

# **DOCUMENTATION**

## **FARMCONNECT**

## Introduction

FarmConnect is a web platform built to bring farmers and consumers together, removing middlemen and creating a direct connection between them. This allows farmers to take charge of their product pricing, leading to better profits and more independence. One of the platform's standout features is the bargaining tool, which makes price negotiations open and fair for everyone involved. We also put a high priority on keeping user data secure, using Java for backend development and Firebase for real-time, secure data management.

## Software and Hardware Requirements

### Software:

- **JDK (Java Development Kit):** Powers the backend logic and ensures smooth database connectivity.
- **IDE (Integrated Development Environment):** We have used NetBeans for development.
- **HTML, CSS, JavaScript:** Used to design and style the frontend for an interactive, user-friendly experience.
- **MySQL:** A relational database for storing user data, transactions, and product information.
- **JSP (JavaServer Pages):** Dynamically generates web pages and handles user interactions.
- **Bootstrap:** A framework that helps create responsive, mobile-friendly web pages.
- **JSTL and EL:** These technologies simplify the management of dynamic content on JSP pages.
- **Apache Tomcat:** A web server to run and manage the website.

### Hardware:

- **Server:** Either cloud-based or on-premise, hosting the website and handling all traffic.
- **Development Machine:** Used for building and testing the website.
- **Database Server:** Hosts MySQL or another database to handle all user and transaction data.

## Implementation

1. **Project Setup:**  
The website is built using JDK and an IDE like IntelliJ IDEA or Eclipse. We focus on modularity to make the platform easy to expand and maintain.
2. **Database Design:**  
A clear and efficient MySQL schema stores user details, products, transactions, and price negotiation data. Tables are created to manage all this information seamlessly.
3. **Database Connectivity with JDBC:**  
JDBC connects the backend to the MySQL database, making sure that data like user information and transactions flow smoothly between the front end and backend.

4. **DAO Classes:**

These classes are responsible for all interactions with the database, ensuring smooth operations like creating, reading, updating, and deleting user and product data.

5. **Frontend Development:**

HTML templates are used to build the structure of the website, while CSS and Bootstrap style the pages. JavaScript brings it all together, providing interactive features and form validation.

6. **Form Validation with JavaScript:**

JavaScript helps ensure that users enter the correct data into forms, minimizing errors before submitting information.

7. **Servlet Configuration:**

Servlets handle user requests and responses, processing tasks like registration, login, and transactions, while passing data between the frontend and backend.

8. **doGet and doPost Methods:**

These methods manage the retrieval and submission of data on the website. For instance, the doGet method retrieves data, and the doPost method handles updates or new submissions like user registration or price negotiations.

9. **User Registration and Profile Management:**

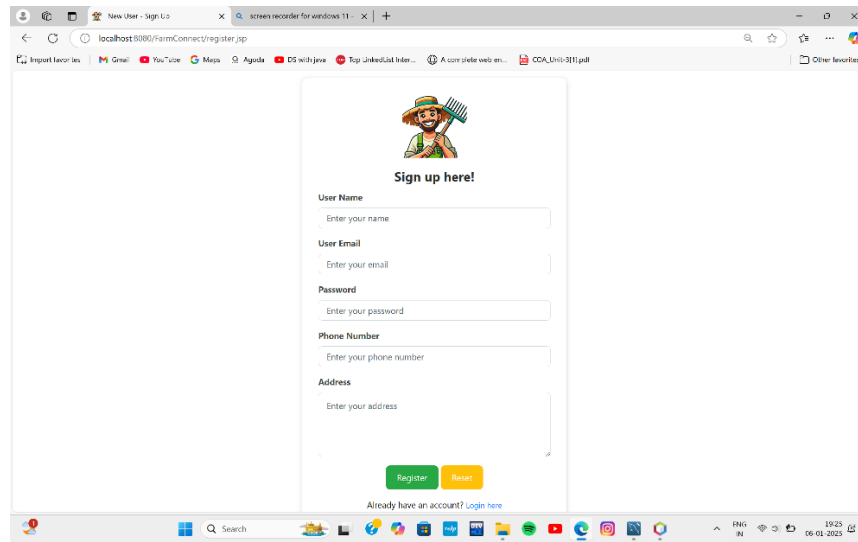
The platform allows users to sign up, manage their profiles, and control their products and pricing directly.

10. **JSP Integration:**

JSP is used to dynamically show user data like product listings, profiles, and transaction history. JSTL and EL help manage the content easily, making sure it displays in an organized way.

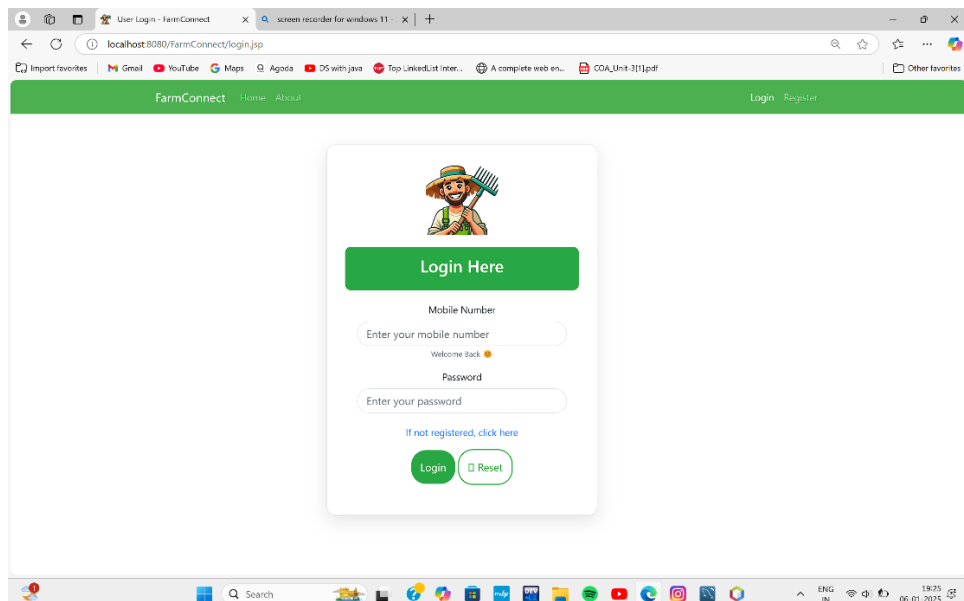
# Project Prototype

## Registration Page



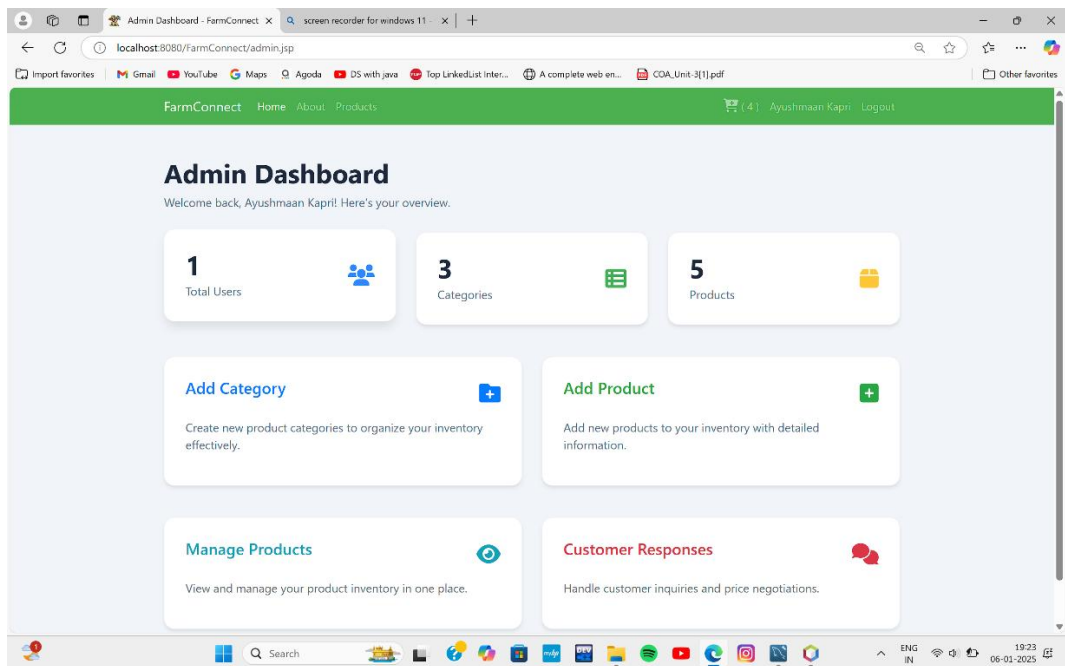
A screenshot of a web browser displaying the registration page of a website. The browser's address bar shows the URL `localhost:8080/FarmConnect/register.jsp`. The page features a central white card with a green border. At the top of the card is a cartoon illustration of a farmer wearing a straw hat and holding a pitchfork. Below the illustration, the text "Sign up here!" is displayed. The registration form includes the following fields: "User Name" (with a placeholder "Enter your name"), "User Email" (with a placeholder "Enter your email"), "Password" (with a placeholder "Enter your password"), "Phone Number" (with a placeholder "Enter your phone number"), and "Address" (with a placeholder "Enter your address"). At the bottom of the card, there are two buttons: a green "Register" button and a yellow "Reset" button. Below these buttons, a link "Already have an account? Login here" is visible. The browser's taskbar at the bottom shows various application icons and the system clock indicating 19:25 on 06-01-2025.

## Login Page

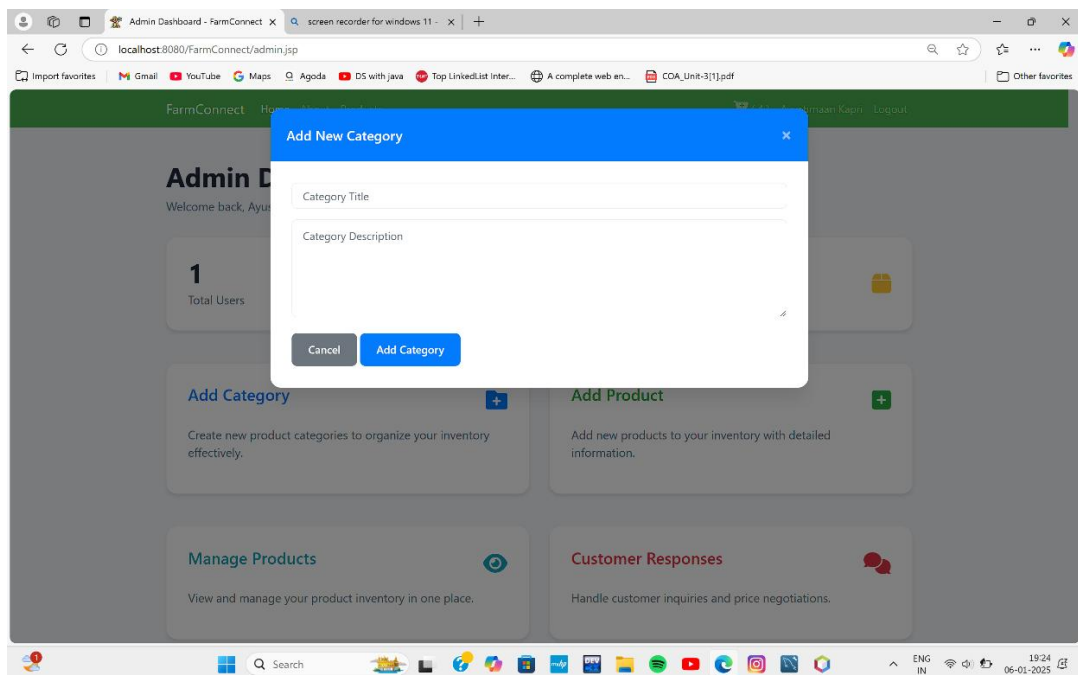


A screenshot of a web browser displaying the login page of a website. The browser's address bar shows the URL `localhost:8080/FarmConnect/login.jsp`. The page features a green header bar with the text "FarmConnect" and navigation links "Home" and "About". On the right side of the header, there are links "Login" and "Register". The main content area contains a central white card with a green border. At the top of the card is a cartoon illustration of a farmer wearing a straw hat and holding a pitchfork. Below the illustration, the text "Login Here" is displayed. The login form includes the following fields: "Mobile Number" (with a placeholder "Enter your mobile number"), "Password" (with a placeholder "Enter your password"), and a "Welcome Back" message with a small orange heart icon. Below the password field, there is a link "If not registered, click here". At the bottom of the card, there are two buttons: a green "Login" button and a yellow "Reset" button. The browser's taskbar at the bottom shows various application icons and the system clock indicating 19:25 on 06-01-2025.

## Admin Page



## Add Category Page



## Add Product

The screenshot shows the 'Add New Product' modal form in the FarmConnect Admin Dashboard. The form is a white box with a green header and a green 'Add Product' button. It contains the following fields:

- Product Title (text input)
- Product Description (text area)
- Price (text input)
- Discount % (text input)
- Quantity (text input)
- Vendor (dropdown menu)
- Product Image (file upload button: 'Choose File' / 'No file chosen')

At the bottom of the modal are 'Cancel' and 'Add Product' buttons. The background shows the admin dashboard with a sidebar and a main content area.

## Manage Products

The screenshot shows the 'Manage Your Products' page in the FarmConnect Admin Dashboard. The page has a green header with the FarmConnect logo and navigation links. The main content area is titled 'Your Products' and contains a table with the following data:

ID	Name	Description	Price	Action
1	Tomaotes	Fresh red tomatoes	₹ 54	<button>Edit</button> <button>Delete</button>
2	Apples	Red Apples	₹ 72	<button>Edit</button> <button>Delete</button>
3	Basmati Rice	Best Quality Basmati Rice	₹ 100	<button>Edit</button> <button>Delete</button>
4	Red Capsicum	Fresh Red Capsicum	₹ 45	<button>Edit</button> <button>Delete</button>
5	Banana	Fresh Bananas	₹ 54	<button>Edit</button> <button>Delete</button>

The table is located in the center of the page, below the 'Your Products' heading. The background shows the admin dashboard with a sidebar and a main content area.

## Edit Products

FarmConnect

HomeAboutProducts

(4) Ayushmaan KapriLogout

Edit Product

Product Name:

Tomaotes

Description:

Fresh red tomatoes

Price:

60


Discount (%):

10

Quantity:

50

Current Image:



Update Image (optional):

Choose FileNo file chosen

Cancel

Update Product

## Customer Responses

Price Requests Data

screen recorder for windows 11

localhost:8080/FarmConnect/FarmerRequest.jsp

Import favoritesGmailYouTubeMapsAgodaDS with javaTop LinkedList Inter...A complete web en...COA\_Unit-3[1].pdfOther favorites

FarmConnect

HomeAboutProducts

(4) Ayushmaan KapriLogout

Price Request Details

ID	Product Name	Original Price	Requested Price	Request Date	Message
4	Red Capsicum	\$50	\$40.0	06-01-2025 19:15	
3	Apples	\$80	\$60.0	06-01-2025 19:14	
2	Banana	\$60	\$40.0	06-01-2025 19:14	
1	Basmati Rice	\$100	\$80.0	06-01-2025 19:14	Lets make a deal at 80

1

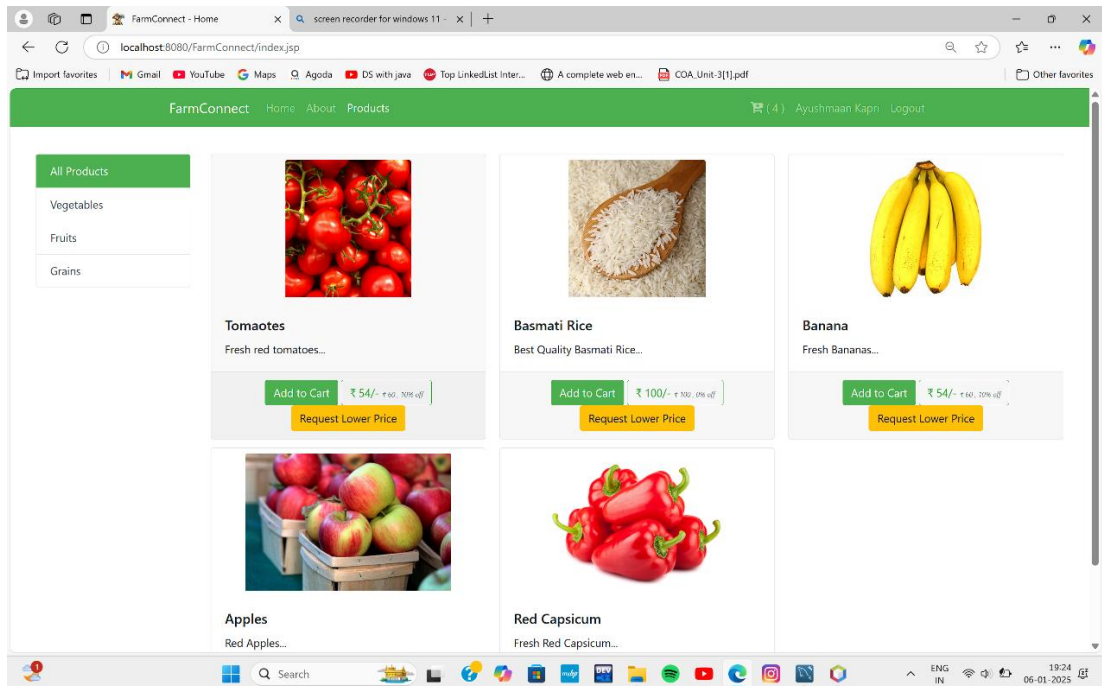
Search

Search

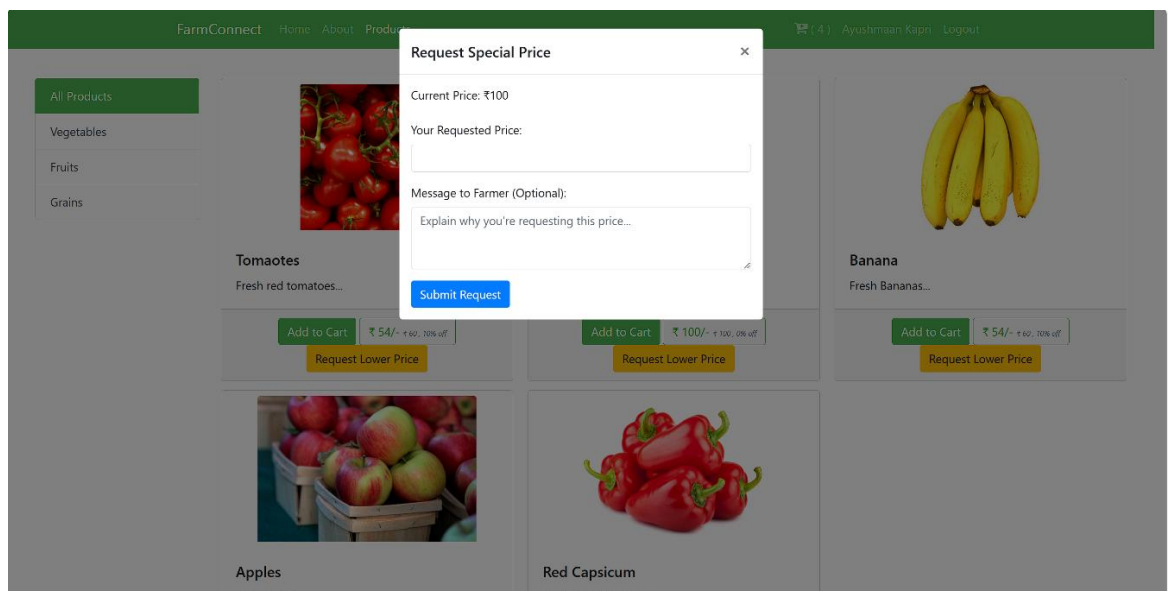
ENG IN

19:23 06-01-2025

## Products (Customer View)

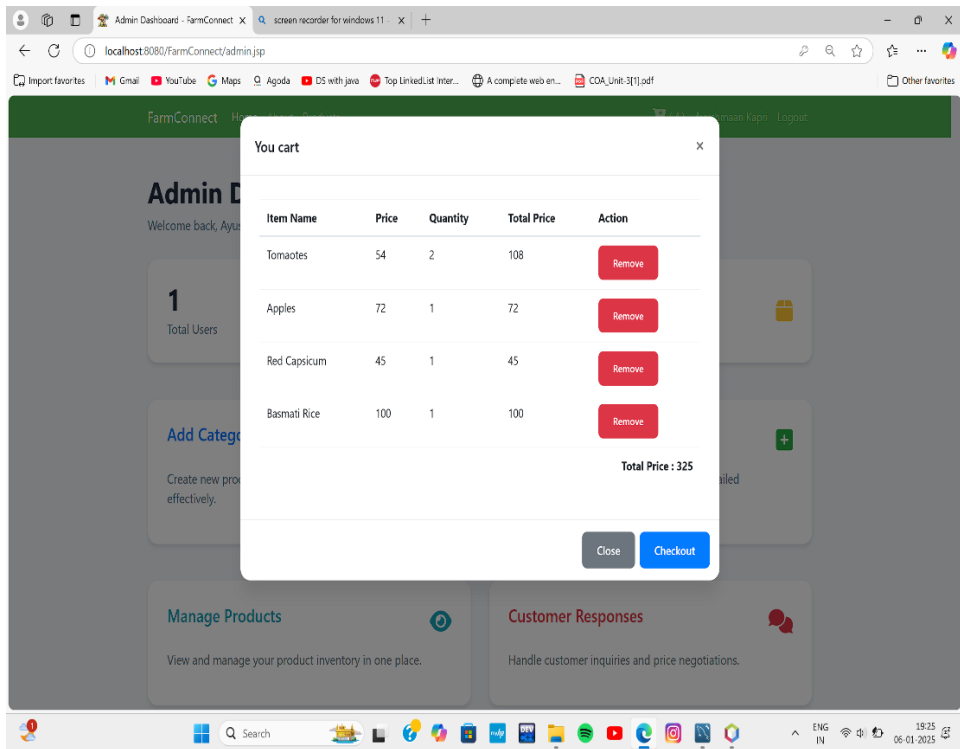


## Request Special Price

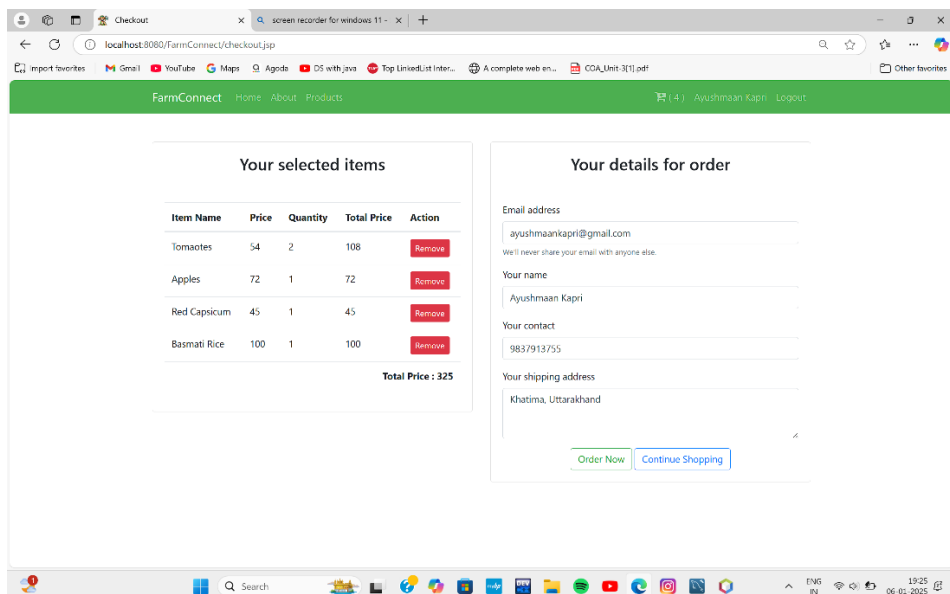




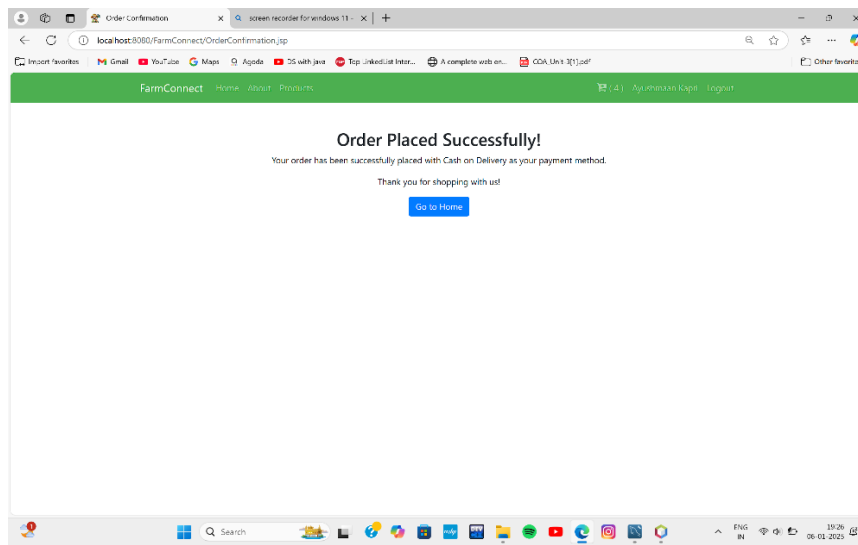
## Cart



## Checkout Page

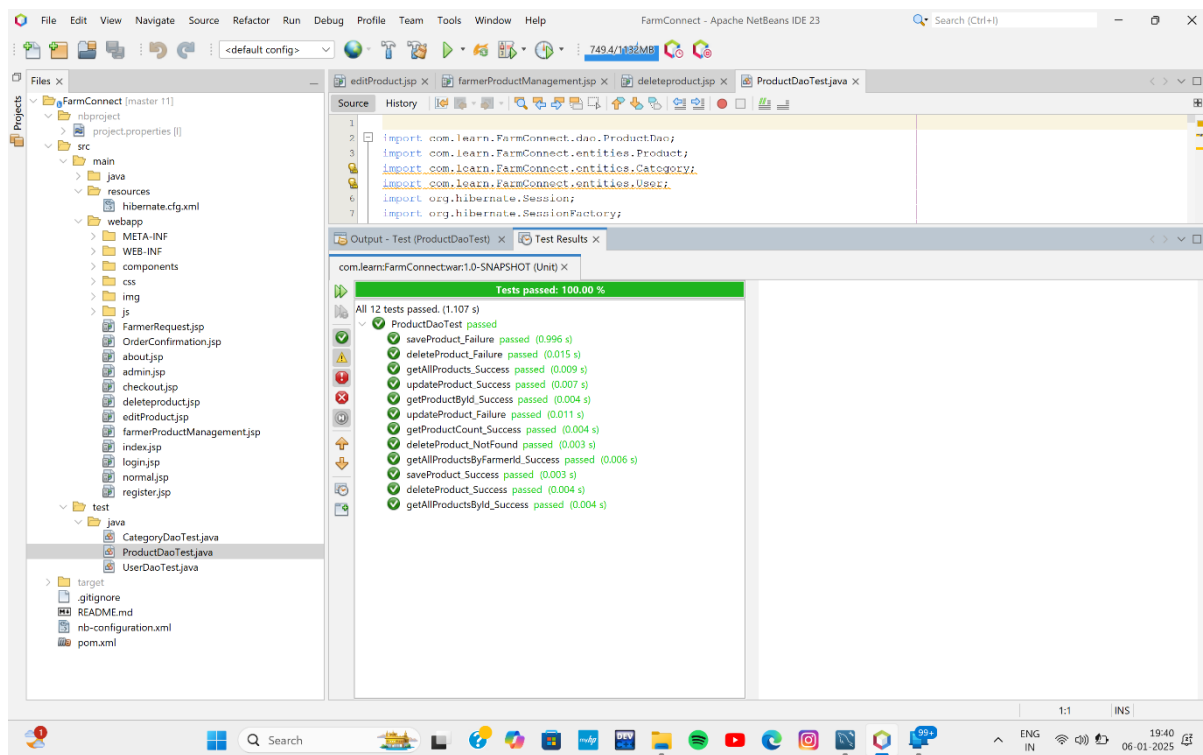


## Order Confirmation

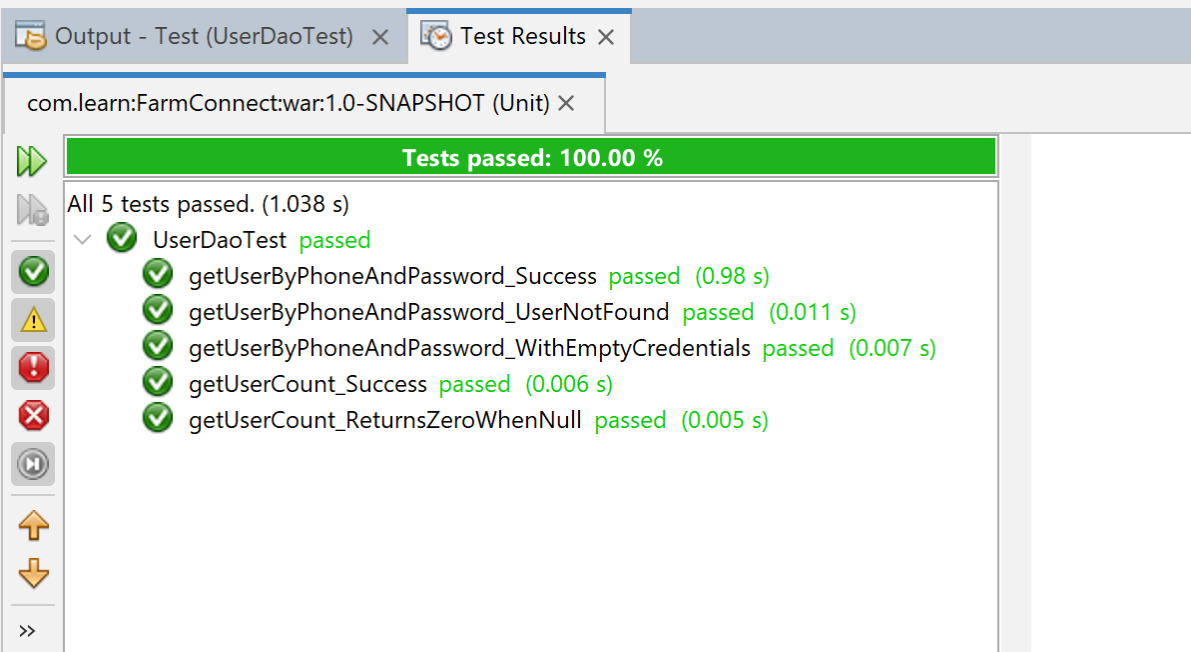


## Test Pages

### Product Dao Test



## User Dao Test

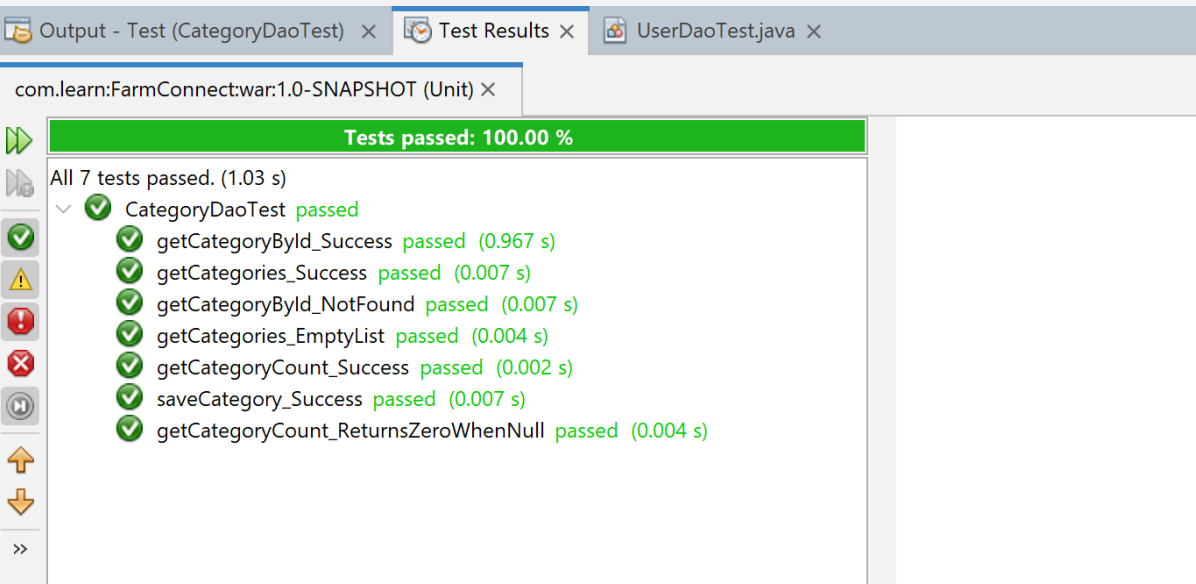


The screenshot shows the 'Test Results' window in IntelliJ IDEA. The top bar indicates the test is for 'com.learn:FarmConnect:war:1.0-SNAPSHOT (Unit)'. A green progress bar at the top of the results pane shows 'Tests passed: 100.00 %'. Below this, a summary line states 'All 5 tests passed. (1.038 s)'. The test suite 'UserDaoTest' is expanded, showing five individual tests, all of which passed:

- ✓ UserDaoTest passed
- ✓ getUserByPhoneAndPassword\_Success passed (0.98 s)
- ✓ getUserByPhoneAndPassword\_UserNotFound passed (0.011 s)
- ✓ getUserByPhoneAndPassword\_WithEmptyCredentials passed (0.007 s)
- ✓ getUserCount\_Success passed (0.006 s)
- ✓ getUserCount\_ReturnsZeroWhenNull passed (0.005 s)

The left sidebar contains standard IDE icons for running tests, including a green checkmark, a yellow warning triangle, a red exclamation mark, a red 'X', a play button, and up/down arrows.

## Category Dao Test



The screenshot shows the 'Test Results' window in IntelliJ IDEA. The top bar indicates the test is for 'com.learn:FarmConnect:war:1.0-SNAPSHOT (Unit)'. A green progress bar at the top of the results pane shows 'Tests passed: 100.00 %'. Below this, a summary line states 'All 7 tests passed. (1.03 s)'. The test suite 'CategoryDaoTest' is expanded, showing seven individual tests, all of which passed:

- ✓ CategoryDaoTest passed
- ✓ getCategoryById\_Success passed (0.967 s)
- ✓ getCategories\_Success passed (0.007 s)
- ✓ getCategoryById\_NotFound passed (0.007 s)
- ✓ getCategories\_EmptyList passed (0.004 s)
- ✓ getCategoryCount\_Success passed (0.002 s)
- ✓ saveCategory\_Success passed (0.007 s)
- ✓ getCategoryCount\_ReturnsZeroWhenNull passed (0.004 s)

The left sidebar contains standard IDE icons for running tests, including a green checkmark, a yellow warning triangle, a red exclamation mark, a red 'X', a play button, and up/down arrows.

## Results

- **Empowered Farmers:**  
By removing middlemen, farmers now have full control over the prices of their products, leading to increased profits.
- **Transparent and Fair Pricing:**  
The bargaining feature gives both farmers and consumers the opportunity to negotiate prices fairly, ensuring everyone is satisfied.
- **Efficient Data Handling:**  
Firebase ensures that data is securely stored and updated in real-time, while JDBC helps facilitate smooth communication between the website and database.
- **User-Friendly Interface:**  
Built with HTML, CSS, JavaScript, and Bootstrap, the platform is designed to work seamlessly on any device, providing a great experience for every user.
- **Secure Transactions:**  
Transactions are encrypted and secure, ensuring that all user data, especially payment details, are protected.

## Conclusion

FarmConnect is more than just a website; it's a solution to farmers' challenges in reaching consumers and getting fair product prices. By cutting out the middlemen, the platform empowers farmers to control their pricing and connect directly with consumers. With a focus on security, responsiveness, and simplicity, FarmConnect is setting the stage for a more sustainable and fair agricultural marketplace. Using technologies like Firebase, JDBC, JSP, and Bootstrap, we've built a platform that's secure, scalable, and ready to meet the needs of both farmers and consumers in a digital world.