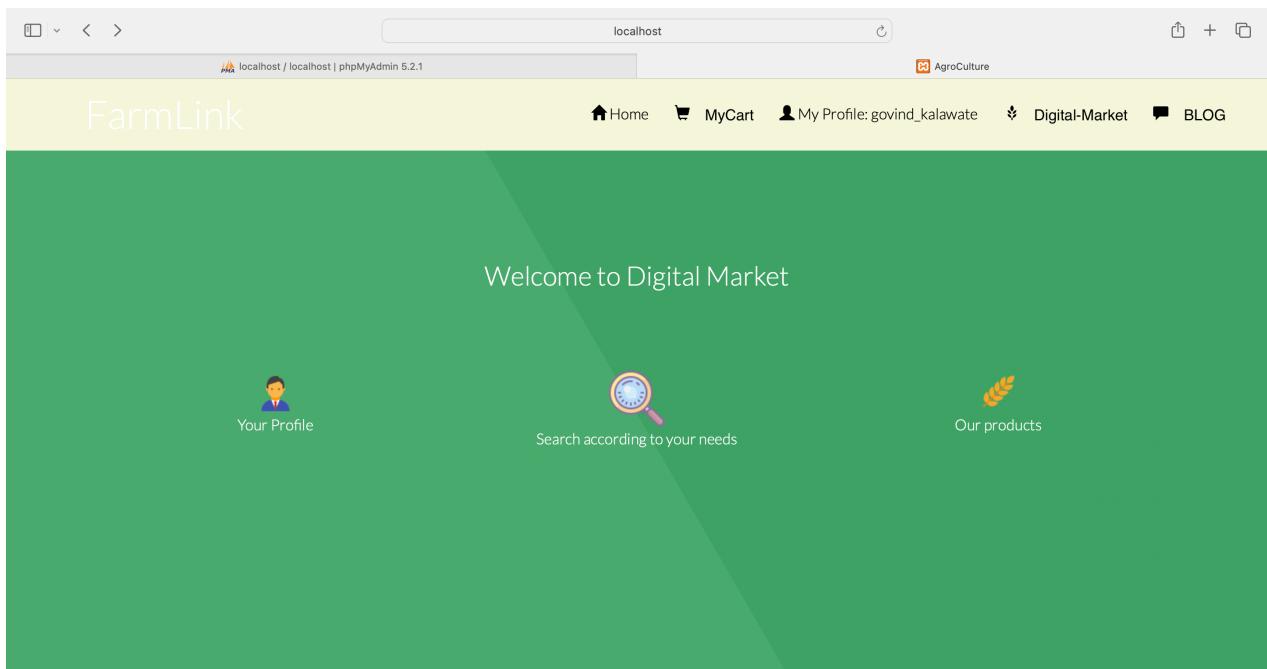
4. My Profile

The screenshot shows the FarmLink My Profile page. At the top, there is a navigation bar with links for Home, MyCart, My Profile (current user: govind_kalawate), Digital-Market, and BLOG. Below the navigation bar is a large green header area featuring a placeholder profile picture of a person in a suit. Below the picture, the text "Govind Kalawate [RA2111033010048]" is displayed. Underneath this, the user's name "govind_kalawate" is shown. In the middle section, there are two columns of information: "RATINGS: 0" and "Email ID: ga3211@srmist.edu.in" on the left, and "Mobile No: 7666486747" and "ADDRESS: SRMIST" on the right. At the bottom of the green area, there are four red rectangular buttons labeled "Change Password", "Edit Profile", "Upload Product", and "LOG OUT".

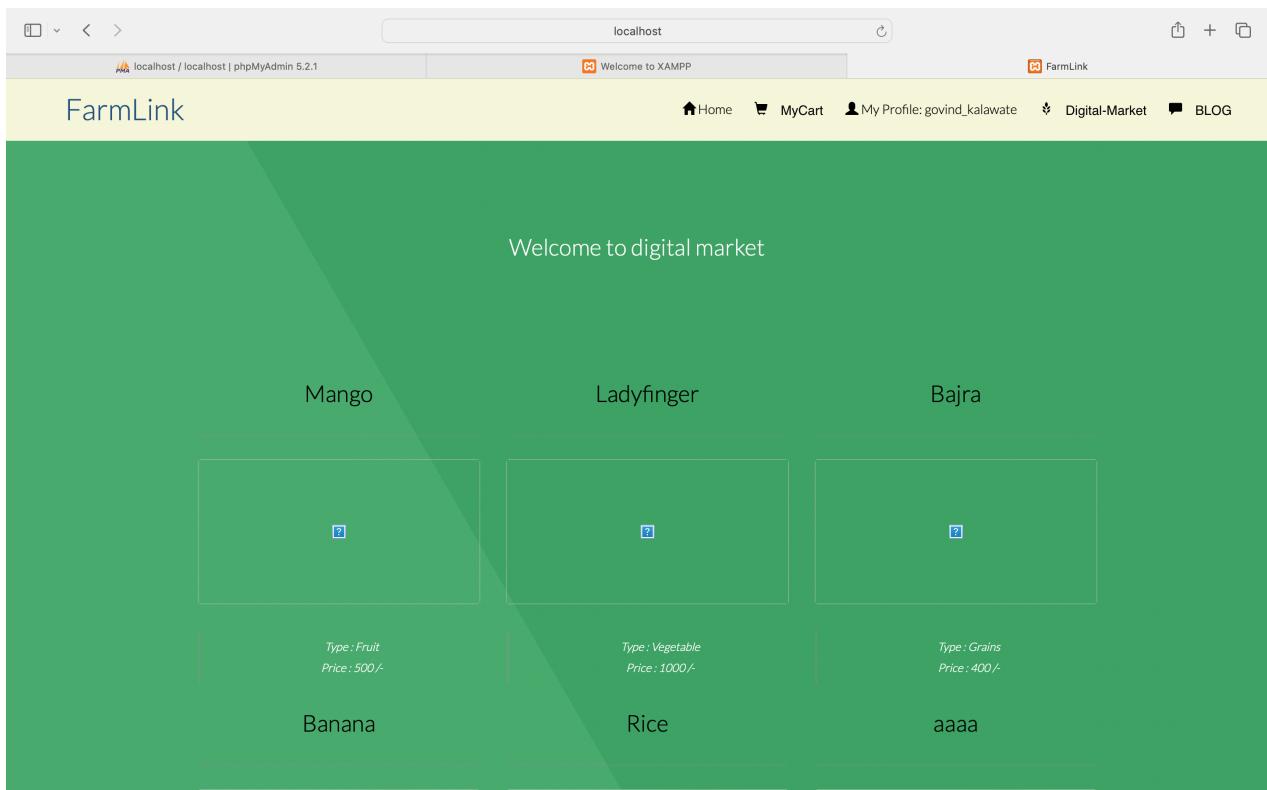
5. Product Upload

The screenshot shows the FarmLink Product Upload page. At the top, there is a navigation bar with links for Home, MyCart, My Profile (current user: govind_kalawate), Digital-Market, and BLOG. Below the navigation bar is a large green header area with a placeholder for product information. The text "Enter the Product Information here...!!" is centered in this area. Below this, there is a form with fields for "Choose File" (with the message "no file selected"), "Category" (a dropdown menu), "Product Name" (an input field), and a rich text editor toolbar. At the bottom of the green area, there is a "Price" input field and a yellow "Submit" button.

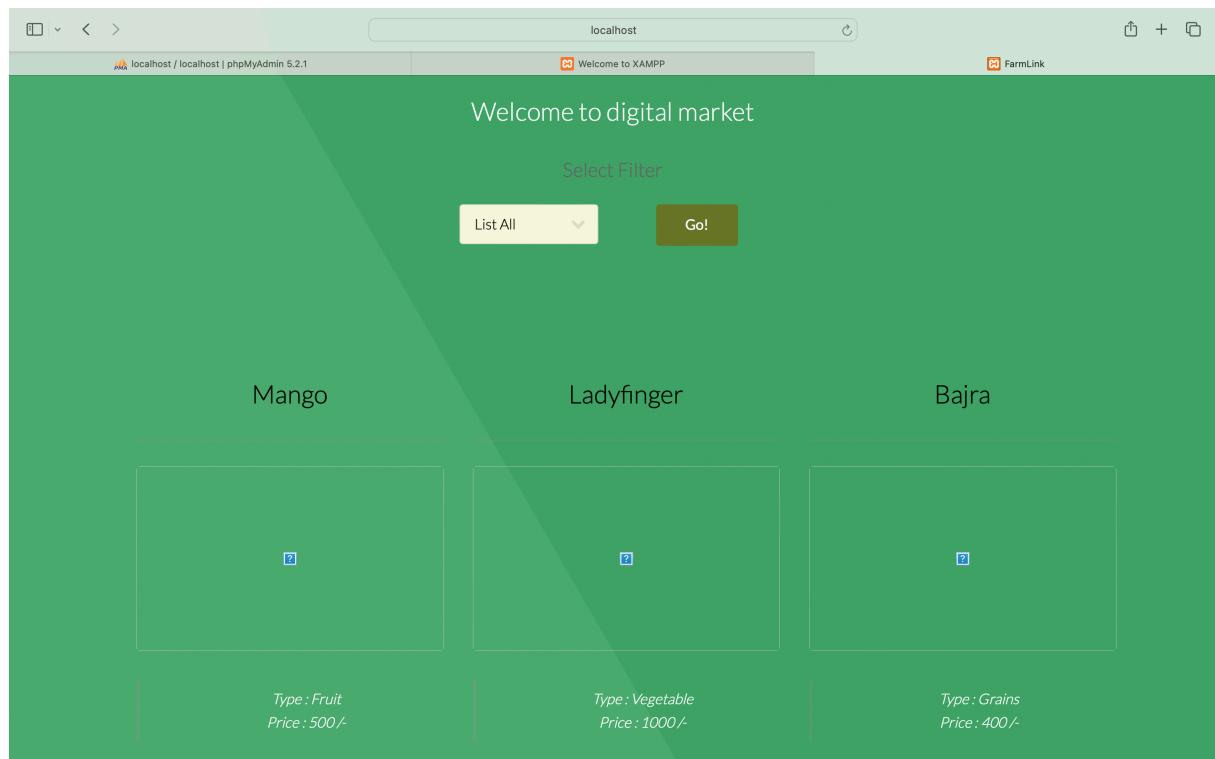
6. DigitalMarket Homepage



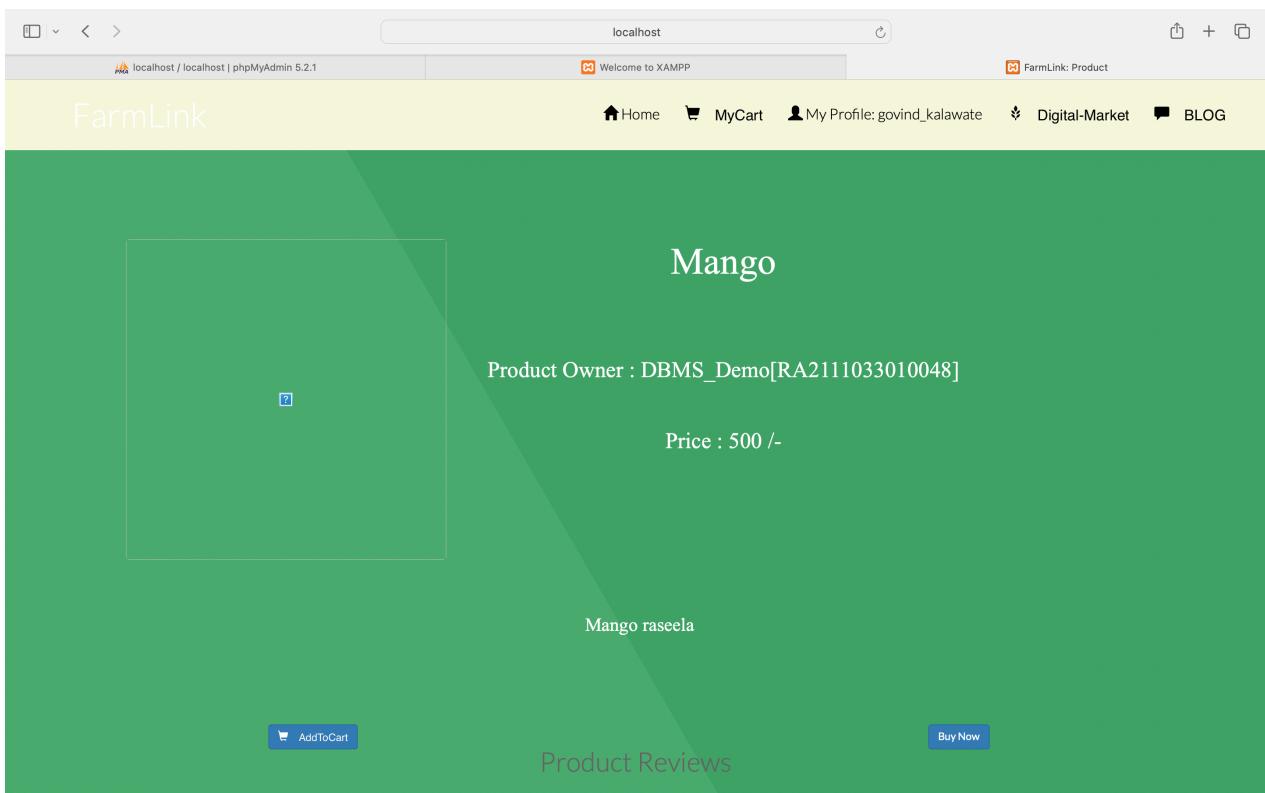
7. Our Products



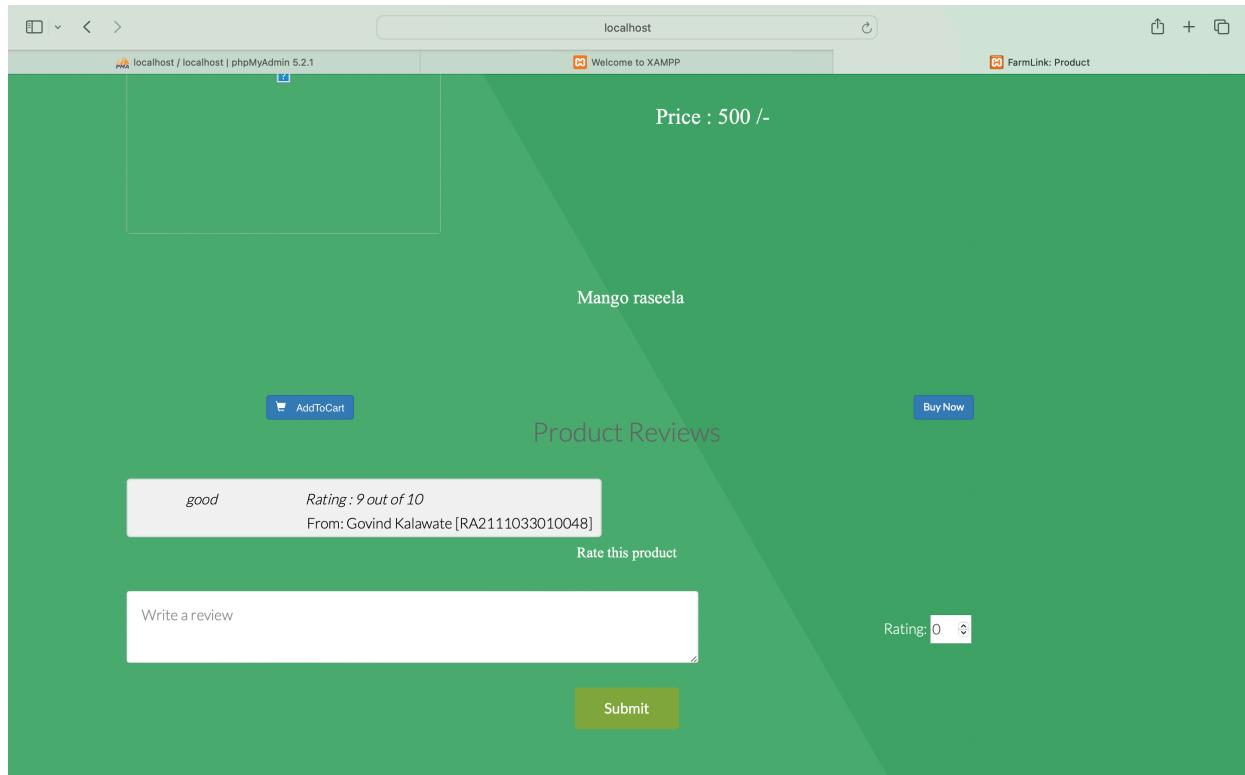
8. DigitalMarket - Search According To your Needs



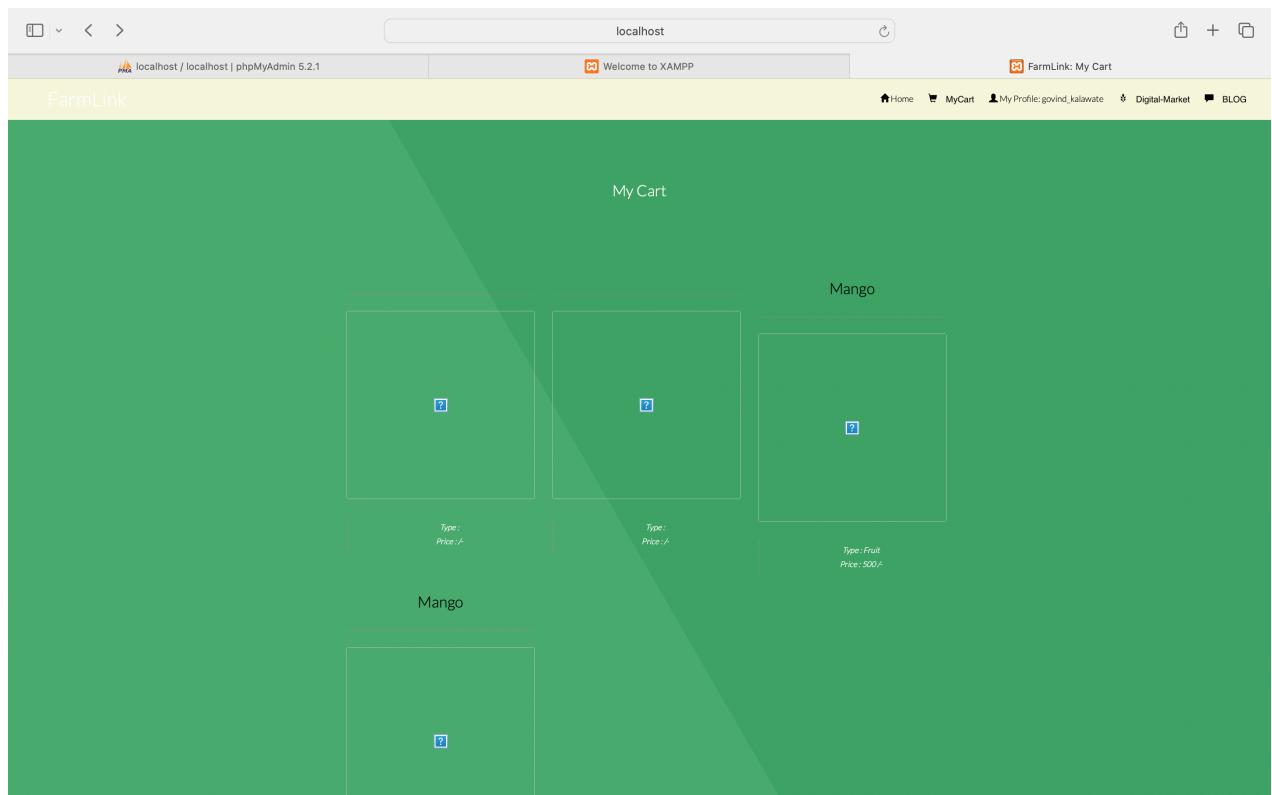
9. Product Details



10. Product Review



11. My Cart

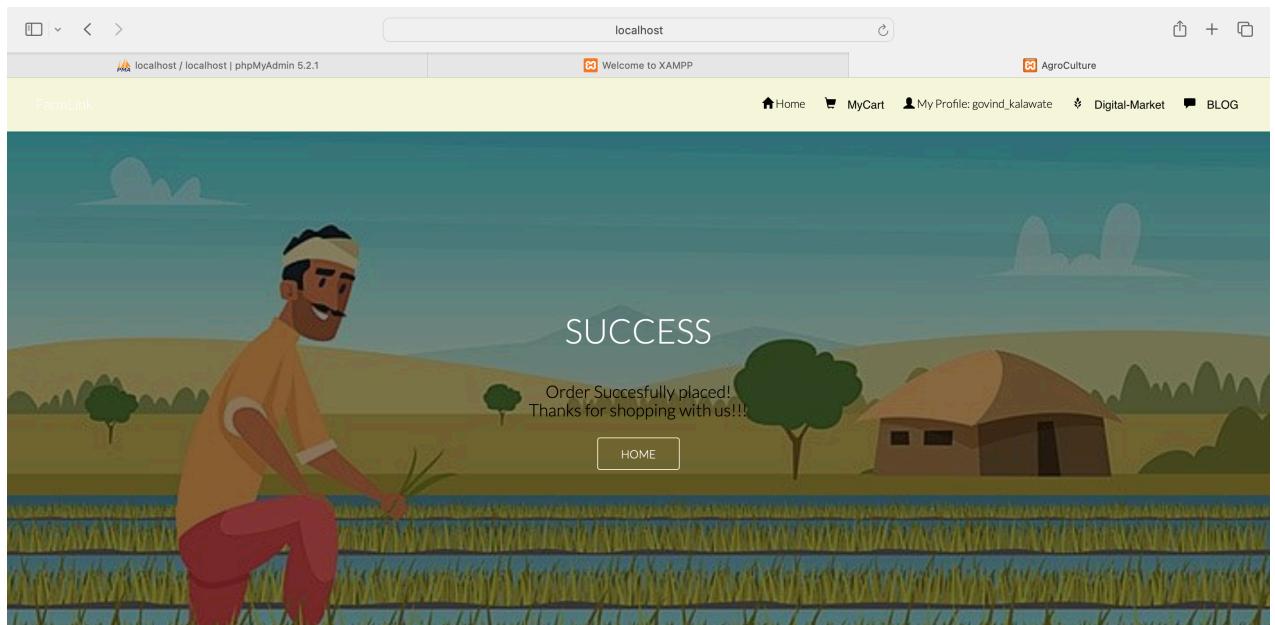


12. Buy Now

The screenshot shows a web browser window with the URL 'localhost'. The title bar says 'localhost'. The main content area is titled 'FarmLink: Transaction'. It contains several input fields: 'Govind Kalawate' and 'Chennai' (both in grey boxes); '7666486747' and 'ga3211@srmist.edu.in' (the email address is highlighted with a yellow background); '603203' and 'SRMIST' (both in grey boxes); and a green 'Confirm Order' button at the bottom.

Transaction Details

A form for confirming an order. It includes fields for Name ('Govind Kalawate'), Address ('Chennai'), Phone ('7666486747'), Email ('ga3211@srmist.edu.in'), Pincode ('603203'), and City ('SRMIST'). A green 'Confirm Order' button is at the bottom.

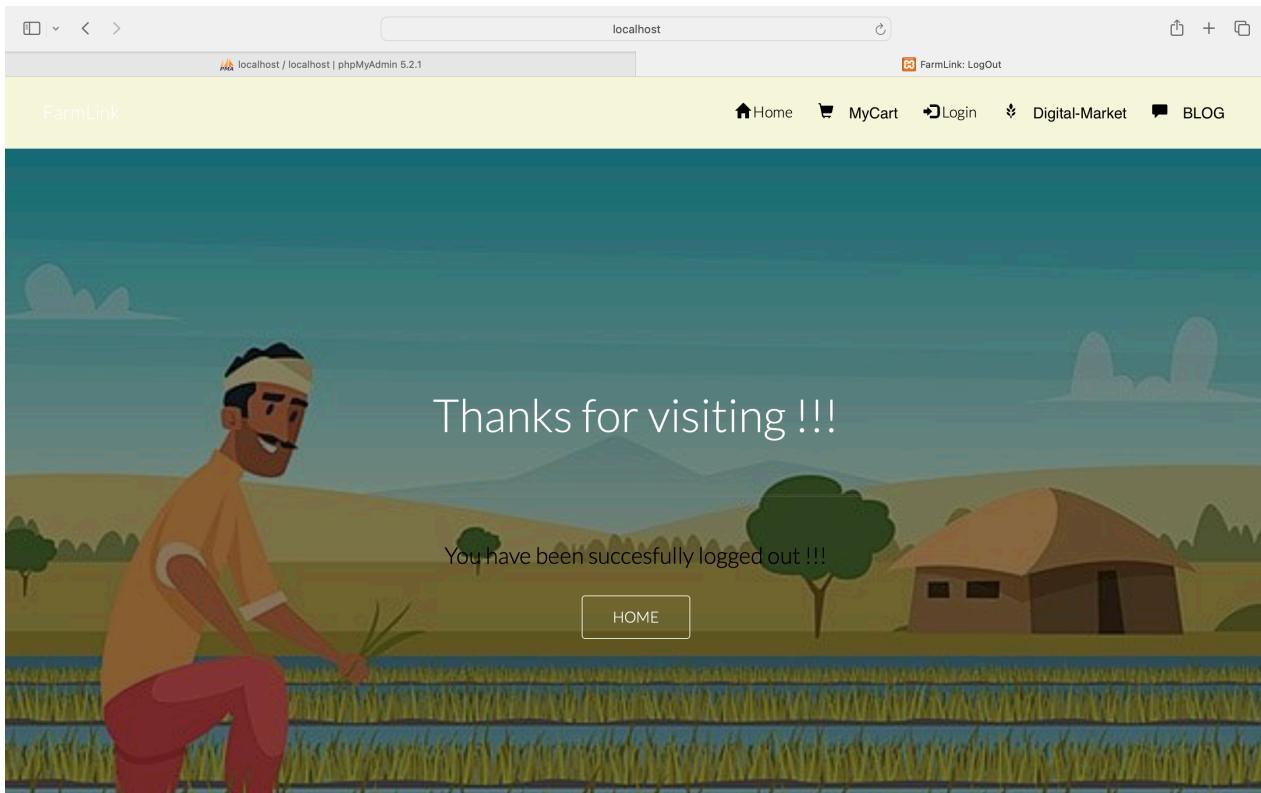


13. Blog

The screenshot shows a web-based blog writing interface. At the top, there are browser navigation buttons (back, forward, search) and tabs for "localhost / localhost | phpMyAdmin 5.2.1", "Welcome to XAMPP", and "AgroCulture : Write a Blog". Below the tabs, a header bar includes links for "Home", "MyCart", "My Profile: govind_kalawate", "Digital-Market", and "BLOG". A "FormLink" link is also present. On the right, there is a "View Blogs" button. The main content area contains a "Blog Title" input field, a rich text editor toolbar with various styling options like bold, italic, underline, and font size, and a large text input area. At the bottom right of this area is a "SUBMIT" button.

The screenshot shows a blog post detail page. At the top, there are browser navigation buttons, tabs for "localhost / localhost | phpMyAdmin 5.2.1", "Welcome to XAMPP", and "AgroCulture : Blogs", and a header bar with links for "Home", "MyCart", "My Profile: govind_kalawate", "Digital-Market", and "BLOG". A "FormLink" link is also present. On the right, there is a "Write a Blog" button. The main content area displays a blog post titled "First Blog". The post content includes the text "Its Awesome website 😊", the author "--- ThePhenom", and the timestamp "2018-02-25 18:39:41". Below the post, there is a "Like" button with a count of "1" and a "Comments" section with a count of "1". A "Submit" button is located at the bottom of the comments section. At the very bottom, a comment card shows a profile picture of "ThePhenom", the name "ThePhenom", the location "Mast yarr", and the time "6:39 pm".

14.LogOut



15.Backend- MyPHPAdmin

A screenshot of the phpMyAdmin interface for the AgroCulture database. The left sidebar shows various databases and tables. The main area displays the structure of the 'transaction' table, which has 9 rows and 10 columns. The columns are: Table, Action, Rows, Type, Collation, Size, and Overhead. The table structure is as follows:

Table	Action	Rows	Type	Collation	Size	Overhead
blogdata	Browse Structure Search Insert Empty Drop	1	InnoDB	latin1_swedish_ci	16.0 KiB	-
blogfeedback	Browse Structure Search Insert Empty Drop	1	InnoDB	latin1_swedish_ci	16.0 KiB	-
buyer	Browse Structure Search Insert Empty Drop	1	InnoDB	latin1_swedish_ci	32.0 KiB	-
farmer	Browse Structure Search Insert Empty Drop	2	InnoDB	latin1_swedish_ci	32.0 KiB	-
fproduct	Browse Structure Search Insert Empty Drop	8	InnoDB	latin1_swedish_ci	16.0 KiB	-
likedata	Browse Structure Search Insert Empty Drop	1	InnoDB	latin1_swedish_ci	48.0 KiB	-
mycart	Browse Structure Search Insert Empty Drop	6	InnoDB	latin1_swedish_ci	16.0 KiB	-
review	Browse Structure Search Insert Empty Drop	5	InnoDB	latin1_swedish_ci	16.0 KiB	-
transaction	Browse Structure Search Insert Empty Drop	3	InnoDB	latin1_swedish_ci	16.0 KiB	-
Sum		28	InnoDB	utf8mb4_general_ci	208.0 KiB	0 B

Below the table structure, there is a "Create new table" form with fields for Table name (empty) and Number of columns (set to 4). Other sections like SQL, Operations, Privileges, Routines, Events, Triggers, and Tracking are visible at the top and bottom of the interface.

CHAPTER-5

MODULES

1. User Management Module:

- Allows users (farmers, buyers) to register, login, and manage their accounts.
- Includes features for authentication, password management, and profile customization.

2. Product Management Module:

- Enables farmers to list their agricultural products for sale.
- Allows buyers to browse, search, and view product listings.
- Includes features for product categorization, pricing, and inventory management.

3. Order Management Module:

- Facilitates the buying and selling of agricultural products.
- Allows buyers to place orders, track order status, and manage their purchases.
- Provides farmers with tools to manage orders, process payments, and handle shipping.

4. Feedback and Review Module:

- Allows users to provide feedback and reviews on products and services.
- Helps improve product quality, customer satisfaction, and overall user experience.

CHAPTER-6

APPLICATIONS

1. Centralized Management Unit for Agricultural Supply Chains:

- The system can serve as a centralized platform for managing agricultural supply chains, including farmers, distributors, stores, and buyers.
- It facilitates communication, coordination, and collaboration among various stakeholders involved in the agricultural production and distribution process.

2. Distributor Panel:

- The Distributor Panel allows distributors to efficiently manage store orders and update order details such as invoices, shipments, and payments.
- Distributors can track orders, manage inventory, and coordinate deliveries to stores, ensuring timely and accurate fulfillment of orders.

3. Store Manager Panel:

- The Store Manager Panel provides store managers with tools to effectively manage their store stocks and maintain customer interactions.
- Store managers can monitor inventory levels, track sales, and engage with customers to address their needs and preferences.

4. Administrator Panel:

- The Administrator Panel empowers the management team of superstores to maintain oversight and control over all stores across a wide area through a central interface.
- Administrators can access comprehensive reports and analytics to assess store performance, identify areas for improvement, and make informed decisions to optimize operations.

CHAPTER-7

CONCLUSION

Throughout the development journey of this project, I've embarked on a significant learning experience, acquiring comprehensive knowledge and hands-on experience in HTML, CSS, JavaScript, PHP, and MySQL. Here are the key insights I've gained:

1. Technical Proficiency:

- I've delved deeply into the technical aspects of web development, mastering the foundational technologies necessary for creating dynamic and interactive applications.
- Working extensively with databases has enhanced my understanding of data management principles, enabling me to effectively organize and manipulate data within my applications.

2. User-Oriented Design:

- A user-centric approach has been central to my development process, driving me to prioritize intuitive design and seamless user experiences.
- By simplifying complex functionalities and designing clear and intuitive interfaces, I've ensured that my application is user-friendly and easy to navigate.

3. Insight into Market Needs:

- I've gained valuable insights into the demands of the market, identifying the features and functionalities that resonate most with users.

- This understanding has guided my development decisions, allowing me to align my project with the needs and expectations of my target audience.

4. Commitment to Quality:

- Quality assurance has been a top priority throughout the development lifecycle, with a focus on thorough testing and meticulous attention to detail.
- By maintaining a high standard of quality and minimizing errors, I've aimed to deliver a polished and reliable application.

5. Continuous Learning and Growth:

- My journey has been marked by a commitment to continuous learning and growth, embracing challenges as opportunities for personal and professional development.
- I've actively sought out new techniques and methodologies to enhance my skills and stay abreast of emerging trends in web development.

CHAPTER-8

Bibliography

Undertaking this project has been both a rewarding and challenging endeavor, and I am grateful for the opportunity to see it to fruition.

In the process of developing this project, I relied on a diverse range of resources to acquire knowledge and guidance. Apart from the ones mentioned previously, here are additional resources that have been instrumental:

1. www.w3schools.com
2. www.tutorialspoint.com
3. Google and YouTube Tutorials
4. MDN Web Docs (developer.mozilla.org)
5. Stack Overflow (stackoverflow.com)
6. Books and Online Courses
7. Official Documentation and Forums

