

Online Marketplace for Local Artisans

Project Report



Sri Lanka Institute of Information Technology IT2080 Information
Technology Project

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Weragala R.T.L- IT21820946

Navodya M.M.C-IT2188202

K.D. Dilini-IT21826740

Gunawardana S.N.A -IT21300332

Vithanage H.P-IT21823220

Amarasinghe V.D-IT21813702



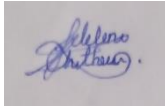


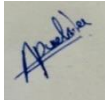
A.S.G Punchihewa-IT2181486

October 2022

Appendix 2 – Declaration**Declaration**

This project report is our original work, and the content is not plagiarized from any other resource. References for all the content taken from external resources are correctly cited. To the best of our knowledge, this report does not contain any material published or written by third parties, except as acknowledged in the text.

Authors

Authors SID	Author name	Signature
IT21820946	Weragala R.T.L	
IT2188202	Navodya M.M.C	
IT21826740	K.D.Dilini	
IT21300332	Gunawardana S.N.A	
IT21823220	Vithanage H.P	
IT21813702	Amarasinghe V.D	
IT2181486	A.S.G Punchihewa	

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Abstract

The goal of the "Online Marketplace for Local Artisans" project is to transform the way regional artists and craftsmen market, manage, and sell their creations. It is a full-featured e-commerce platform. Artists found it difficult to reach a larger audience before this system was developed, relying instead on conventional marketing and constrained sales methods. Our platform makes it possible for artists to effectively display and market their handcrafted goods, such as original artwork, handicrafts, and other unique artisanal products.

Numerous features are included in this system, such as inventory keeping, customer involvement, order administration, payment processing, and product listings. It provides a user interface that is both aesthetically pleasing and simple to use, guaranteeing a smooth experience for both clients and craftsmen. In a user-friendly environment, users can quickly search for and find handcrafted products, conduct secure purchases, and leave feedback. Numerous features are included in this system, such as inventory keeping, customer involvement, order administration, payment processing, and product listings. It provides a user interface that is both aesthetically pleasing and simple to use, guaranteeing a smooth experience for both clients and craftsmen. In a user-friendly environment, users can quickly search for and find handcrafted products, conduct secure purchases, and leave feedback.

The MERN (MongoDB, Express.js, React, Node.js) stack is used in the development of the platform's frontend and backend, which incorporates cutting-edge technologies to guarantee scalability, security, and dependability. The platform performs better when MERN stack technologies are used, freeing up craftsmen to concentrate on their craft while effectively maintaining their online presence.

In addition to giving craftsmen a platform to display their skills, the "Online Marketplace for Local Artisans" spreads awareness of their original works of art among a larger audience. Through our platform, artists may grow their selling's and reach a wider audience, gaining significant clients in the process. We've put the platform through a rigorous testing process to make sure it works and is user-friendly, giving artisans a strong platform to succeed in the online market. This creative system serves as a shining example for the sustainability and promotion of regional craft abilities and goods.

Acknowledgement

We would like to extend our sincere gratitude to all those who have played an instrumental role in making the successful completion of this project possible. We are especially appreciative of our dedicated instructor, Mr. Thusitha, who provided us with valuable guidance, unwavering support, and a wealth of knowledge throughout this project's journey.

We are deeply thankful to our Lecturer-in-Charge, Ms., for her invaluable feedback, expert advice, and her wholehearted dedication in steering the team toward the realization of our project's goals. Her contributions have been pivotal in shaping our project.

A special note of appreciation goes to our fellow teammates, whose unwavering commitment and collaborative efforts were vital in assembling and finalizing the project. Without the collective synergy of the team, the successful completion of this project would have been an insurmountable challenge.

Table of Contents

1	Introduction.....	1-1
1.1	Background.....	1-1
1.2	Problem and Motivation.....	1-1
1.3	Literature review.....	1-2
1.4	Aims.....	1-3
1.5	Objectives.....	1-4
1.6	Solution Overview.....	1-5
1.7	Methodology.....	1-6
1.8	A clickable link to the Git repo.....	1-7
2	Requirements.....	2-8
2.1	Requirement Engineering Methods.....	2-8
2.2	Requirements and Analysis.....	2-8
3	Design and Development.....	3-11
3.1	Use Case Diagrams [3].....	3-11
3.2	Activity Diagrams [3].....	3-17
3.3	ER Diagram.....	3-23
3.4	Development Tools and Technologies.....	3-24
4	Testing.....	4-25
4.1	Test cases.....	4-25
5	Evaluation and Conclusion.....	5-32
5.1	Evaluation [8].....	5-32
5.1.1	User Experience.....	5-33
5.1.2	Performance.....	5-33
5.1.3	Security.....	5-33
5.1.4	Seller and Product Quality.....	5-33
5.1.5	Marketing and Promotion.....	5-33
5.2	Conclusion.....	5-33
5.2.1	Achievement of Objectives.....	5-33
5.2.2	Achievement of Aim.....	5-34
6	Appendix A.....	I
7	Appendix B.....	IV
7.1	IT21820946-Weeragala R.T.L.....	IV
7.2	IT21813702- Amarasinghe V.D.....	V

7.3	IT21826740-K.D.Dilini.....	VII
7.4	IT21821486-A.S.G. Punchihewa.....	XI
7.5	IT21818202-Navodya M.M.C.....	XII
7.6	IT21823220- Vithanage H.P	XIII
8	References	XIV

List of figures

Figure 1.1.....	1-5
Figure 3.1 Use case diagram for Artisan onboarding and product selling.	3-11
Figure 3.2 Use case diagram for Packaging and Labeling.....	3-12
Figure 3.3 Use case diagram for Inventory management.	3-13
Figure 3.4 User case for Financial & Payment Management	3-14
Figure 3.5 Use case diagram for customer management.	3-15
Figure 3.6 Use case diagram for Supplier management	3-16
Figure 3.7 Activity diagram for Artisan onboarding	3-17
Figure 3.8 Activity diagram for packaging and labeling	3-18
Figure 3.9 Activity diagram for Customer management.....	3-19
Figure 3.10 Activity diagram for Finance Management	3-20
Figure 3.11 Activity diagram for Warehouse management	3-21
Figure 3.12 Activity diagram for customer and order management.....	3-22
Figure 3.13 ER diagram.....	3-23
Figure 7.7.1 Login UI.....	IV
Figure 7.2 Home	IV
Figure 7.3 Search UI	IV
Figure 7.4 Show listings UI	IV
Figure 7.5 Add product UI	IV
Figure 7.6 View product details UI	IV
Figure 7.7 Add/Edit product validation.	V
Figure 7.8 New/Edit Product UI.....	V
Figure 7.9 Inventory log data	V
Figure 7.10 Reorder form validations.....	VI
Figure 7.11 Dashboard and Reorder UI.....	VI
Figure 7.12 Shipping Log Entry Validations	VI
Figure 7.13 Shipping Log Data and UI	VI
Figure 7.14 Product detail UI.....	XII
Figure 7.15 Show message “Item is already added to your cart”	XII
Figure 7.16 Search.....	XII
Figure 7.17 Cart UI.....	XII
Figure 7.18.....	XIII

Figure 7.19.....	XIII
Figure 7.20.....	XIII
Figure 7.21.....	XIII

List of tables

Table 4.1	4-26
Table 4.2	4-28
Table 4.3	4-29
Table 4.4	4-32
Table 6.1 Individual works	III

1 Introduction

1.1 Background

Our main clients are artisans, but we also focus on suppliers and the public as well. Our website provides a platform for artisans to market their products and services, while also letting them purchase their required raw materials from suppliers. Our main focused clientele would be local artisans who hand make their creations and do not have an established customer base. They are inclined to use our website due to the functionality and reach it offers in terms of product promotion and market reach, in addition to the connection with suppliers.

1.2 Problem and Motivation

a) **“Connecting with customers is proving to be difficult after Covid. Our existing customer base has withdrawn and made things difficult for us.”**

- One of our artisans.

After Covid-19 and the economic crisis of our country, the situation became dire for artisans who relied on selling their artworks and crafts to earn their livelihood. Listed below are some of the main challenges faced by the artisans,

- Loss of customers.
- Inaccessibility to the required raw materials.
- Lack of marketing methods for their products.

Since some handicrafts or artifacts, they sell are usable for an extended period, artisans require a long reach and exposure to new customers frequently. Also, due to the financial crisis in the country, they need to be able to contact suitable raw material suppliers who can provide them at an affordable price. Currently, the artisans are relying on word of mouth and displaying their products at their store location to get sales. Through just these methods, they are not capable of marketing their product range or even the uniqueness of it. It also consumes a lot of time and effort to spread their products while not getting the required return for it, proving it to be unsustainable in the long run. [1]

“After Covid, we lost a lot of our buyers. We need a platform that can showcase our products and attract customers from a wide region for us.”

- One of our suppliers.

Not just artisans but suppliers of raw materials and equipment for handicrafts and similar industries lost a lot of their customers as well. Listed below are some of the main problems faced by the suppliers,

- Loss of customers.
- Loss of market reach.
- Difficulty in assessing the marketing situation.

These artisans require committed artisans who require a steady supply of raw materials and equipment, while also being able to properly identify their business market environment. They need a space to be able to connect with the local artisans and identify their needs and see how their competitors are proceeding as well to correctly price and market their products. Currently, the suppliers are relying on previous connections, posters, and word of mouth to market and sell their

product. These methods are proving to be unsustainable and ineffective in the long run as it consumes a lot of effort, money, and time to reach just a few artisans.

b) “It would be great if we had an easy way to increase our market reach and showcase all of our products at once.”

- Our artisans and suppliers

Both artisans and suppliers face a common challenge when it comes to reaching each other, due to distance, financial constraints, and various other physical factors. By turning to an online platform, they can find the solutions to almost all their obstacles. In today’s world of rapid digitalization, local artisans and suppliers will be able to fulfil all their needs without expending an unnecessary quantity of effort, time, or money. Using an official website, they are easily able to increase their customer base exponentially. They can easily showcase all their products or services with all the additional related information such the price, delivery conditions, handling, or manufacturing details. They will also be able to see the products and prices of their competitors, increasing their awareness about the current business situation. This method helps save effort, time and money for both artisans and suppliers. For artisans, they will be able to display their best products. They are easily able to showcase all the products and services that they offer to a large audience in an instant. They will also be able to draw inspiration and improve their skills or services by observing their fellow peers. They would gain the ability to search through many suppliers to find someone who fits all the requirements in terms of affordability and usage. It would be quite easy to create a customer base for them. For suppliers, they will be able to reach a much larger customer base in terms of raw materials and geography. By displaying their product and service quality, they will be able to secure some loyal customers. They will also be able to see the approaches taken by their competitors to gain a clearer understanding of the current market situation and the needs of the artisans.

1.3 Literature review

1. E-commerce and Artisanal Crafts:

The e-commerce landscape has witnessed a significant shift in recent years, with a growing emphasis on supporting local artisans and their crafts. Literature reflects the increasing interest in creating online marketplaces that connect artisans directly with customers, offering a platform for artisans to showcase and sell their unique, handmade products.

2. Challenges Faced by Local Artisans:

Research highlights the challenges faced by local artisans, including limited access to markets, competition from mass-produced items, and difficulties in reaching a broader customer base. Online marketplaces designed to address these challenges provide a channel for artisans to gain exposure and recognition.

3. Importance of Local Artisan Marketplaces:

Literature underscores the importance of online marketplaces for local artisans in preserving traditional craftsmanship and cultural heritage. These platforms enable artisans to maintain their livelihoods while reaching a global audience interested in authentic, handmade products.

4. User Interface and User Experience:

Studies stress the significance of user-friendly interfaces in online artisan marketplaces. An intuitive and visually appealing design enhances the user experience, making it easier for both artisans to list their products and customers to explore and make purchases.

5. Supporting Artisan Communities:

The literature discusses the social and economic impact of online artisan marketplaces on local communities. These platforms empower artisans by providing them with a sustainable source of income and fostering a sense of community.

6. Inventory Management and Product Listings:

Effective product management and inventory tracking are crucial aspects of online artisan marketplaces. Literature highlights how modern technology, including database management systems, assists artisans in managing their product listings efficiently.

7. Payment Processing and Transaction Security:

Secure payment processing and data security are essential for building trust among both artisans and customers. The literature discusses the importance of integrating reliable payment gateways and encryption to protect sensitive information.

1.4 Aims

- **Empowering True Artistry:** Celebrate and support genuine artists who create real masterpieces amidst automation.
- **Simplifying Artisan's Journey:** Offering a simple interface and hassle-free services, it aims to free artisans from the burdens of supplier search and logistical challenges, allowing them to focus on their artistic vision and craft.
- **Promoting Local Artisanal Products:** Promote and elevate the visibility of local artisanal products in the market through this system. It strives to showcase the authenticity and cultural richness of these creations.

1.5 Objectives

- **Efficient Supplier Sourcing:** Curating a network of reputable suppliers that offer high quality materials and resources, ensuring that local artisans have easy access to the best resources.
- **User-Friendly Interface:** The interface should be intuitive, allowing artisans to manage their inventory, update product listings, and interact with customers seamlessly.
- **Convenient Delivery Solutions:** The system aims to establish a reliable and efficient delivery service that caters to the needs of both artisans and customers. Timely and safe delivery of products is crucial for customer satisfaction.
- **Market Exposure:** The system will employ marketing strategies to increase visibility, promote unique creations, and attract potential customers to explore and support local artisans.
- **Customer Engagement:** The system aims to facilitate customer feedback, reviews, and ratings, enabling artisans to gain valuable insights and improve their offerings.
- **Stakeholder Support:** The system allows stakeholders to request support whenever they encounter issues.

1.6 Solution Overview

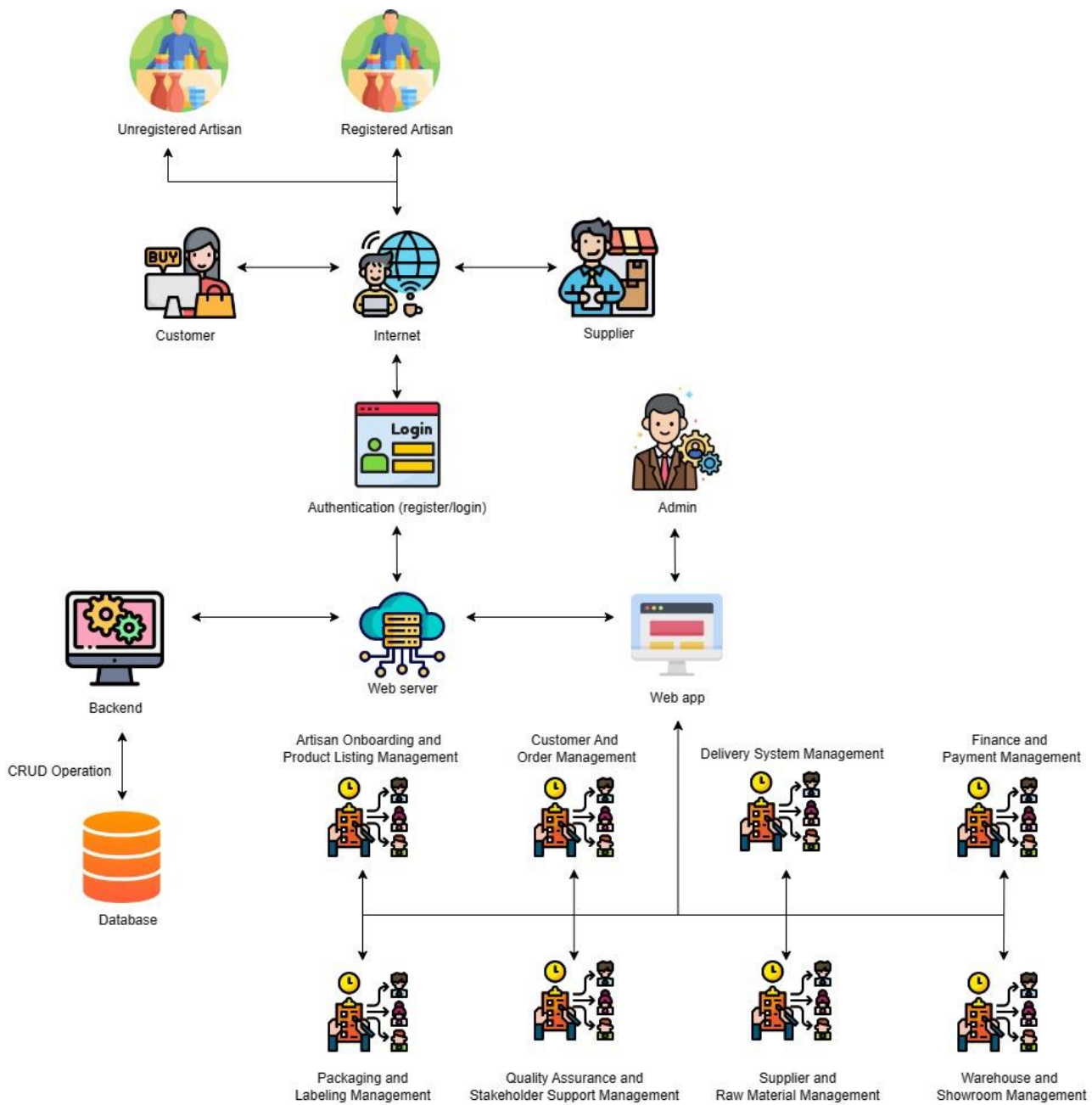


Figure 1.1

1.7 Methodology

1. Research and Requirements Gathering

- Stakeholder Engagement: Engaged local artisans and potential buyers through interviews, surveys, and focus groups to identify key requirements and preferences.
- Market Analysis: Conducted a comprehensive analysis of the local artisan market to identify opportunities, competitors, and market trends.

2. Design and Development

- User-Centered Design: Designed wireframes and prototypes based on stakeholder feedback to ensure an intuitive and user-friendly interface.
- Technical Architecture: Planned the technical architecture with a focus on scalability and performance.

3. Agile Development and Collaboration

- Agile Methodology: Followed agile development with regular stakeholder feedback and involvement.
- Collaboration with Artisans: Engaged local artisans in workshops and collaborative sessions to meet their needs.

4. Testing and Deployment

- User Acceptance Testing: Conducted iterative user acceptance testing to identify and rectify usability issues.
- Security Testing: Ensured rigorous security testing through penetration testing and vulnerability assessments.
- Pilot Launch: Conducted a limited pilot launch to test platform performance and make necessary adjustments.

1.8 A clickable link to the Git repo

Github-<https://github.com/Rayan-Weragala/Seller-Product-Registration-App.git> [2]

2 Requirements

2.1 Requirement Engineering Methods

Understanding the requirements and expectations of different stakeholders, such as artists, customers, raw-material suppliers, administrators, and other engaged parties, is necessary for the requirement engineering process for an online marketplace local artisan. Here are several techniques for gathering, examining, and documenting system requirements using requirement engineering.

1. Stakeholder interviews
Interview stakeholders to learn about their viewpoints, problems, and ideal qualities for the market. Stakeholder interviews might be conducted with local artists, prospective customers, and administrators. These interviews aid in understanding user expectations and wants.
2. Use case analysis.
The process of selling items, making purchases, processing payments, and managing user accounts are only a few examples of the system's many use cases, which may be identified and analyzed. Use case analysis helps identify functional requirements.
3. Prototyping
Perform risk analysis to identify potential risks and challenges that may impact the project's success. Addressing risks early in the process can help mitigate potential issues.
4. Validation and Verification
Verify requirements with stakeholders on a regular basis to make sure they are correct and fulfill their needs.

2.2 Requirements and Analysis

Artisan onboarding and product listing management-

User

1. Login/register with valid credentials.
2. Add products to the online marketplace.
3. View and update the seller profile information and products information.

System

1. User-friendly interface for sellers to input and manage product details, including titles, descriptions, images, prices, and inventory levels.
2. Make the changes made by the seller to the database.
3. Generate a report from the seller's listing details.

Packaging and labeling Management -

Admin

1. Can add new packaging materials, which are stored in the database.

2. A section to display all available material details in the inventory.
3. Can update material name, measurement, pattern and usage, and can also delete materials that are no longer needed.
4. Can download reports.
5. You can see a list of all pending orders and sort orders by categories.
6. Complete order fulfillment process and generate labeling process.
7. Download label and the QR code for printing.
8. Use the system to select a random winner among eligible participants monthly.
9. Check the quantity of packaging materials used and monitor consumption trends.
10. Download weekly inventory reports to share with employees.

System

1. User-friendly interface for easy navigation.
2. Manage available material details using database.
3. Generate a list of available materials and their quantities.
4. Generate reports from packaging inventory.
5. Calculate available material quantities and display.

Warehouse (Inventory) Management-

Manager

1. The Manager can add products, with their details, arriving at the warehouse into the database.
2. The Manager may also edit or remove entries made to the database.
3. The products in the warehouse can be viewed according to availability
4. The manager can download a pdf of the products (by availability and or month if desired) in the warehouse.
5. The manager may make entries of the packaged orders arriving at the warehouse that are to be delivered.
6. The manager can make orders requesting products that are out of stock/low stock to suppliers via email.

System

1. Keep track of the number of products in the warehouse as well as calculate the summation of products in warehouse.
2. User-friendly interface allowing for easy navigation.
3. Generate reports regarding the products in the warehouse.

Customer and Order management

Customer

1. Login / register with valid credentials.
2. Add products to the cart.
3. Remove items from the cart.
4. Customer can adjust the quantity of each item in their cart, increasing or decreasing the number of items they wish to purchase.
5. View and update the customer profile information.
6. View and update the customer order information.

System

1. User-friendly interface for customers to input and update order and profile details.
2. Manage a database of products available for purchase.
3. Manage a database of customer details.
4. Keeps track of product details such as name, description, price, and availability.
5. Calculate the total shopping costs.
6. Generate reports regarding the customer order information.

Financial & Payment Management**Admin.**

1. Create Coupons, Update and Edit those coupons accordingly
2. Approve or decline Transactions (Verify transactions)
3. Approve or decline refunds by the customers.
4. Generate reports of analysis
5. View refunds & Transaction history
6. Update status of transactions (verify the transactions)
7. View Sales Analysis

System.

1. User friendly interface for the manager
2. Generate reports of coupons
3. Display total sales, number of total orders and number of sales!
4. Filter data according to admin need.
5. Update the database when data changed.

Supplier And Material Management**Admin.**

1. Can add new suppliers and Materials to the system.
2. View all the suppliers who registered and materials that are added.
3. Can update the supplier and material list if any changes happen.
4. reports on all the existing suppliers and all the available materials.

System

1. Keep track of all the supplier and material count in the system.
2. Provide user friendly interface to interact.
3. Generates reports of Suppliers and materials.
4. Make changes that are done by the user.

3 Design and Development

3.1 Use Case Diagrams [3]

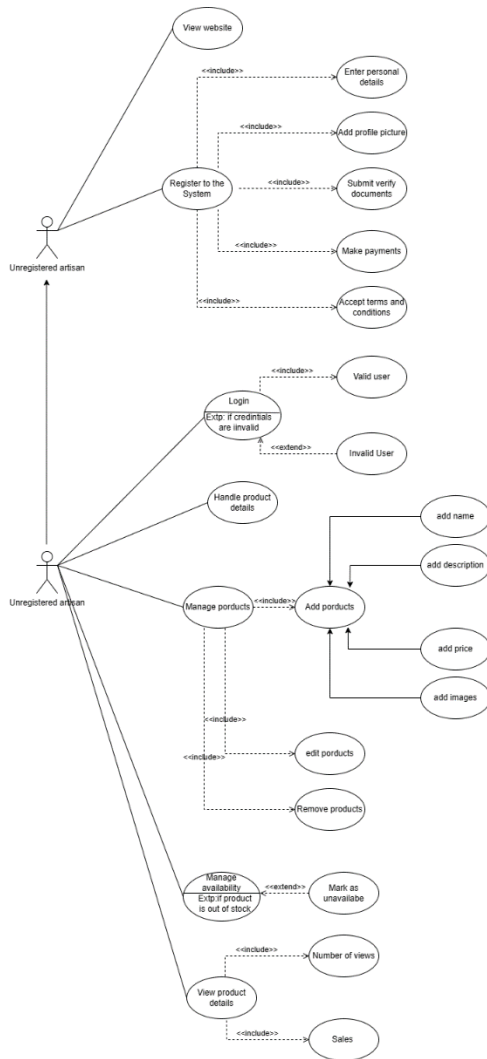


Figure 3.1 Use case diagram for Artisan onboarding and product selling.

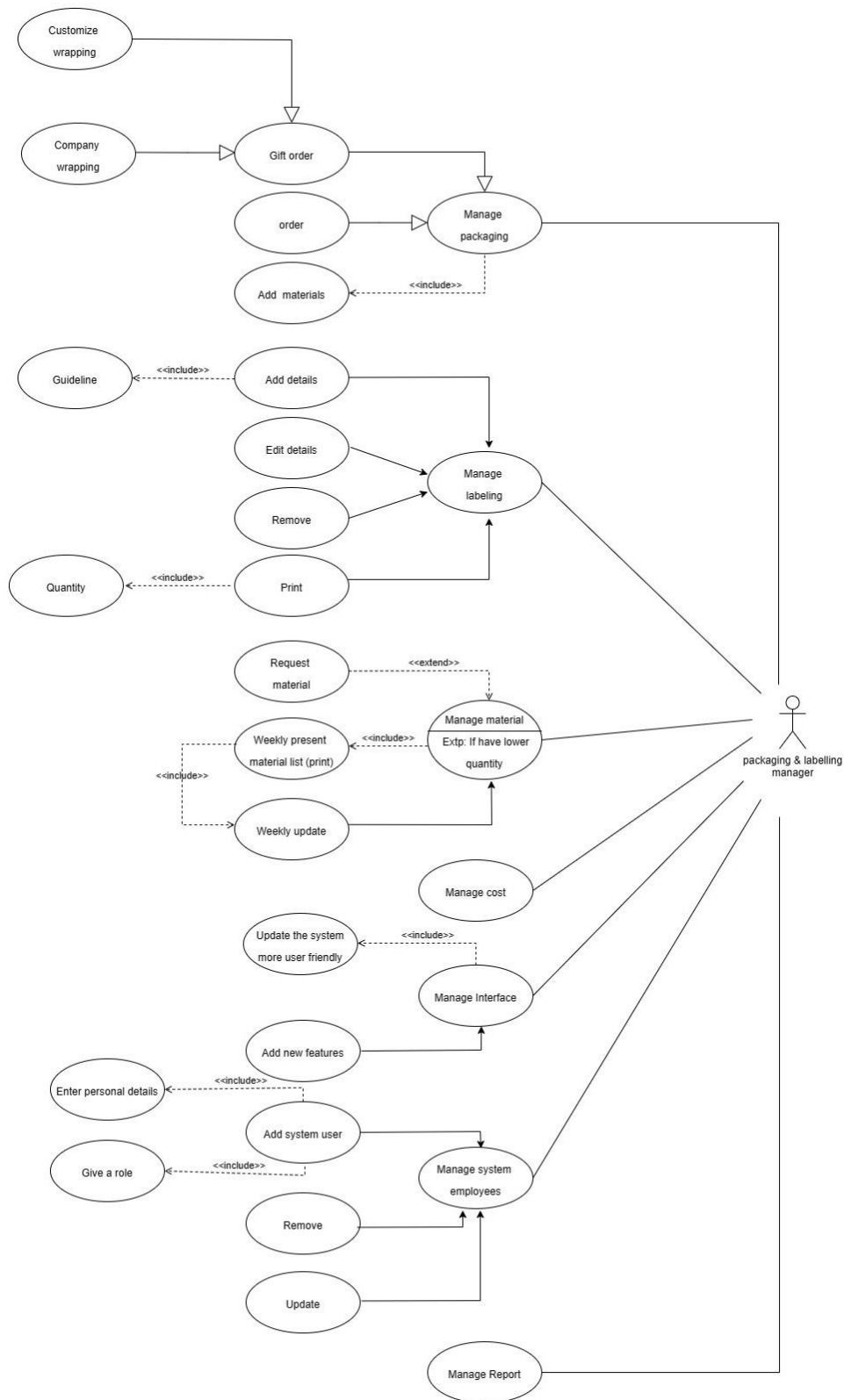


Figure 3.2 Use case diagram for Packaging and Labeling

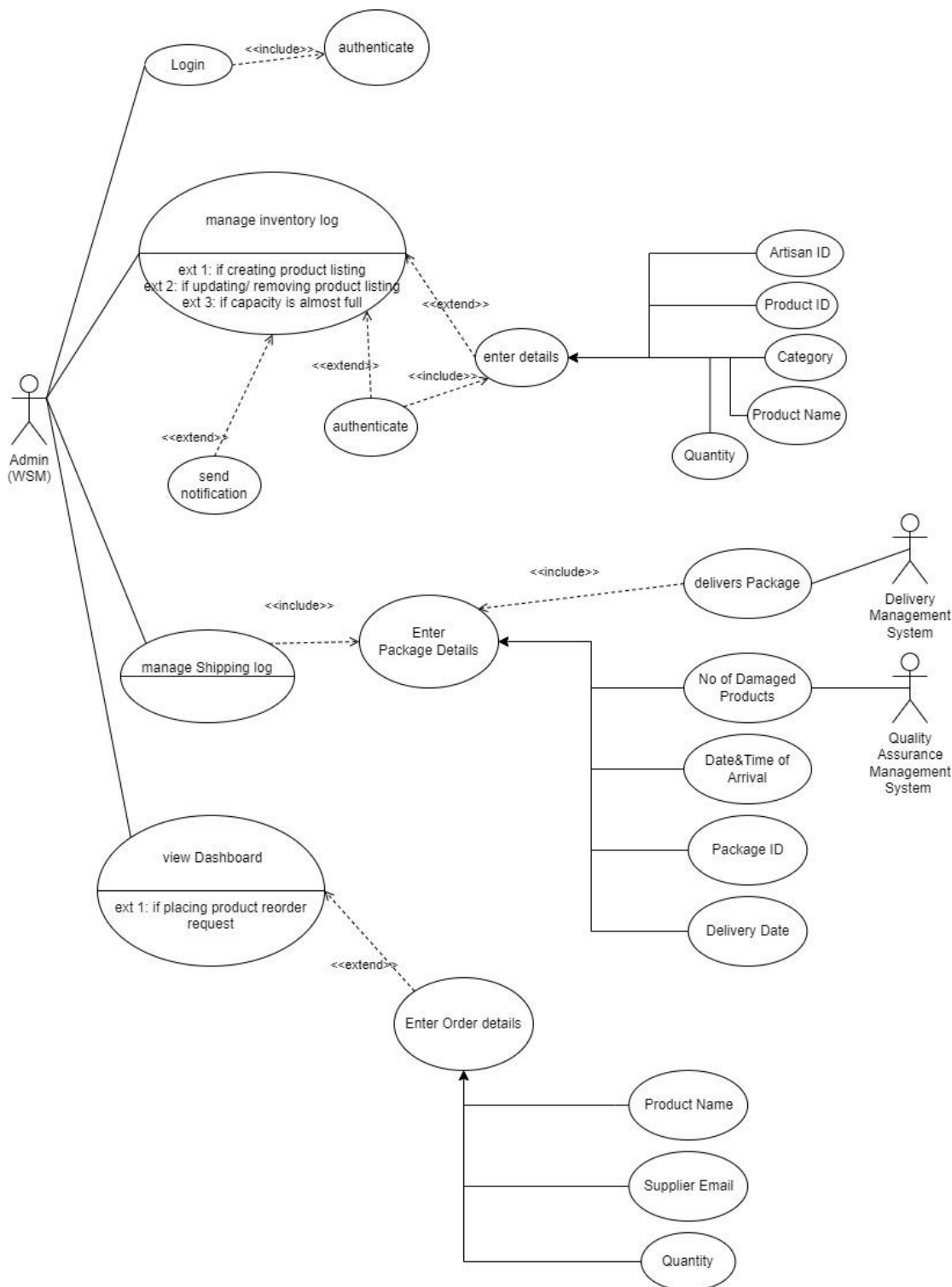


Figure 3.3 Use case diagram for Inventory management.

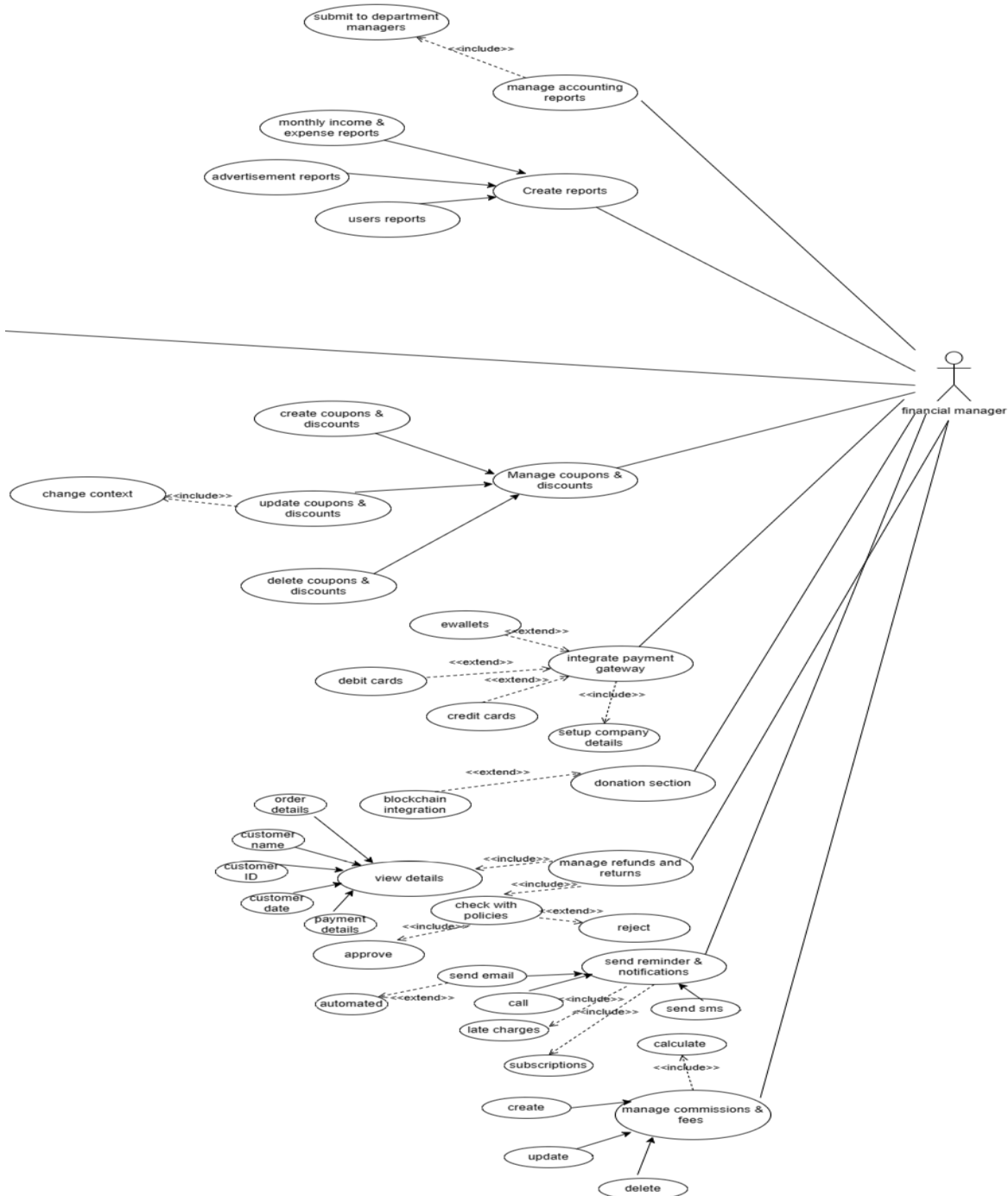


Figure 3.4 User case for Financial & Payment Management

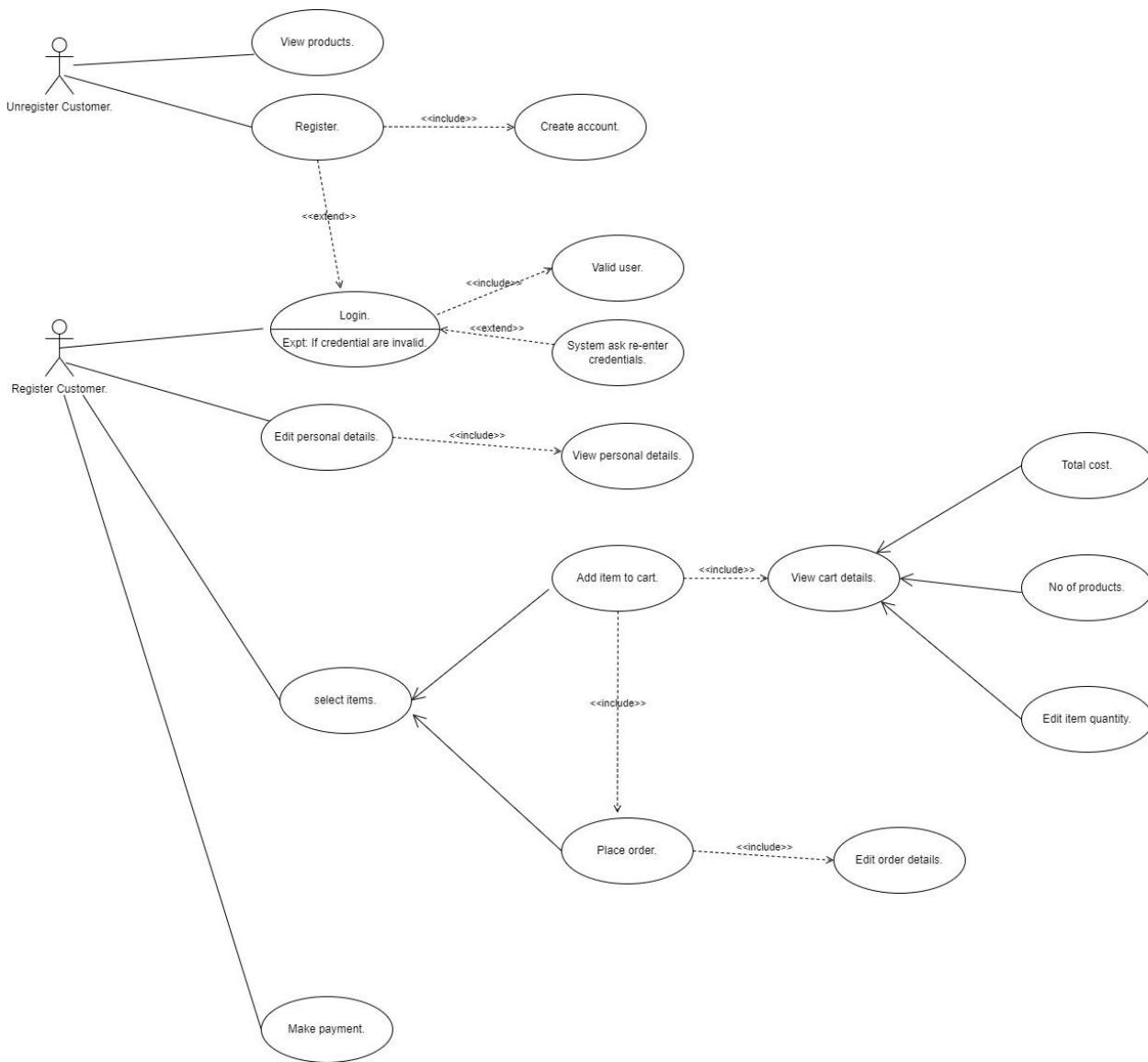


Figure 3.5 Use case diagram for customer management.

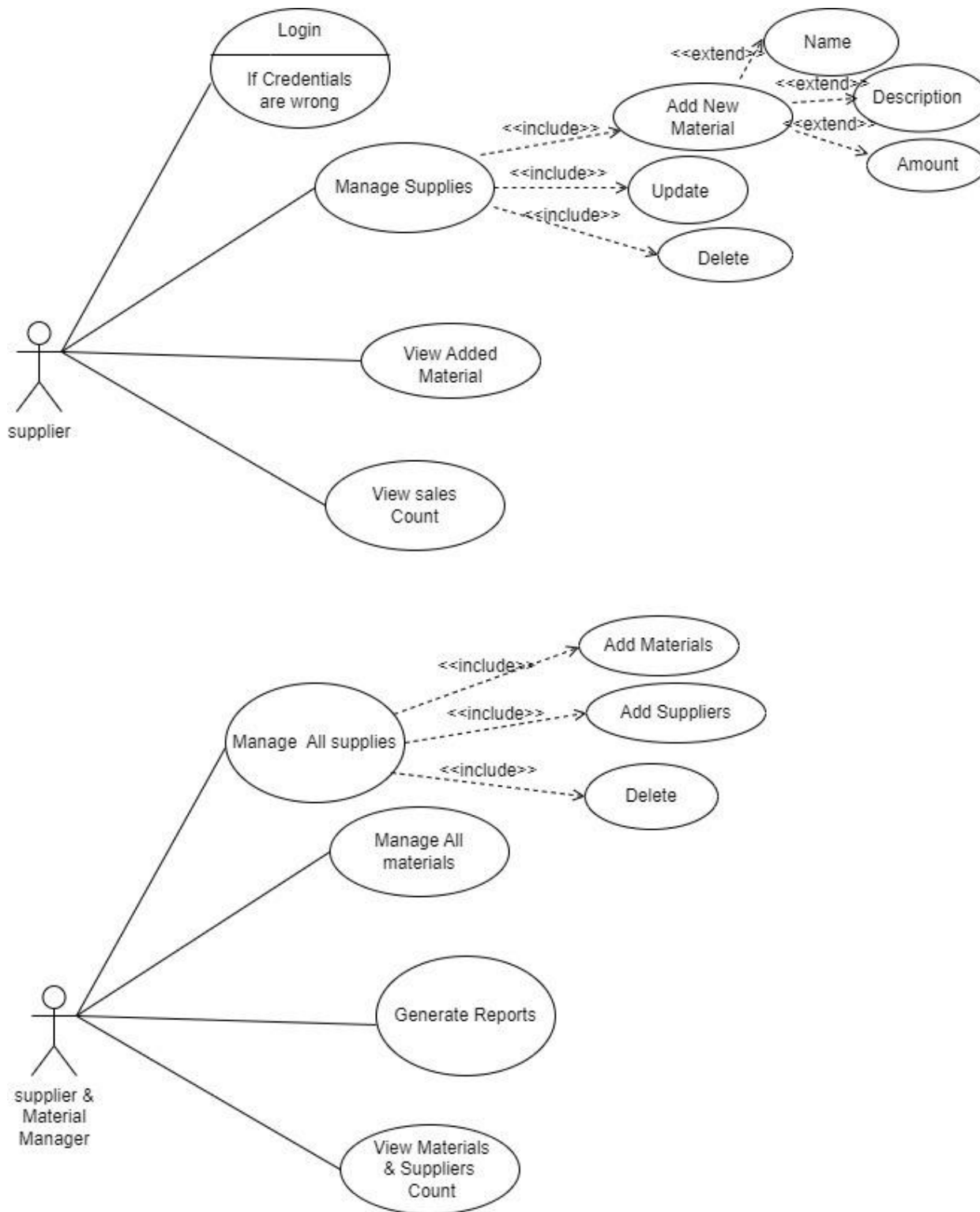


Figure 3.6 Use case diagram for Supplier management

3.2 Activity Diagrams [3]

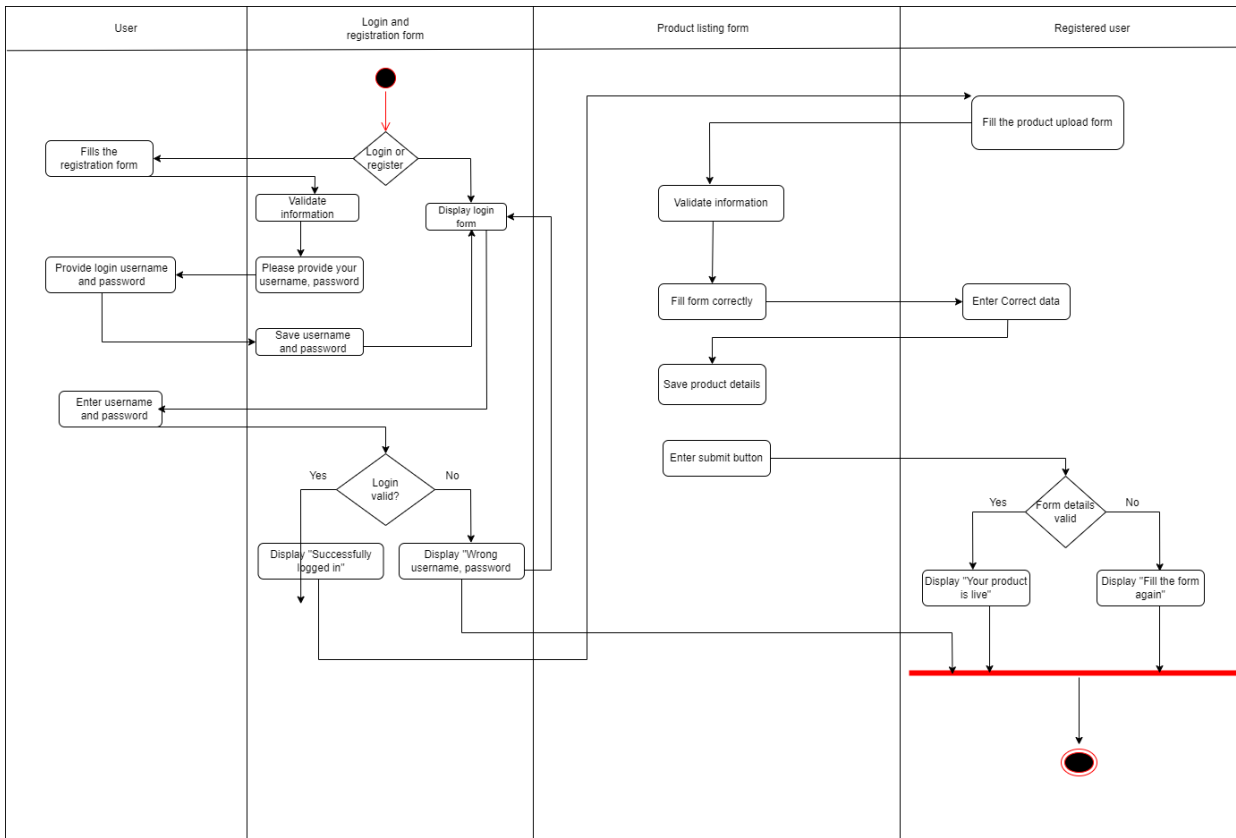


Figure 3.7 Activity diagram for Artisan onboarding

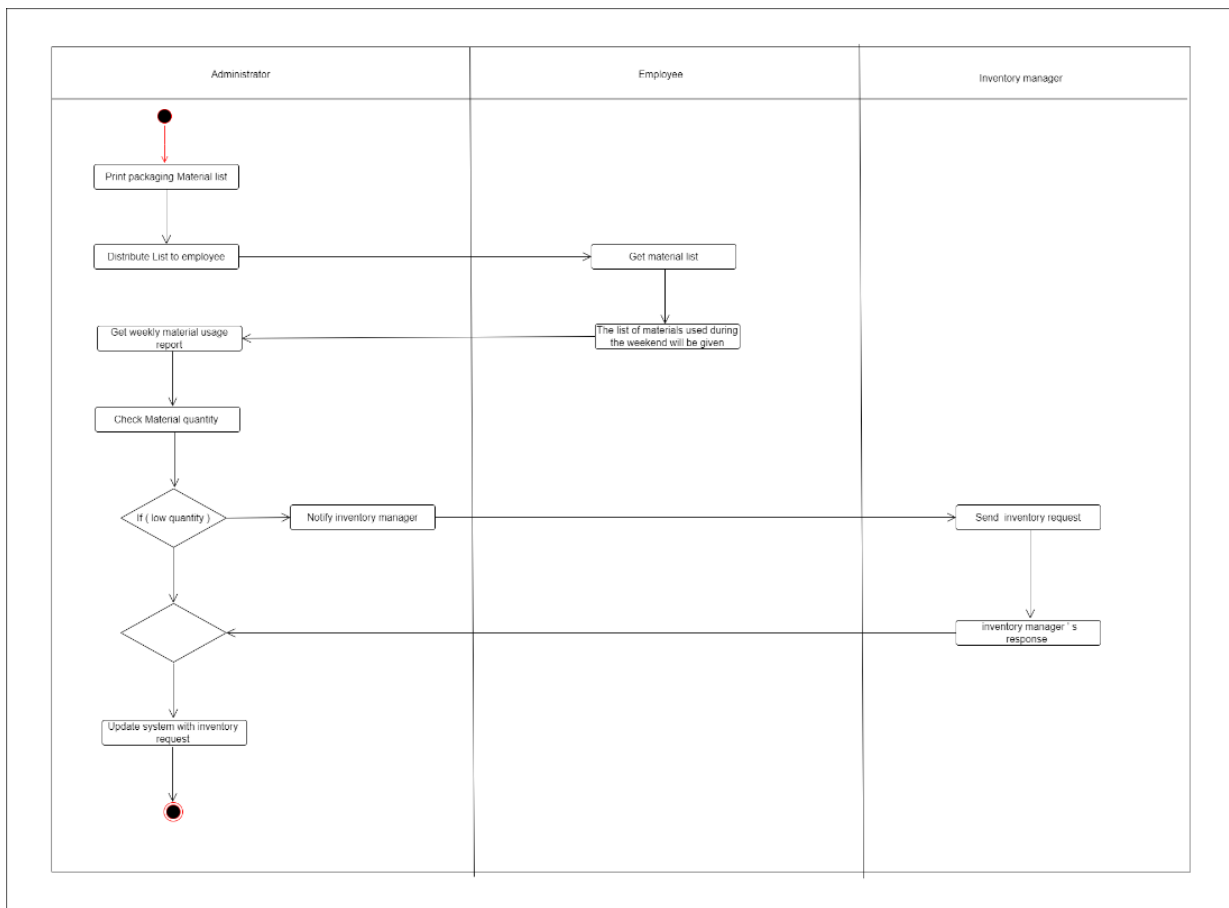


Figure 3.8 Activity diagram for packaging and labeling

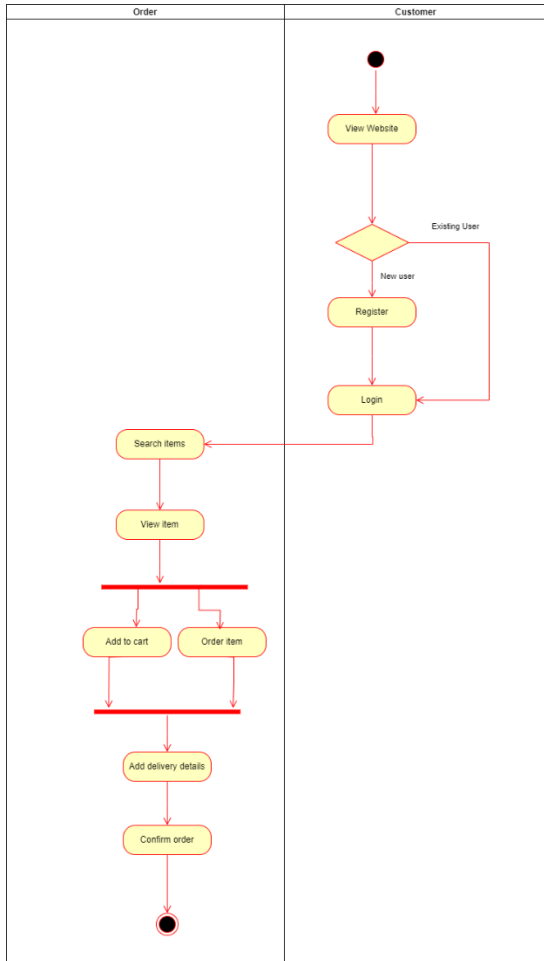


Figure 3.9 Activity diagram for Customer management

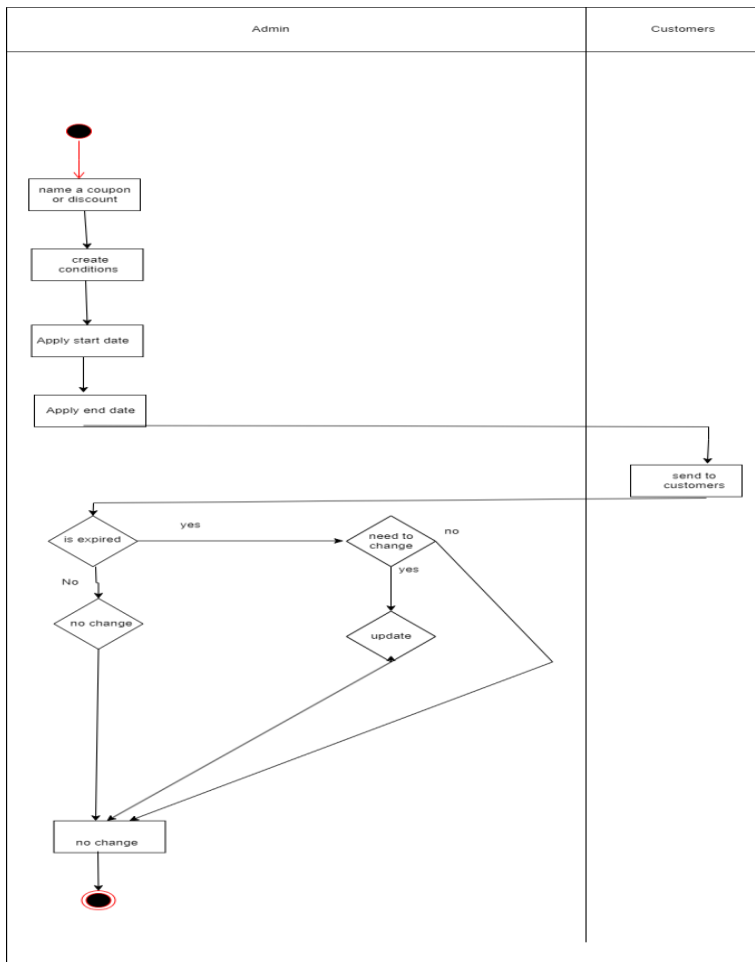


Figure 3.10 Activity diagram for Finance Management

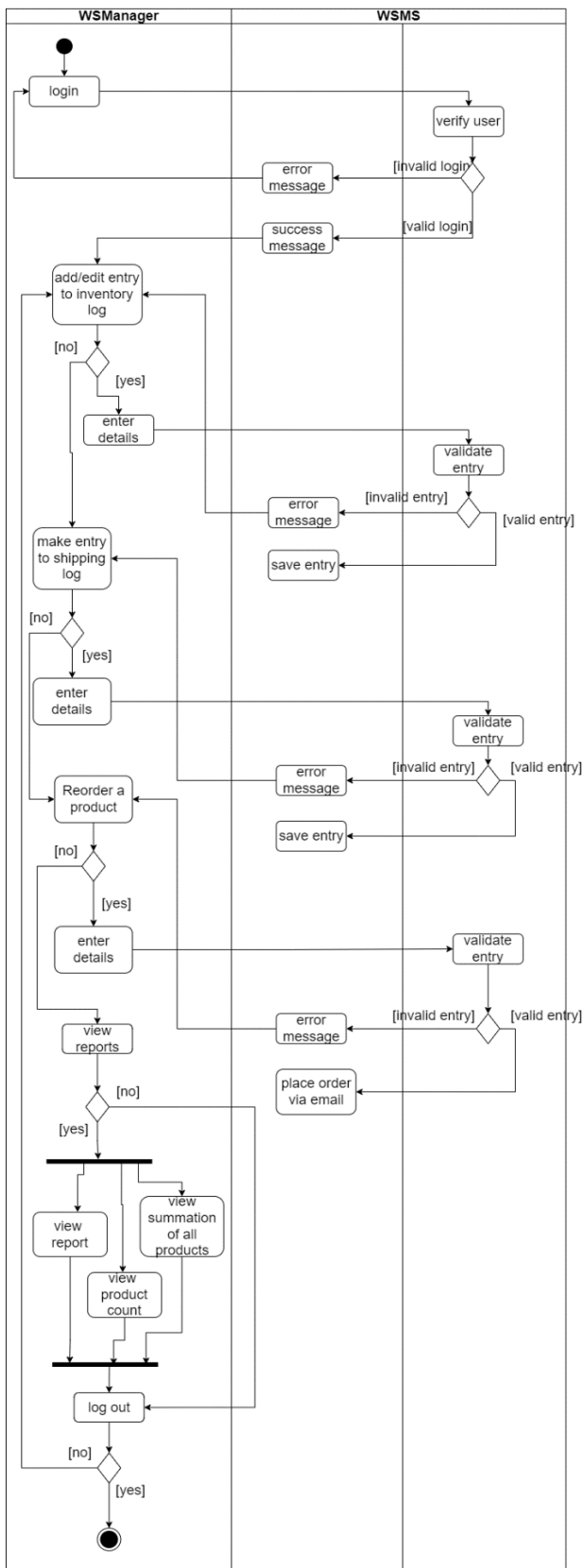


Figure 3.11 Activity diagram for Warehouse management

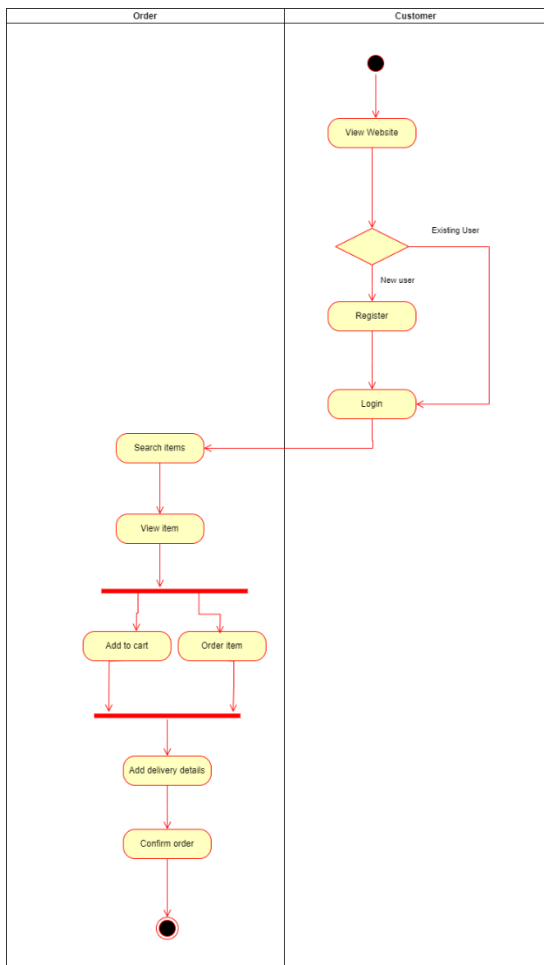


Figure 3.12 Activity diagram for customer and order management.

3.3 ER Diagram

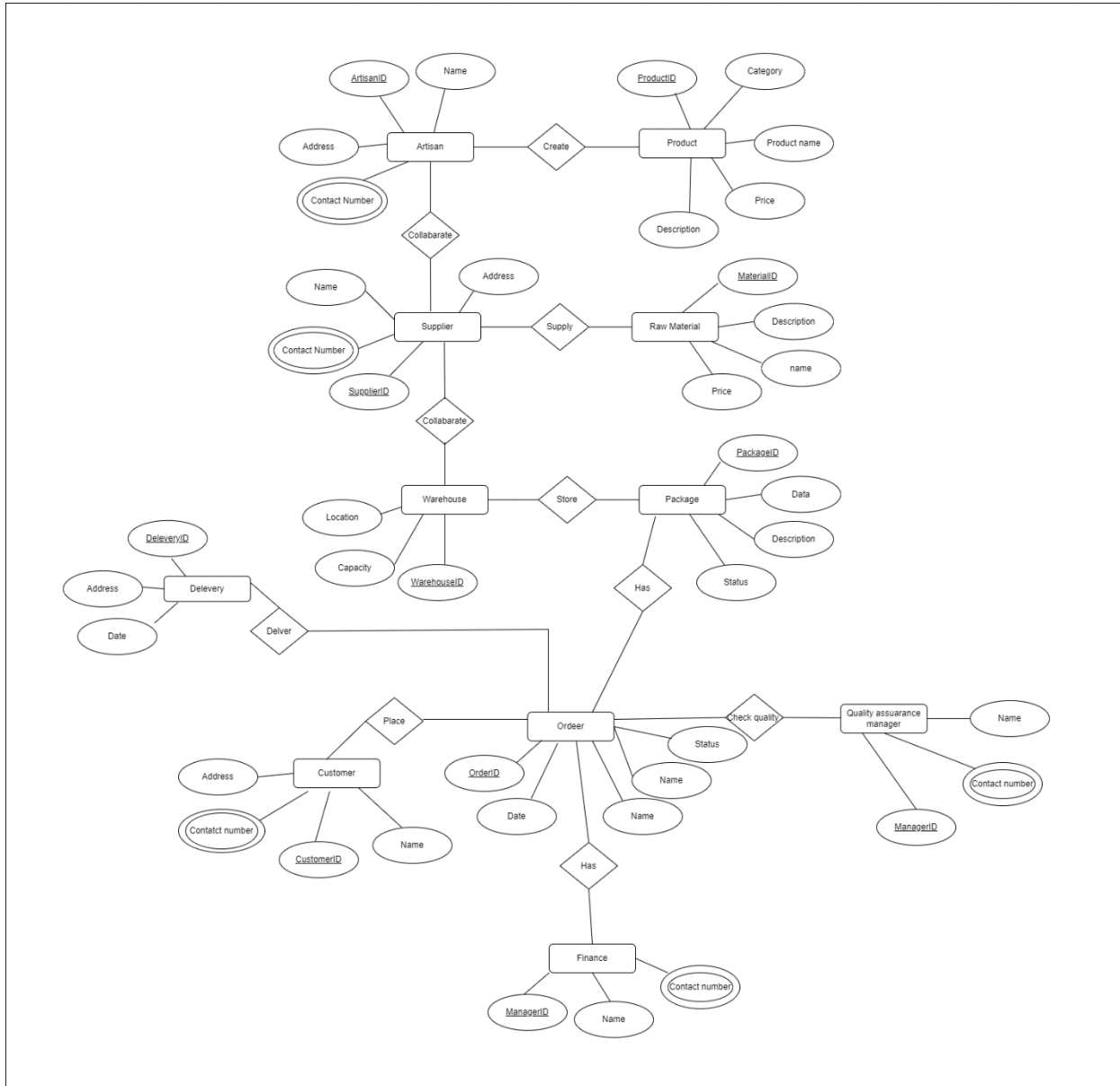


Figure 3.13 ER diagram

3.4 Development Tools and Technologies

Visual Studio Code

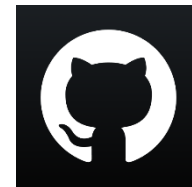
This platform we are using because it is very easy to use, and it is very user friendly. Also, VS Code has built-in support for Git. As well as it has Cross-platform



friendly. Also, VS compatibility.

Github [2]

We are managing our project with Github. Github is a web-based platform that software development and version control using Git. It allows developers to projects by providing tools for managing source code, tracking changes, and other software development tools.



provides hosting for collaborate on integrating with

MongoDB [4]

We are going to use this platform as our database. MongoDB provides a language and indexing system, making it easy to search and retrieve data efficiently.



powerful query quickly and

Express JS [5]

Express is a fast and minimalist web application framework for Node the process of building server-side applications by providing a set of flexible tools.



JS. It simplifies robust and

React JS [6]

React is a widely adopted and highly efficient JavaScript library that enables us to create interactive and dynamic user interface.



Node JS [7]

Node JS is a JavaScript runtime used for-side applications enabling web development with a vast library of packages.



fast and scalable

4 Testing

Two different approaches were used to test the Local Artisans Online Marketplace, ensuring improved manageability and dependability of the system. The main goal of that testing phase was to deliver an outstanding, user-friendly, and high-performance platform for both craftsmen and buyers. The testing strategy centered on methodically and quickly discovering a broad spectrum of potential problems. Essentially, testing involved executing the system to find any bugs or flaws, with success defined as having a high chance of uncovering any potential faults.

While those tests might not have caught every possible problem, it was crucial to remember that they were a necessary step in guaranteeing the functionality and quality of the marketplace.

4.1 Test cases

Test case designed by: IT21820946.

Test priority (High/ Medium/ Low): High

Pre – conditions (if there are any): Seller should be logged into the system add a new product.

Test steps:

- New user register and login to the system.
- Go to the add product page.
- Click the add product button.
- Fill in the form with relevant details.
- Click on the submit button.

Test id	Test input	Expected output	Actual Output	Result (Pass/Fail)
T01	Product name- Test product Product description-Test description Materials used- Test. Category- Test Regular Price- 500 Stock number- 10 Images- 6 Images Dimensions- 8 x 4 x 3	Product added successfully	Product added successfully	Pass
T02	Product name- Test product 2 Product description-Test description 2 Materials used- Test 2 Category- Test 2 Regular Price- 500 Stock number- 10 Images- No images Dimensions- 8 x 4 x 3	Product added successfully	You must upload at least one image!	Fail

Table 4.1

Test case designed by: IT21821486.

Test priority (High/ Medium/ Low): High

Pre – conditions (if there are any): Financial manager should log into the system

Test steps:

- Navigate to coupon management page
- Click the add coupon button
- Fill the form completely with relevant details
- Click submit button

Test id	Test input	Expected output	Actual Output	Result (Pass/Fail)
T01	Coupon name- Test 1 Coupon Code- Test01 Coupon amount-9.99 Type-Company Status-Active Start Date-09/12/2023 End Date-09/20/2023	Coupon created successfully	Coupon created successfully	Pass
T02	Coupon name- Test 2 Coupon Code- Test02 Coupon amount-12 Type-Seller Status-Deactive Start Date-08/12/2023 End Date-09/01/2023	Coupon created successfully	End Date cannot be a before Start Date	Fail

T03	Coupon name- Test 3 Coupon Code- Test03 Coupon amount-asas@12 Type-Seller Status-Active Start Date-08/12/2023 End Date-09/01/2023	Coupon created successfully	Amount cannot contain Letters, characters Only Number or decimals	Fail
-----	---	-----------------------------	---	------

Table 4.2

Test case designed by: IT21818202.

Test priority (High/ Medium/ Low): High

Pre – conditions (if there are any): Customer should be logged into the system and add products to cart.

Test step:

- New Customer register and login to the system.
- Go to the product details page.
- Click the Add to cart button.
- A confirmation message appears, indicating that the item has been successfully added to the the cart.
- Click on the view cart button to go to the cart page.
- The customer is directed to the shopping cart page, where they can see a summary of the items in their cart, including names, quantities, prices, and the total cost.
- Click on the order confirmation button.

Test id	Test input	Expected output	Actual Output	Result (Pass/Fail)
T0	Product name- Coconut shell spoon Product description- The objective of the project was to design and develop a new range of cooking accessories Materials used- Coconut shell. Category- Coconut shell products. Regular Price- 900	Display message “Add product to cart successfully”	Display message “Add product to cart successfully”	Pass

T02	<p>Product name- Handicrafts.</p> <p>Product description- The objective of the project was to design and develop a new range of cooking accessories</p> <p>Materials used- Clay.</p> <p>Category-Clay pot.</p> <p>Regular Price- 1000.</p>	Display message “Add product to cart successfully”	Display message “Add product to cart successfully”	Pass
-----	--	--	---	------

Table 4.3

Test case designed by: IT21813702.

Test priority (High/ Medium/ Low): High

Pre – conditions (if there are any): Customer should be logged into the system.

Test step:

- Go to the inventory log page.
- Enter product details in the form
- Click the Add button.
- The product table should be updated with the new entry (when all fields are filled correctly)
- Click on the “Edit” logo next to any product entry.
- Edit the data in any (or all) of the fields.
- Click on the Submit button
- The product entry that you edited should be updated with the changes and displayed in the table.
- Click on the “Delete” logo next to any product entry.
- The table should be updated with the previously selected product entry removed.
- Click on the Inventory Page button
- The Manager is directed to the inventory page, where they can see an up-to-date list of all the items in the warehouse, including product name, quantity and availability.

Test id	Test input	Expected output	Actual Output	Result (Pass/Fail)
T01	Product Name - Coconut shell spoon Category - Coconut shell products. Quantity- 25 Artisan ID - AT233 Product ID - CS345 Availability - Available	Display product entry in table successfully.	Product entry displayed in table successfully.	Pass
T02	Product Name - Coconut shell spoon Category - Coconut shell products. Quantity- -255 Artisan ID - AT233 Product ID - CS345 Availability - Available	Display message “Quantity must be non-negative”; product entry not added to table.	Message “Quantity must be non-negative” displayed; product entry not added to table.	Pass

T03	Product Name - Category - Quantity- Artisan ID - Product ID - Availability - Available	Display message “Please fill in all the fields”; product entry not added to table	Message “Please fill in all the fields” displayed; product entry added to table	Pass

Table 4.

Testing Function: Functionality of adding new materials.

Test case designed by: IT21826740.

Test priority (High/ Medium/ Low): High

Pre – conditions (if there are any): Packaging and labeling manager should be logged into the system.

Test step:

1. Go to the packaging inventory section.
2. Click on the add new material button.
3. Fill in the form with relevant details.
4. Click on the submit button.
5. Pop up successful alert.

Test id	Test input	Expected output	Actual Output	Result (Pass/Fail)
T01	Material: Box Measurements: 22x22 Design/Pattern: Primary packaging Usage: For store items	Material Added successfully.	Material Added successfully.	Pass
T02	Material: Box Measurements: 22x22 Design/Pattern: Primary packaging Usage:	Please fill in all fields correctly.	Please fill in all fields correctly.	Pass
T03	Material: 2	Please enter a valid name.	Please enter a valid name.	Pass

Table 4.4

5 Evaluation and Conclusion

5.1 Evaluation [8]

To evaluate the online marketplace for local artisans, we conducted a series of tests and gathered feedback from both users and experts in the field. The evaluation is based on the following key areas:

5.1.1 User Experience

We assessed the user experience by conducting usability testing with a group of potential users. They were asked to perform tasks such as searching for products, creating a seller profile, and making a purchase. Feedback was collected regarding the ease of use, navigation, and overall satisfaction.

5.1.2 Performance

We measured the platform's performance in terms of speed, responsiveness, and reliability. Load testing was conducted to ensure that the website could handle a significant number of users simultaneously. We also monitored server response times and uptime.

5.1.3 Security

The security of the online marketplace was evaluated by conducting security assessments to identify and mitigate vulnerabilities. We ensured that user data, especially payment information, was protected from potential threats.

5.1.4 Seller and Product Quality

We assessed the quality of artisans and their products by evaluating reviews and ratings provided by users. We also conducted random checks to verify the authenticity of sellers and the quality of their handmade products.

5.1.5 Marketing and Promotion

The effectiveness of marketing strategies in attracting both buyers and sellers was evaluated. We analyzed the return on investment for various marketing campaigns and assessed their impact on the platform's growth.

5.2 Conclusion

5.2.1 Achievement of Objectives

The primary objectives of creating an online marketplace for local artisans were:

- **Promoting Local Artisans:** The platform successfully showcased the skills and crafts of local artisans, helping them reach a wider audience and gain recognition.
- **Facilitating Transactions:** The platform enabled seamless transactions between buyers and sellers. It provided multiple payment options and secured payment processing.
- **User Engagement:** User engagement was high due to the appealing design, user-friendly interface, and interactive features of the platform.
- **Security:** Robust security measures were in place to protect user data and transactions, ensuring a safe and trustworthy environment for both buyers and sellers.

- Market Growth: Marketing efforts, including social media campaigns, collaborations with local influencers, and SEO optimization, contributed to the steady growth of the marketplace.

5.2.2 Achievement of Aim

The aim of creating an online marketplace for local artisans was to provide a platform that connects artisans with a global audience while preserving the authenticity and uniqueness of their products. This aim has been effectively achieved:

- Local artisans have gained exposure to a wider audience, both locally and internationally, increasing their sales and revenue.
- The platform has helped in preserving and promoting local art and culture by facilitating the sale of handmade, unique products.
- Users have expressed satisfaction with the platform, praising its user-friendly interface and the quality of artisan products.

In conclusion, the online marketplace for local artisans has not only met but exceeded its objectives and achieved its aim. It has provided a thriving platform for local artisans to showcase their skills and connect with a global customer base while maintaining the authenticity of their craft. The marketplace has successfully facilitated transactions, provided a secure environment, and grown its user base through effective marketing strategies. The future prospects of the platform look promising, with potential for further growth and impact on the local artisan community.

6 Appendix A

	Name with initials	Registration number	Work distribution
1.	Weragala R.T. L	IT21820946	<p>Artisan Onboarding and Product Listing Management.</p> <ul style="list-style-type: none"> • Implementing artisan onboarding interface. • Create a method for new artisans to login and register to the system. • Create a method to manage artisan profiles. • Create a method to verify Artisan account. • Implementing product listing interface • Create a method to add, update and delete their products. • Create a method for view product selling and other insights. • Implementing product listing interface
2.	Navodya M.M.C	IT21818202	<p>Customer And Order Management</p> <ul style="list-style-type: none"> • Implementing customer order interface and shopping cart. • Create a method for customers to login and registration. • Create a method to manage customer profiles. • Create a method to verify customer accounts. • Create a method to add, update, and remove products from the cart. • Create a method to confirm and remove customer orders.
3.	K.D.Dilini	IT21826740	<p>Packaging and Labeling Management</p> <ul style="list-style-type: none"> • Implement interface for packaging and labeling. • Method to create labels and print them. • Create a method to check the status of available materials and print it. • Generate a report on packaging materials, then update it weekly. • Create a method to update, add, delete, and view inventory database. • Create a method to generate unique QR code for each package. • Create a method to notify customer “Their package is ready to be delivered”.

4.	Gunawardena S. N. A	IT21300332	<p>Delivery System Management</p> <ul style="list-style-type: none"> • Delivery manager and driver interface. • Implement a method to display packaged deliveries into the manager and driver interfaces. • Create a method for the manager to assign routes and drivers to each other. • Create a method for drivers to request to change their delivery route. • Create a method for managers to create, read, update and delete entries in the deliveries, drivers, routes and vehicles tables.
5.	Vithanage H.P	IT21823220	<p>Supplier and Raw Material Management</p> <ul style="list-style-type: none"> • Design supplier and raw material interface. • Implement a method for new suppliers to register and log into their own profile. • Design a method to Add, edit, view supplier's own supplies. • Create a method to notify supplier when they get an Order. • Create a method to notify Customer/Artisan through their Order process. • Add a method to generate unique code to each registered supplier.
6.	Amarasighe V.D	IT21813702	<p>Warehouse and Showroom Management</p> <ul style="list-style-type: none"> • Design an interface for warehouse and showroom. • Create a notification system for capacity checks and other reminders. • Design a method to automatically update capacity when products are added/removed from inventory. • Design a method to record and manage products in the showroom. • Design a system to record and manage the products in the warehouse. • Create a method to make changes to data in the system.

7.	A.S.G. Punchihewa	IT21821486	<p>Finance and Payment Management</p> <ul style="list-style-type: none"> • Create a dashboard to view business analytics. • Create methods to show business analytics. • Integrate payment gateway system to the webapp. • Add security measures for online transactions. • Integrate blockchain for donation to done by cryptocurrencies. • Develop an algorithm for commission calculation. • Create methods to add, update & delete commissions. • Implement functions to send remainders and notifications. • Develop functions for refunds, approvals, and rejections. • Implement cryptocurrencies transactions. • Integrate blockchain technology for unique Arts and crafts. • Develop algorithms for coupons and discounts calculations. • Implement methods to create, update & delete coupons and discounts. • View details about refunds along with orders details <p>Develop and produce company reports employing analytics.</p>
All members			<ul style="list-style-type: none"> • System Design • Database Management • Documentation • Communication and Coordination

Table 6.1 Individual works

7 Appendix B

7.1 IT21820946-Weeragala R.T.L

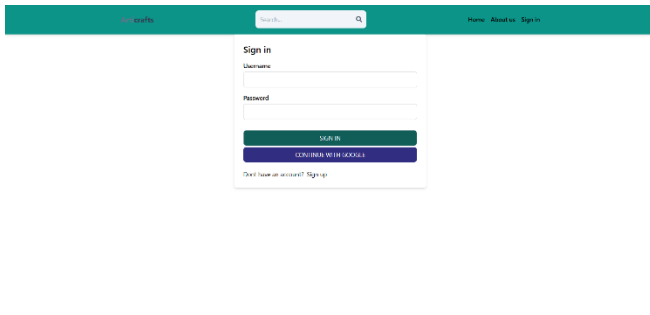


Figure 7.7.1 Login UI

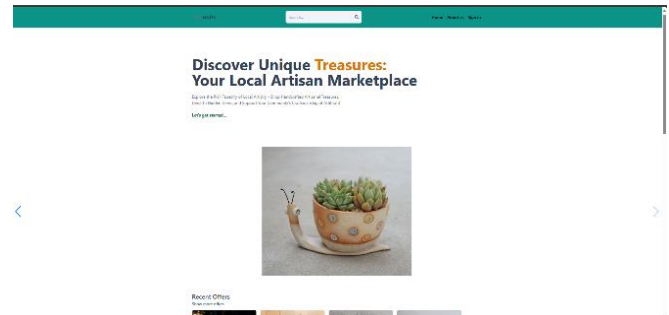


Figure 7.2 Home

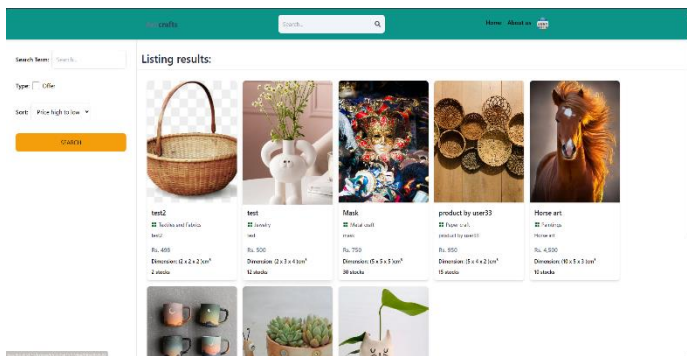


Figure 7.3 Search UI

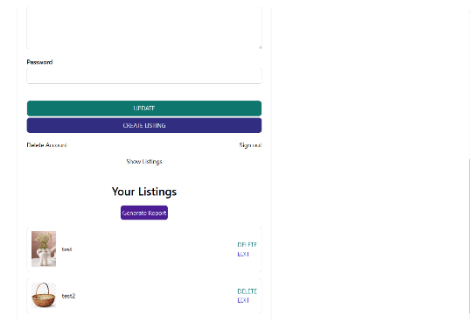


Figure 7.4 Show listings UI

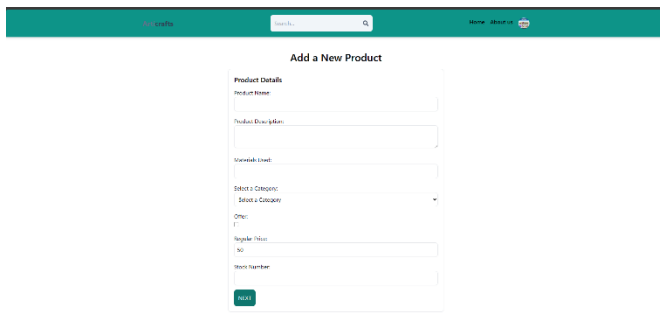


Figure 7.5 Add product UI

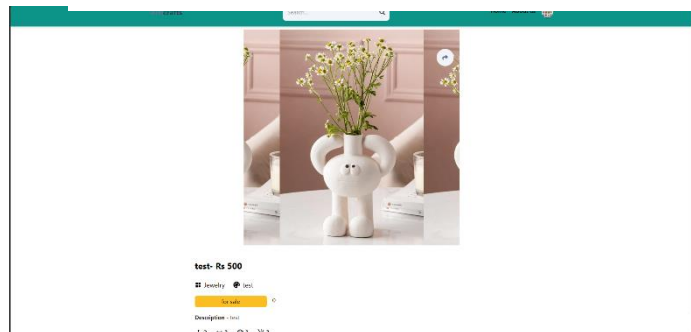


Figure 7.6 View product details UI

7.2 IT21813702- Amarasinghe V.D

Add a New Product

Product Name

Product Category

Quantity

Artisan ID

Product ID

Availability

Select Option

Add Product

Handle	Category	Q	AT234	P123	availability	
Ceramic Doll	Ceramics	0	AT754	C228	unavailable	
Wooden Mask	Wooden Crafts	2	AT234	P123	available	

Add a New Product

Product Name

Product Category

Quantity

Artisan ID

Product ID

Availability

Select Option

Add Product

Please fill in all the fields

Wooden Mask	Wooden Crafts	2	AT234	P123	available	

Figure 7.8 New/Edit Product UI

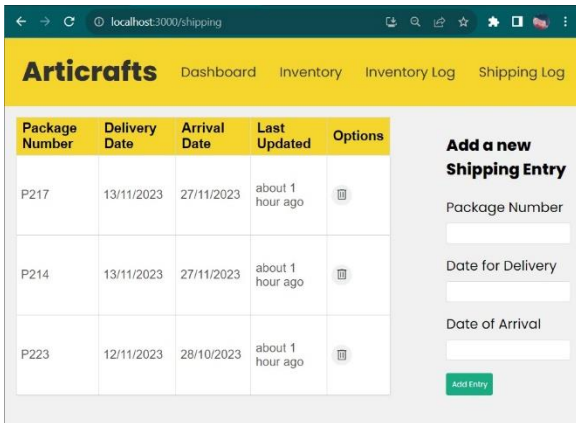
Figure 7.7 Add/Edit product validation.

Articrafts Dashboard Inventory Inventory Log Shipping Log

All Available Unavailable Generate PDF

Product Name	Category	Quantity	Artisan ID	Product ID	Availability	Options
Wooden Handle	Wooden Crafts	5	A123	W234	available	
Ceramic Doll	Ceramics	0	AT754	C228	unavailable	
Wooden Mask	Wooden Crafts	2	AT234	P123	available	

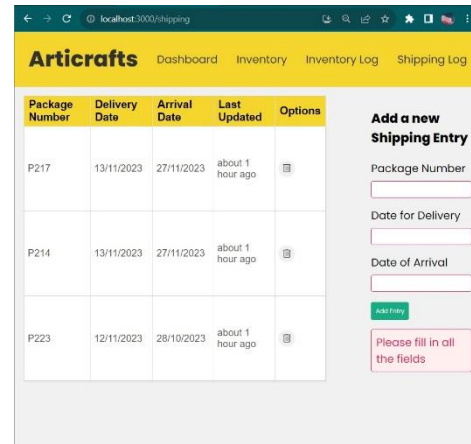
Figure 7.9 Inventory log data



The screenshot shows the 'Shipping Log' page of the 'Articrafts' application. It features a table with columns: Package Number, Delivery Date, Arrival Date, Last Updated, and Options. The table contains three entries with package numbers P217, P214, and P223. To the right of the table is a form titled 'Add a new Shipping Entry' with fields for Package Number, Date for Delivery, and Date of Arrival, and an 'Add Entry' button.

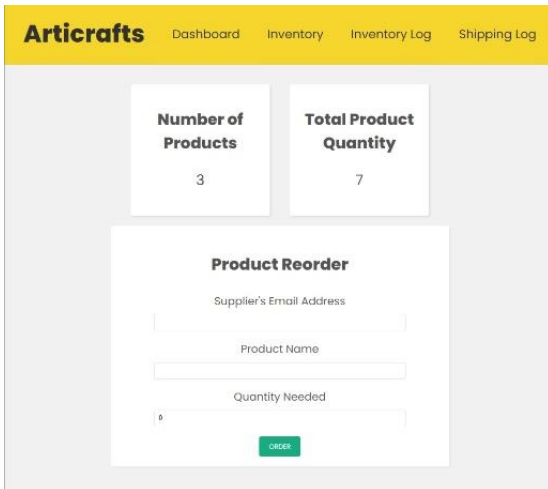
Package Number	Delivery Date	Arrival Date	Last Updated	Options
P217	13/11/2023	27/11/2023	about 1 hour ago	
P214	13/11/2023	27/11/2023	about 1 hour ago	
P223	12/11/2023	28/10/2023	about 1 hour ago	

Figure 7.13 Shipping Log Data and UI



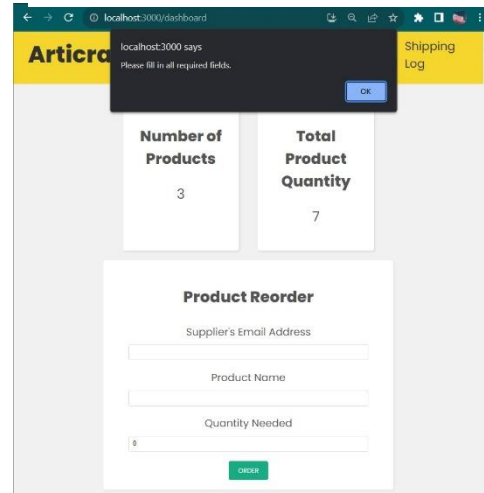
The screenshot shows the 'Add a new Shipping Entry' form. It has fields for Package Number, Date for Delivery, and Date of Arrival. A green 'Add Entry' button is at the bottom. A pink validation message box at the bottom right says 'Please fill in all the fields'.

Figure 7.12 Shipping Log Entry Validations



The screenshot shows the 'Dashboard' page of the 'Articrafts' application. It features two cards: 'Number of Products' with the value 3, and 'Total Product Quantity' with the value 7. Below these is a 'Product Reorder' form with fields for Supplier's Email Address, Product Name, and Quantity Needed, and an 'ORDER' button.

Figure 7.11 Dashboard and Reorder UI



The screenshot shows the 'Product Reorder' form with a validation message overlay. The message says 'localhost:3000 says Please fill in all required fields.' and has an 'OK' button. The form fields and 'ORDER' button are visible behind the message.

Figure 7.10 Reorder form validations

7.3 IT21826740-K.D.Dilini

Figure 7.14 Packaging inventory UI

ARTICRAFT | All Materials | Add Materials | Pending Orders | Complete Order | Generate Label | Print Label | Reorder | Inventory

PACKAGING INVENTORY

Search by Name

Name	Measurements	Pattern	Usage		
Woven Tissue	80x80	secondary design	This is a heavy-duty packaging material primarily made out of jute fiber, partially, food grains are supplied to woven tissue.	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Parliament Paper	80x80	primary design	Parliament papers are also known as book paper or booky paper and are used extensively in the book industry. Muffins, butter, and many other food items are wrapped in parliament papers before packaging. The tissue them does not allow the paper and comes out easily.	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Glass Containers	220x4	Primary Packaging	Classic glass containers are used to pack food items, biscuits, supplement powders, and many other things - however, they are very fragile and often need another layer of protection.	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Wooden Pallet	80x20	Primary Packaging	Wooden pallets are used to stack goods upon them. Because of their shape, shifting large packages or stacks of goods using forklifts becomes easy.	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
Bubble wrap	80x20	Primary Packaging	Bubble wraps are one of the most common packaging materials. These are used to deliver or carry fragile items. Bubble wraps are plastic coverings filled with tiny air pockets. The bubble of bubble wrap acts as a cushion and protects delicate items.	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

Figure 7.15 Add new materials.

ARTICRAFT | All Materials | Add Materials | Pending Orders | Complete Order | Generate Label | Print Label | Reorder | Inventory

ADD NEW MATERIAL

Material:

Measurements:

Design/Pattern:

Usage Note:

Activate Windows
Go to Settings to activate Windows.

Figure 7.16 Pending orders UI

ARTICRAFT | All Materials | Add Materials | Pending Orders | Complete Order | Generate Label | Print Label | Reorder | Inventory

PENDING ORDERS

Orders | SORT BY:

Name of orders	Date	Status		
Rajon	August 26, 2023	non-customized	<input type="button" value="Complete Order"/>	<input type="button" value="Delete"/>
Shanon	July 26, 2023	customized	<input type="button" value="Complete Order"/>	<input type="button" value="Delete"/>
Vinuki	July 26, 2023	customized	<input type="button" value="Complete Order"/>	<input type="button" value="Delete"/>
Quana Mearuru	August 26, 2023	non-customized	<input type="button" value="Complete Order"/>	<input type="button" value="Delete"/>
Iretha modushari	August 21, 2023	non-customized	<input type="button" value="Complete Order"/>	<input type="button" value="Delete"/>
Rajon	August 28, 2023	non-customized	<input type="button" value="Complete Order"/>	<input type="button" value="Delete"/>
Agao	August 26, 2023	non-customized	<input type="button" value="Complete Order"/>	<input type="button" value="Delete"/>

Figure 7.17 Order fulfillment process UI

Print Label | Reorder | Inventory

Order Fulfillment Process

Order details

ORDER ID:

WEIGHT:

TOTAL PRICE:

DATE:

STATES: ☐ Customized Order ☐ Non-Customized Order

PRODUCT ID	PRODUCT NAME	QUANTITY	PRICE

PACKAGING TYPE: ☐ Customized Packaging ☐ Non-Customized Packaging

WRAPPING PAPER:

RISSON COLOR:

CUSTOMER'S OWN WEIGHS:

STATES: ☐ Completed ☐ Pending

Person who checked the quality of the Packaging ?

QUALITY CHECKER NAME:

QUALITY CHECKER ID:

DATE:

Figure 7.18 Label generate process UI

ARTICRAFT [All Materials](#) [Add Materials](#) [Pending Orders](#) [Complete Order](#) [Generate Label](#) [Print Label](#) [Reward](#) [Inventory](#)

LABEL GENERATE PROCESS

Order Details

ORDER ID :

WEIGHT :

TOTAL PRICE :

DATE :

Customer Details

CUSTOMER ID :

NAME :

Address :

ADDRESS :

CONTACT NUMBER :

Safety Warning Generator

☐

Company Details

E-mail :

No. 456/A,
Hokandara,
Morobe

ADDRESS :

CONTACT NUMBER :

Figure 7.19 Download Label and lottery QR code

My Orders [Complete Order](#) [Generate Label](#) [Print Label](#) [Reward](#) [Inventory](#)


Download Label

Download Label

you have access to download customized printing labels for various purposes. Efficiently manage your printing needs by selecting the appropriate label template, inputting relevant data, and clicking "Download Label". Simplify your administrative tasks and streamline your operations with our user-friendly label download system.

Download Lottery QR Code

Simply click the "Download" button below, and your personalized lottery QR code will be saved to your device. This QR code is your virtual lottery ticket, so keep it safe!



Check for Winners: Stay tuned for the draw date. After the lottery draw, use your QR code to check if you're one of our lucky winners. Fingers crossed!

Important Note: Please keep your QR code confidential until the draw is complete to avoid any duplicates.

Thank you for being a part of our lottery event. Good Luck, and may the odds be in your favor!


ARTICRAFTS

CUSTOMER DETAILS

NAME :

ADDRESS :

CONTACT NO :



ORDER DETAILS

ORDER ID :

DATE :

PRICE :

No. 456/A, Hokandara Road, Morobe
Artcraft@gmail.com
09 456 1245

Figure 7.20 How the reward UI looks without uploading files

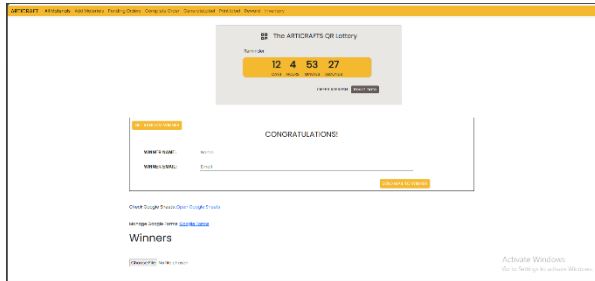


Figure 7.21 Timer and the select random winner UI

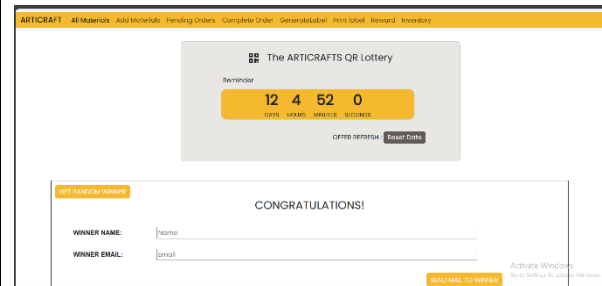


Figure 7.22 Upload excel competitors list UI

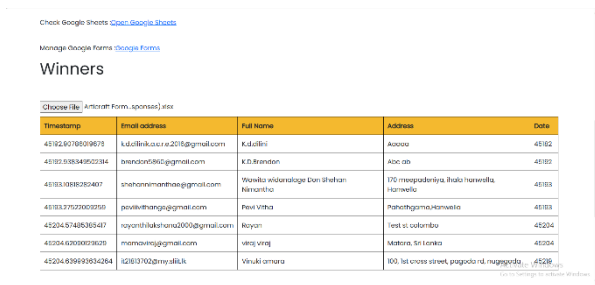


Figure 7.23 Monthly Store competitors' data in database

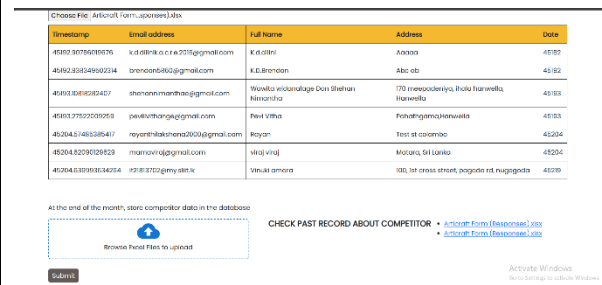


Figure 7.24 Material inventory Management main UI 1

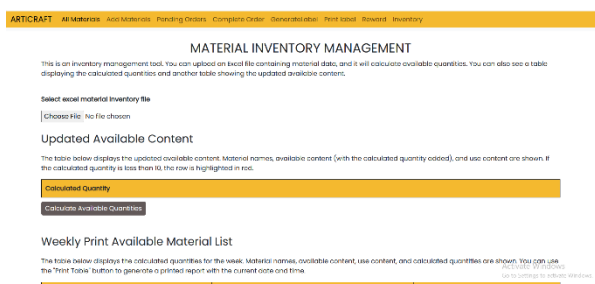


Figure 7.25 Material inventory Management main UI 2

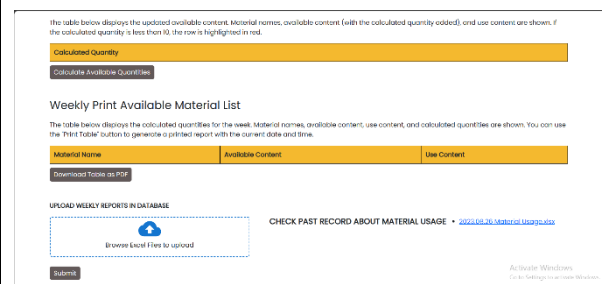


Figure 7.26 Upload excel material Inventory file

ARTICRAFT All Materials Add Materials Pending Orders Complete Order Generate Label Print Label Renewal Inventory

MATERIAL INVENTORY MANAGEMENT

This is an inventory management tool. You can upload an Excel file containing material data, and it will calculate available quantities. You can also see a table displaying the calculated quantities and another table showing the updated available content.

Select excel material inventory file

Choose File 2023.08.26 M...rial Usage.xlsx

Updated Available Content

The table below displays the updated available content, Material names, available content (with the calculated quantity added), and use content are shown. If the calculated quantity is less than 10, the row is highlighted in red.

Material Name	Available Quantity	Use Quantity	Calculated Quantity
Cardboard boxes	50	30	20
Corrugated boxes	50	20	30
Glass Containers	50	8	44
Shrink Wrap	50	21	29
Cling Film	50	42	8

Activate Windows
Go to Settings to activate Windows.

Figure 7.27 Weekly print available material list UI

Material Name	Available Quantity	Use Quantity	Calculated Quantity
Cling Film	50	42	8
Woven Sack	50	32	18
Paper Bags	50	40	10
Bubble Wrap	50	40	10
Tapes	50	14	36
Jute Bags	50	6	44

Calculate Available Quantities

Weekly Print Available Material List

The table below displays the calculated quantities for the week. Material names, available content, use content, and calculated quantities are shown. You can use the 'Print Table' button to generate a printed report with the current date and time.

Material Name	Available Content	Use Content
Cardboard boxes	20	
Corrugated boxes	30	
Glass Containers	44	

Activate Windows
Go to Settings to activate Windows.

Figure 7.28 Upload weekly material usage reports in database UI

Material Name	Available Quantity	Use Quantity	Calculated Quantity
Cling Film	50	42	8
Woven Sack	50	32	18
Paper Bags	50	40	10
Bubble Wrap	50	40	10
Tapes	50	14	36
Jute Bags	50	6	44

Download Table as PDF

UPLOAD WEEKLY REPORTS IN DATABASE

Browse Excel Files to upload

Submit

CHECK PAST RECORD ABOUT MATERIAL USAGE • 2023.08.26 Material Usage.xlsx

Activate Windows
Go to Settings to activate Windows.

Figure 7.29 How the inventory management UI looks without uploading files

ARTICRAFT All Materials Add Materials Pending Orders Complete Order Generate Label Print Label Renewal Inventory

MATERIAL INVENTORY MANAGEMENT

This is an inventory management tool. You can upload an Excel file containing material data, and it will calculate available quantities. You can also see a table displaying the calculated quantities and another table showing the updated available content.

Select excel material inventory file

Choose File No file chosen

Updated Available Content

The table below displays the updated available content, Material names, available content (with the calculated quantity added), and use content are shown. If the calculated quantity is less than 10, the row is highlighted in red.

Calculated Quantity

Calculate Available Quantities

Weekly Print Available Material List

The table below displays the calculated quantities for the week. Material names, available content, use content, and calculated quantities are shown. You can use the 'Print Table' button to generate a printed report with the current date and time.

Material Name	Available Content	Use Content
Cardboard boxes	20	
Corrugated boxes	30	
Glass Containers	44	

Download Table as PDF

UPLOAD WEEKLY REPORTS IN DATABASE

Browse Excel Files to upload

Submit

CHECK PAST RECORD ABOUT MATERIAL USAGE • 2023.08.26 Material Usage.xlsx

Activate Windows
Go to Settings to activate Windows.

7.4 IT21821486-A.S.G. Punchihewa

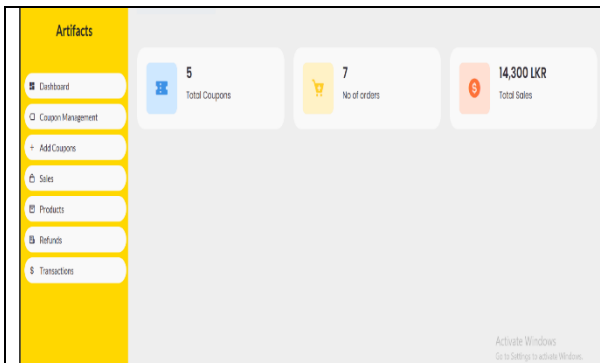


Figure 7.34-Dashboard of Finance manager

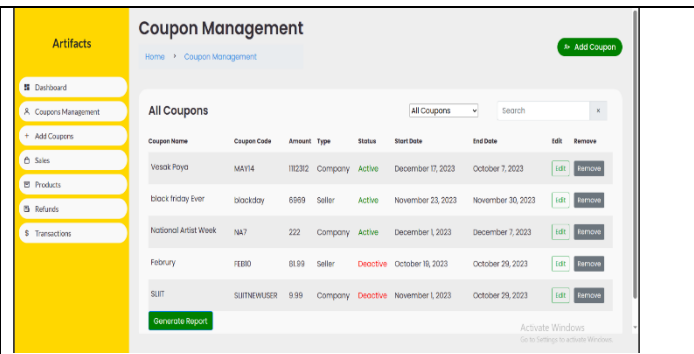


Figure 7.35 - Coupon List with search and Filter Functionality

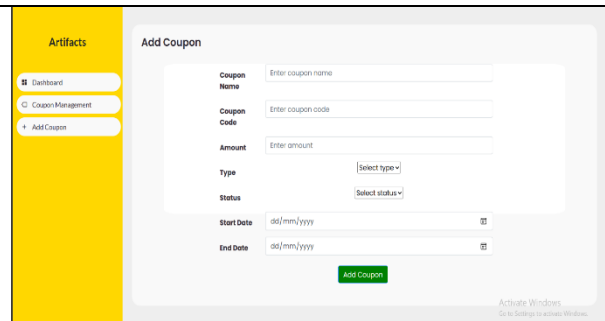


Figure 7.36- Coupon adding page

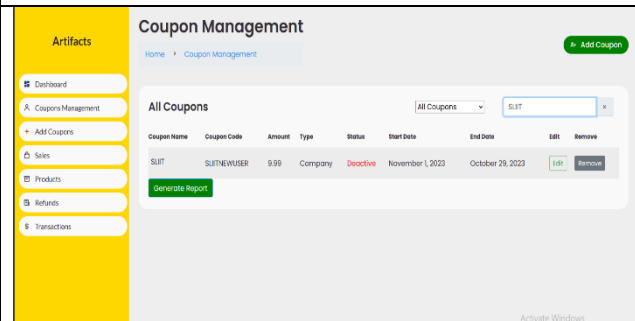


Figure 7.37- Refund List page with Filter according to status

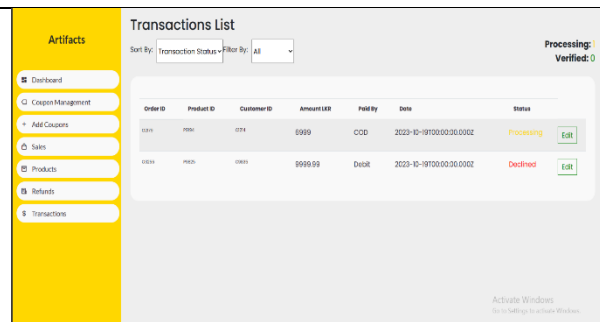


Figure 7.38- Transaction List with Filter functionality according to status

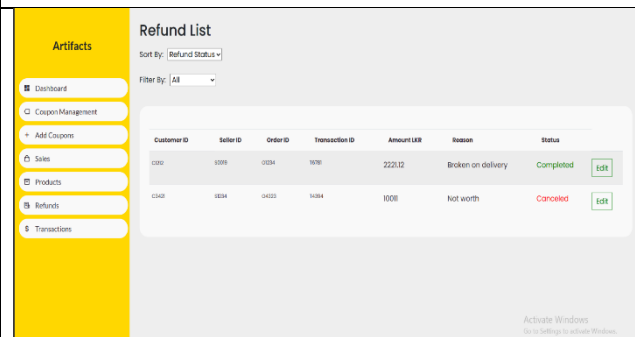


Figure 7.39- Search Functionality

7.5 IT21818202-Navodya M.M.C

Figure 7.14 Product detail UI.

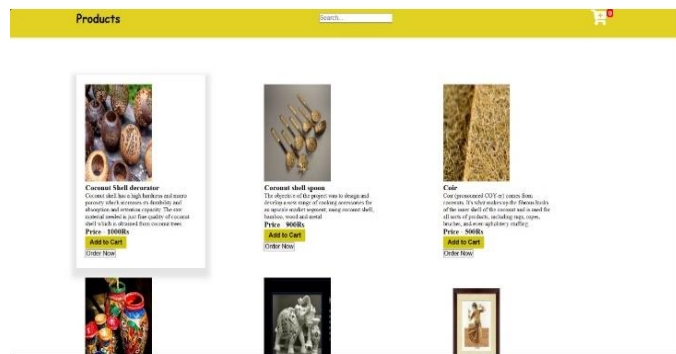


Figure 7.15 Show message “Item is already added to your cart”

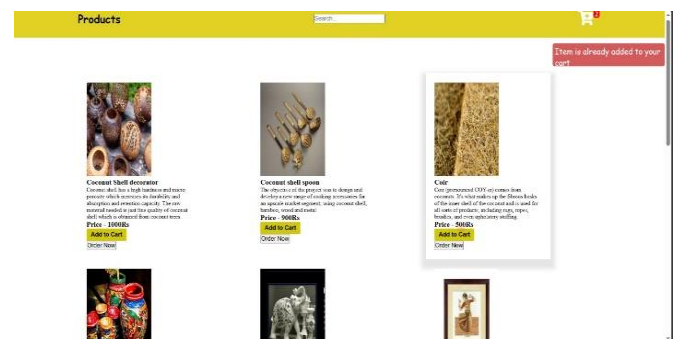


Figure 7.16 Search.

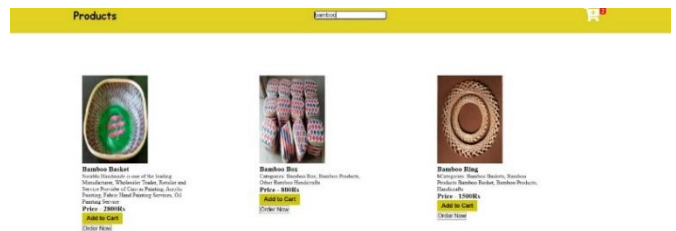
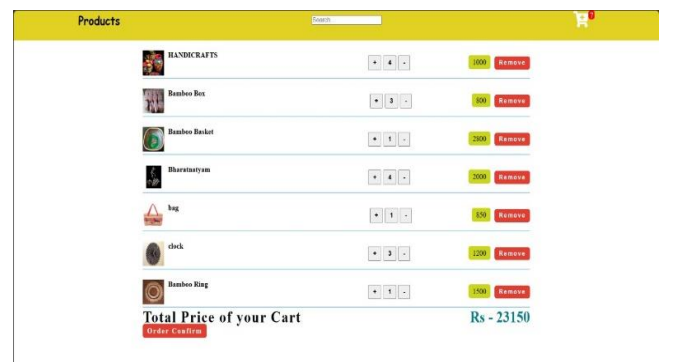


Figure 7.17 Cart UI.



7.6 IT21823220- Vithanage H.P

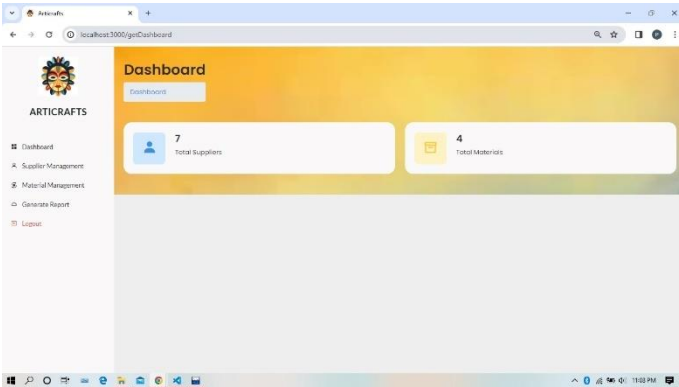


Figure 7.20

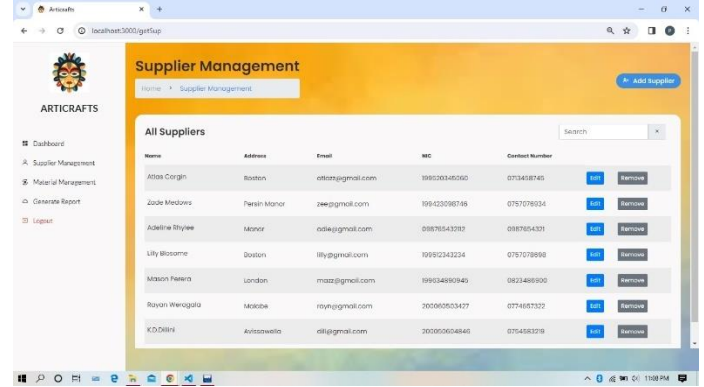


Figure 7.19

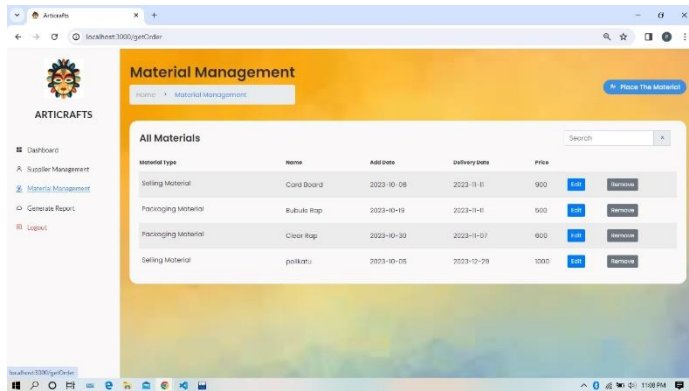


Figure 7.18

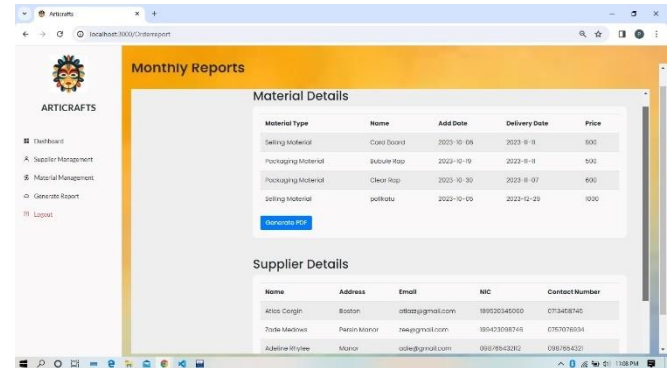


Figure 7.21

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