TRIBHUVAN UNIVERSITY

INSTITUTE OF SCIENCE AND TECHNOLOGY

HIMALAYA COLLEGE OF ENGINEERING

Sixth Semester Project Report

On

"E-COMMERCE WEBSITE DEVELOPMENT FOR ART STORE"

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ABSTRACT

Traditional art purchasing methods often suffer from geographical limitations, limited selection, and cumbersome processes. The goal of this project is to enhance the art buying experience by creating an e-commerce website called “KOPILA”. This project aims to offer a modern, secure, and easy-to-navigate online marketplace where artists can showcase their work and buyers can explore and purchase art effortlessly, fostering a more dynamic and accessible art community.

Keywords: E-Commerce Website, Online Marketplace.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

In today's digital age, technology has continually advanced, transforming every aspect of our lives and making daily tasks more convenient. The evolution of technology has particularly revolutionized the commercial sector, allowing consumers to access information and purchase products from the comfort of their homes with just a few clicks. As online shopping becomes increasingly prevalent, the demand for user-friendly and efficient e-commerce platforms has surged. E-commerce (electronic commerce) is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet. [1]

The online art shop KOPILA aims to transform the way people buy and sell art by providing a convenient and accessible e-commerce platform. Traditionally, purchasing art has involved physical visits to galleries, limited selections, and tedious processes. This project seeks to revolutionize the art buying experience by introducing a user-friendly and efficient online marketplace.

In conclusion, KOPILA offers a dynamic digital marketplace accessible to art enthusiasts nationwide.

1.2 Objectives

1. To develop a project that automates and simplifies the process of buying and selling of arts online.
2. To provide 24/7 access, allowing users to browse and purchase art anytime, anywhere.
3. To eliminate the constraints of physical gallery visits.

CHAPTER 2: INTERNET AND E-COMMERCE

The internet is a global network of interconnected computers that enables users to share information and communicate with one another. It has transformed how we access information, communicate, and conduct business. The internet supports various services, including email, social media, and, notably, e-commerce.

E-commerce, or electronic commerce, refers to the buying and selling of goods and services over the internet. It encompasses a wide range of activities, including online shopping, electronic payments, online auctions, and internet banking. E-commerce platforms enable businesses to reach a global audience, operate 24/7, and provide customers with a convenient and efficient shopping experience.

Relationship between Internet and E-commerce

The relationship between the internet and e-commerce is symbiotic. The internet provides the necessary infrastructure for e-commerce to exist and thrive. It offers the connectivity, communication channels, and technological frameworks required for online transactions. Without the internet, e-commerce would not be possible.

E-commerce, in turn, drives internet usage and innovation. The growth of e-commerce has spurred the development of secure payment systems, improved data encryption methods, and advanced web technologies to enhance user experience. As more businesses and consumers engage in e-commerce, the demand for faster, more reliable internet connections and sophisticated online tools continues to grow, further advancing the capabilities of the internet.

This interconnected relationship highlights the significant impact the internet has on modern commerce and the continuous evolution of e-commerce driven by advancements in internet technology.

CHAPTER 3: WEB TOOLS AND TECHNIQUES

3.1 Tools Used (CASE tools, Languages, Database platforms)

Computer-aided software engineering tools, or CASE tools, are software programs made to help in the creation, maintenance, and management of software systems. With the many features they provide, including project management, testing, modeling, and design, developers and businesses may increase output, effectiveness, and quality.

There is an abundance of CASE tools available that address many phases of the Software Development Life Cycle, including Analysis, Design, Project management, Database Management, and Documentation. By using CASE tools, projects can be finished more quickly and effectively while also identifying problems before moving on to the next stages of software development.

3.2 Diagram tools

These tools are used to visually represent data, system components, the flow of control between different software components, and the overall structure of the system. Draw.io is one example of a tool that does this; it can be used to create DFD at various levels, block diagrams, and use case diagrams.

3.3 Web Development Tools

Web development tools are a comprehensive set of technologies crucial for crafting dynamic and engaging websites. At the core of this toolkit lies HTML, providing the structure for content presentation. CSS steps in to add style and layout, enhancing the visual appeal and user experience. PHP handles server-side scripting, enabling dynamic content generation and interaction with databases. MySQL comes into play for efficient database management, ensuring seamless storage and retrieval of website data. These resources work together to provide developers with the basis they need to build reliable and useful web apps that let them design aesthetically pleasing, responsive, and data-driven websites. Their smooth integration makes it easier to create websites full of features with improved functionality and user experience.

3.4 XAMPP

XAMPP stands for cross-platform (X), Apache (A), MySQL (M), PHP (P), and Perl (P). Created by Apache Friends, XAMPP provides a local web server for developers to perform test runs. It is a cross-platform tool, compatible with macOS, Windows, and Linux.

XAMPP comprises four main components:

1. **Apache:** The most widely used web server application, Apache helps deliver web content to computers. It handles HTTP requests and serves web pages to users' browsers. Apache's popularity stems from its reliability, flexibility, and ease of use, making it the backbone of over half of the world's websites.
2. **MySQL:** A robust database management system, MySQL is essential for storing, retrieving, and managing data for websites. It supports operations such as adding, removing, and modifying data, ensuring the smooth operation of dynamic websites by efficiently handling large volumes of data.
3. **PHP:** A server-side scripting language, PHP is used to develop both static and dynamic websites and applications. It processes code on the server to generate HTML, which is then sent to the client’s browser.
4. **Perl:** A dynamic programming language, Perl is often used in network programming, system administration, and text processing. Its versatility makes it useful for various web development tasks.

These components are packaged together in XAMPP, offering a simple, fully configured control panel for managing and running local web servers, facilitating efficient web development and testing.

CHAPTER 4: CONTENT MANAGEMENT SYSTEM

A content management system or CMS is a software that allows creating, editing, organizing, and publishing content. WordPress is a Content Management System that allows to create and publish content on the internet.

4.1 WordPress

WordPress is a popular open-source content management system (CMS) used to create and manage websites and blogs. Launched in 2003, it has become the world's most widely used CMS, powering over 40% of all websites. WordPress offers a user-friendly interface, a vast library of themes and plugins, and flexibility to build everything from personal blogs to complex e-commerce sites. It supports various media types, SEO optimization, and customizable designs, making it a versatile choice for users of all skill levels.

Even as a beginner, WordPress allows anyone to publish and build content in the simplest manner with minimal cost, ease of use and flexibility. According to usage statistics of CMS, it shows that about 36% of all the websites on the internet is powered by WordPress.

CHAPTER 5: WEBSITE DEVELOPMENT PROCESS

Web development is one of the most fundamental requirements for almost all businesses and companies today. Web development is a comprehensive process involving different parts and modules of development. It is critical to have the different functions working together in sync towards a common objective and have a streamlined web development workflow process for the best results. [2] The website development process typically involves several stages, each crucial to creating a functional and effective website. Here's an overview of the key steps:

a) **Analysis:**

The analysis phase involves understanding website goals and client needs through user personas, research, competitor analysis, technical feasibility, and developing site maps and wireframes. This ensures a clear strategy to solve the website's intended problems.

b) Design:

The design stage focuses on creating a responsive, intuitive, and easy-to-navigate UI/UX. Web designers use the latest trends, frameworks, and technologies to craft an optimized visual layout, including structure, navigation, and multimedia components, based on client requirements.

c) Development:

During the development phase, the website is coded using various programming languages and tools. This involves turning designs into a functional site, setting up server-side functionality, deploying plugins, and integrating security features. The site is then tested to ensure it works as intended.

d) Testing and Review:

Testing involves verifying functionality and performance through unit, integration, and system tests. Functional testing checks if the website performs its tasks, while non-functional testing assesses performance, security, and usability. This phase ensures the website is error-free and ready for launch.

e) Deployment:

The deployment phase transfers the site from a development environment to a live production server. This includes configuring the environment, compressing files, setting up caching and load balancing, and ensuring all contingencies are addressed. Once live, the site is monitored and maintained.

f) Maintenance:

Maintenance ensures the website's ongoing performance and updates. This involves regular software updates, data backups, traffic monitoring, and security checks to keep the site relevant, secure, and optimized for users. Regular maintenance is essential for long-term website success.

CHAPTER 6: OUR WEBSIITE PROJECT

6.1 User Requirement

KOPILA is an intuitive e-commerce platform designed to provide a seamless shopping experience. From the moment users land on the site, they are greeted with a user-friendly interface that facilitates easy navigation and efficient product discovery. The robust search functionality enables customers to quickly find specific items of interest, while each product page offers detailed descriptions, high-resolution images, and real-time availability updates. Customer reviews and ratings are prominently displayed to assist shoppers in making informed purchasing decisions, enhancing their confidence in their selections.

To ensure secure transactions, KOPILA integrates trusted payment gateways and employs SSL encryption throughout the checkout process, safeguarding sensitive customer information. Creating a user account on KOPILA grants customers access to personalized features such as order tracking, viewing purchase history, and managing wishlists. This personalized approach enhances convenience and allows for a tailored shopping experience that meets individual preferences.

Customer support is readily accessible via multiple channels, including email, live chat, and phone support, ensuring prompt assistance for any inquiries or issues. Additionally, comprehensive FAQs and help sections provide quick answers to common questions, further enhancing the customer support experience. KOPILA also leverages strategic marketing tools such as promotional discounts and newsletters to engage customers and provide them with updates on new products and special offers.

The platform is optimized for performance, delivering fast loading times and scalable infrastructure to handle fluctuations in traffic and accommodate business growth. Legal compliance with terms and data privacy regulations ensures that customer data is

handled securely and in accordance with industry standards, fostering trust and confidence among users. Overall, KOPILA is dedicated to creating a reliable and enjoyable online shopping environment that meets the diverse needs of its customers.

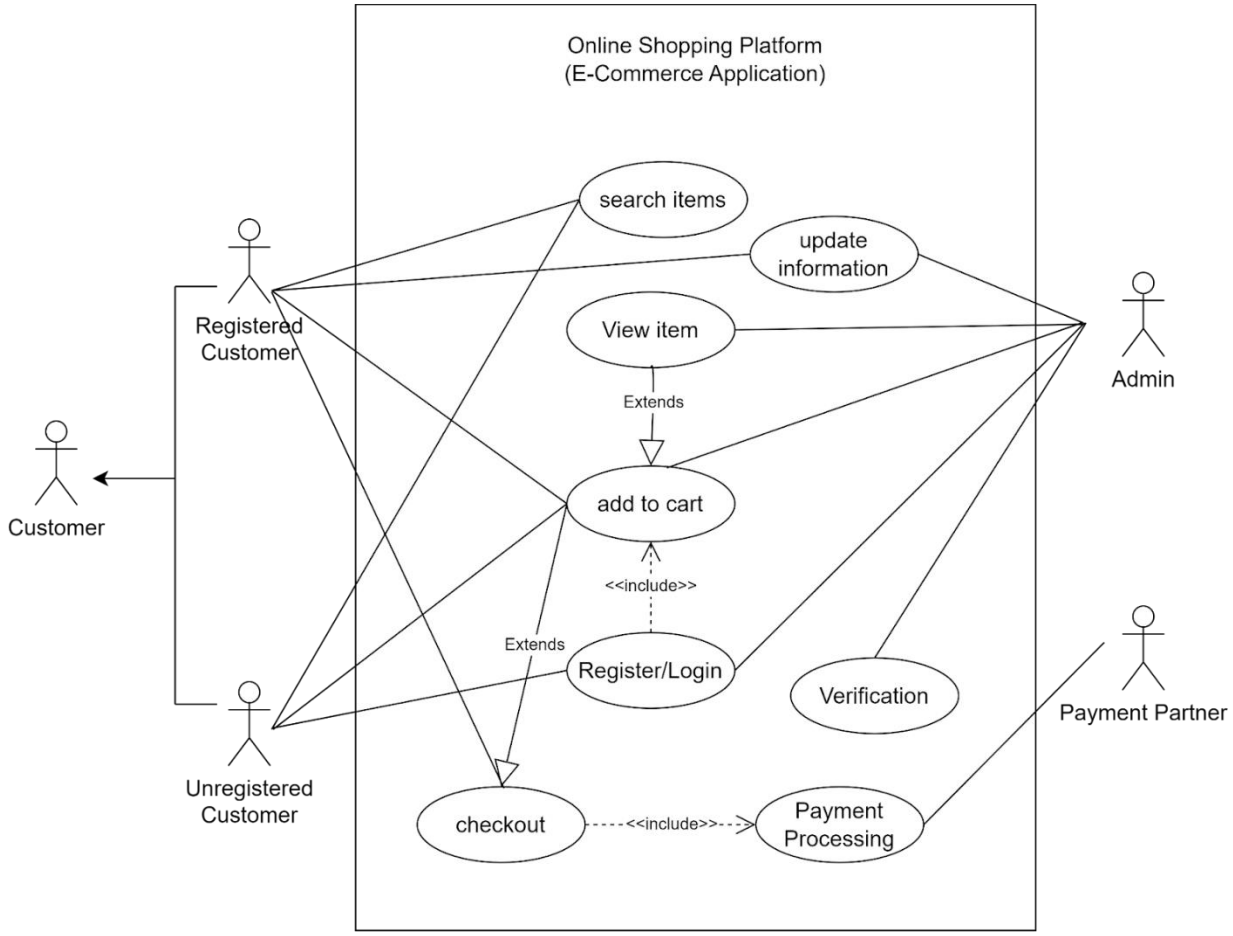


Figure 1 : Use Case Diagram of KOPILA

6.2. Design

6.2.1 Process Modeling

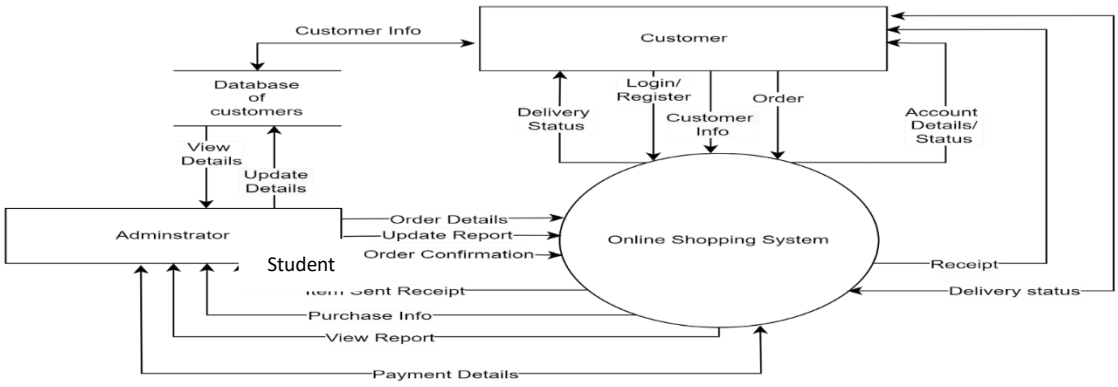


Figure 2 : DFD level 0 of KOPILA

Fig 2 displays the DFD level 0 diagram of the proposed system. In this case, the main components are the Customer and Administrator, and Online Shopping System where the user feeds the data into the system and the system gives out information. The admin can monitor the process while the payment partner oversees the transactions.

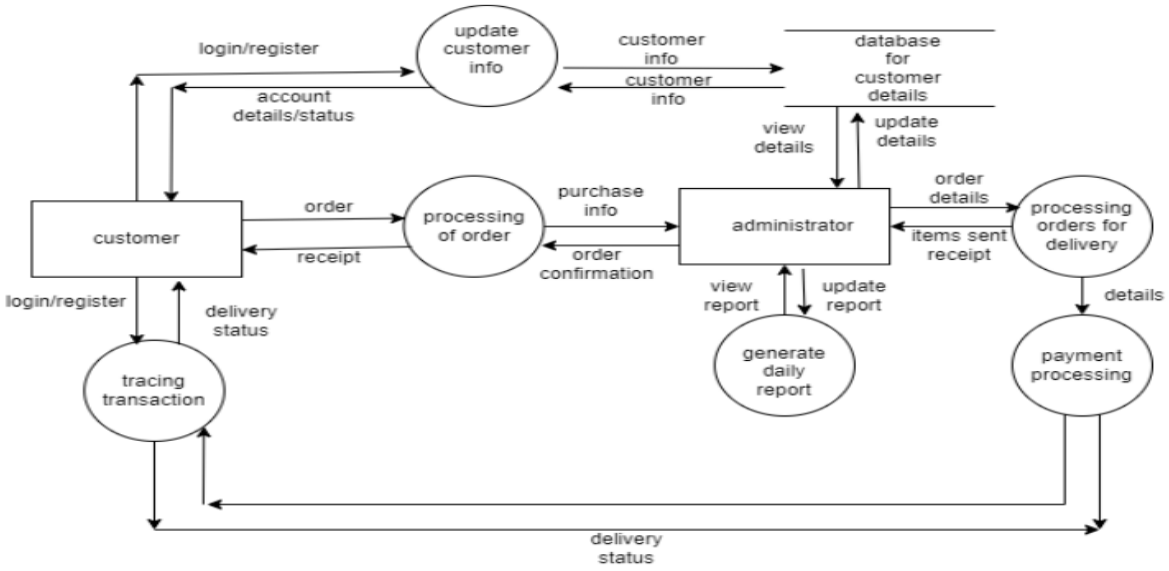


Figure 3: DFD level 1 of KOPILA

Fig 3 displays the DFD level 1 diagram of the proposed system. In this system, we have divided the system into various processes which describes the overall working of the system briefly. It clearly illustrates the relation between each process and entity.

6.2.2 Data Modeling

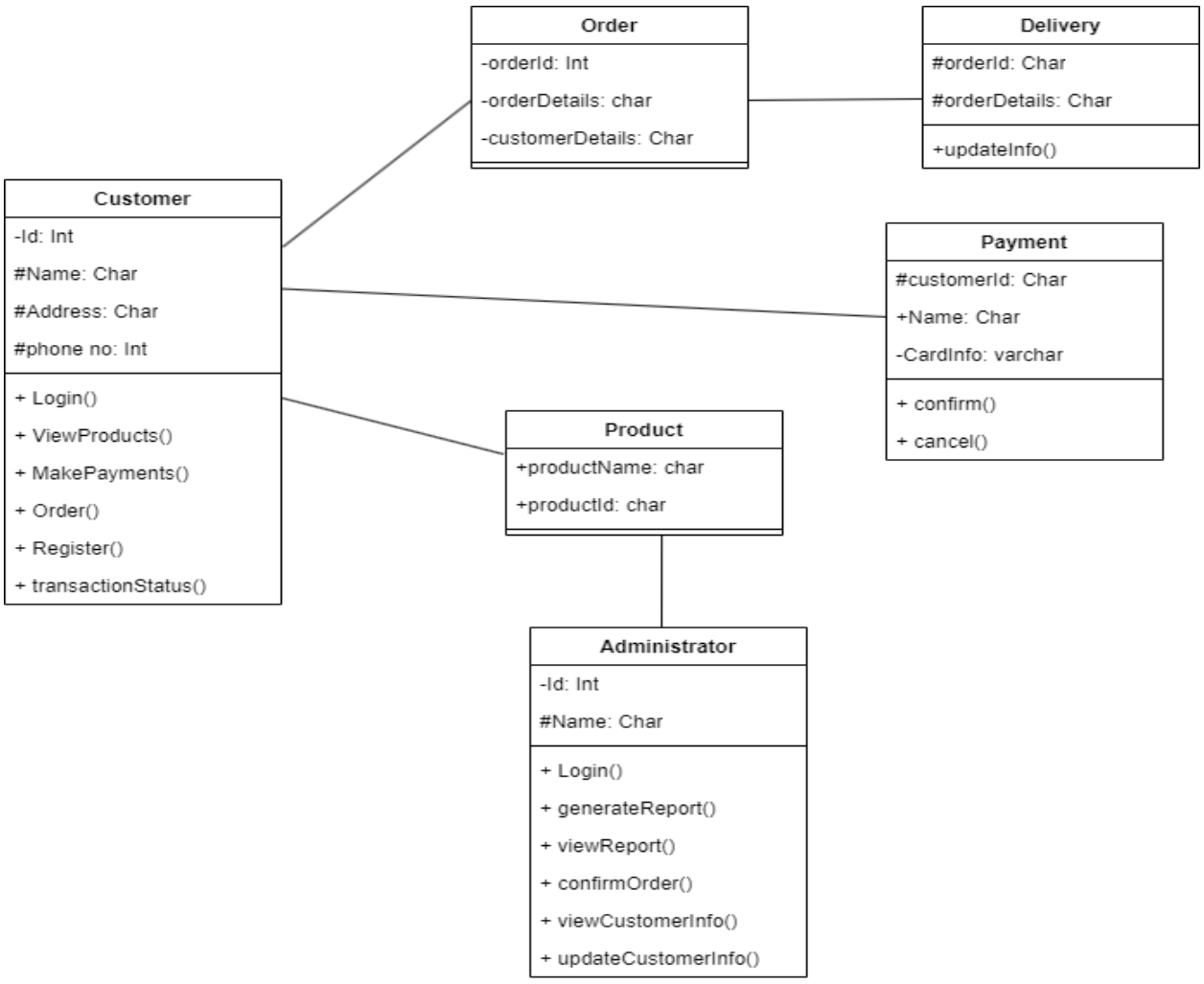


Figure 4: Class Diagram of KOPILA

The class diagram for KOPILA outlines the structure and relationships of key components within the system responsible for managing customer requests. This diagram serves as a blueprint for developers to implement the functionality required to facilitate customer's requests efficiently and securely.

6.3 Development

Accessing WordPress Admin Dashboard

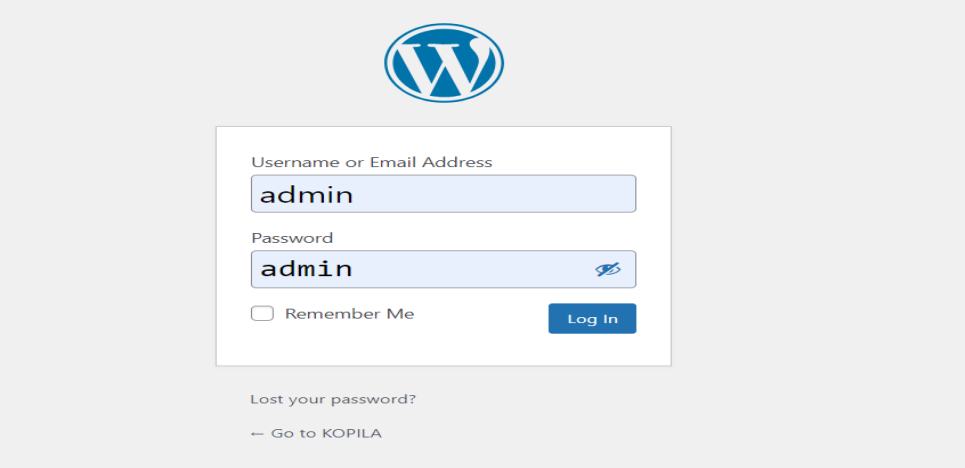


Figure 5: WordPress Admin Login Credential

Creating Products and Adding Necessary Descriptions

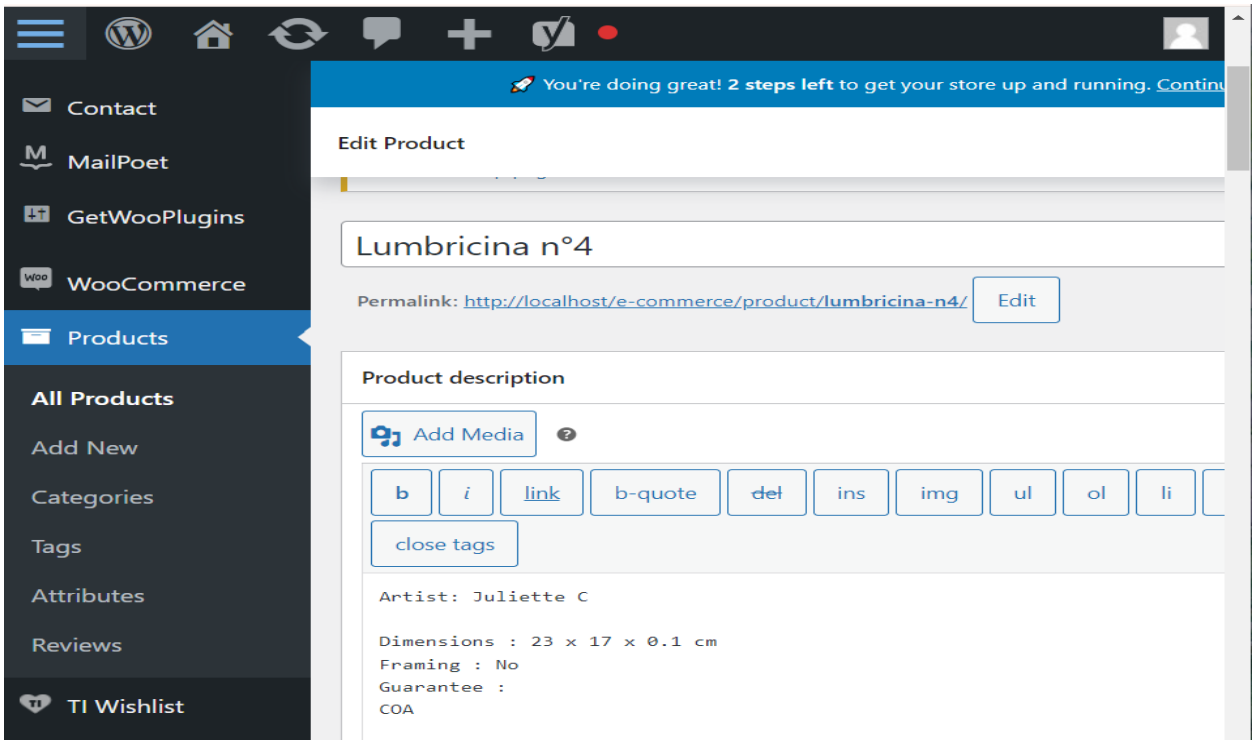


Figure 6: Add Products

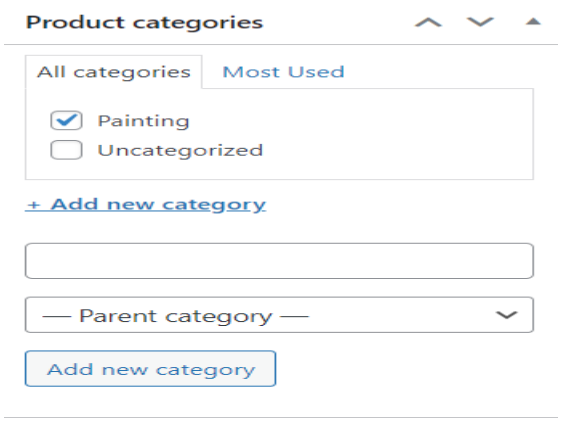


Figure 7: Product Categories

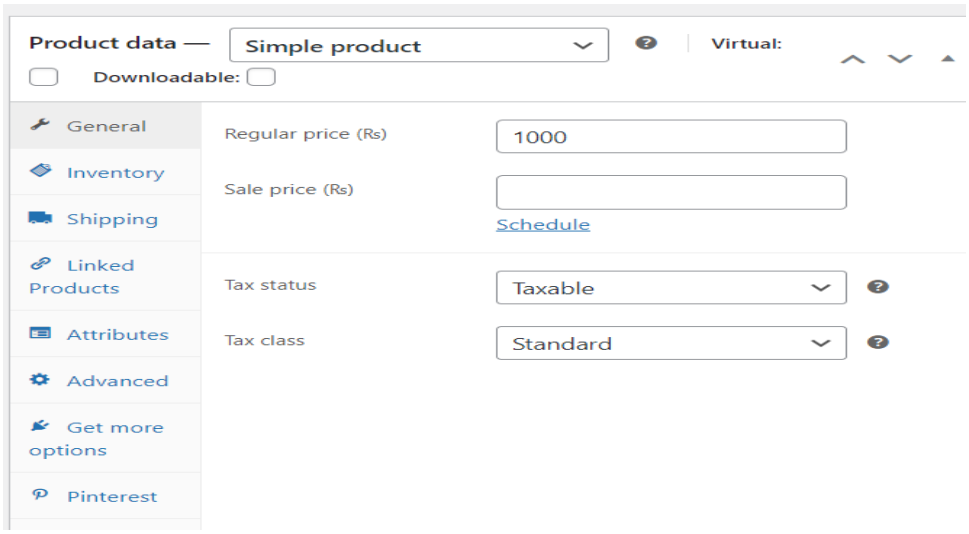


Figure 8: Product Date - General Tab

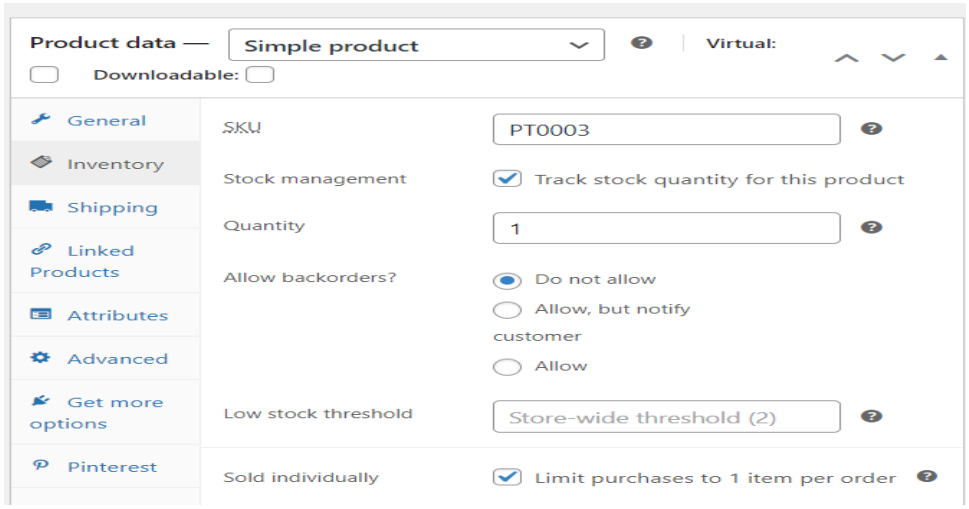


Figure 9: Product Data - Inventory Tab

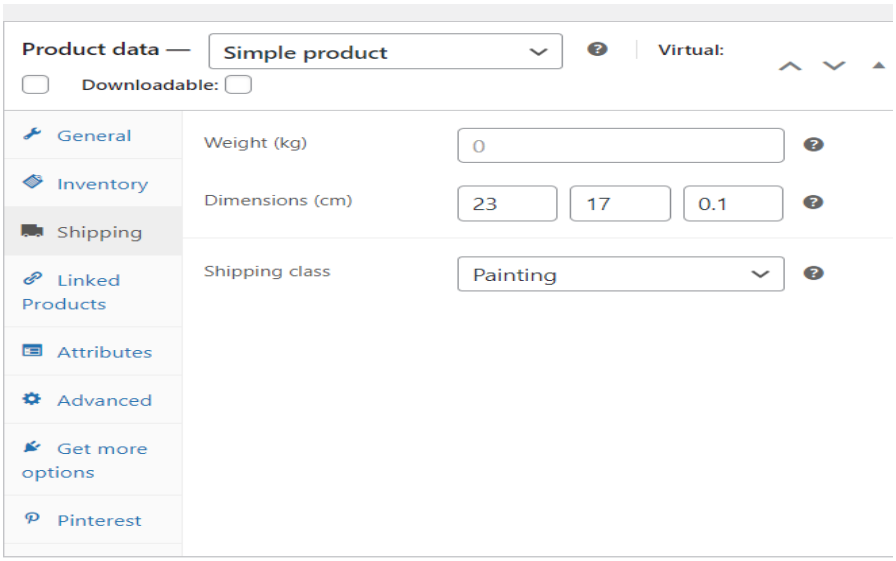


Figure 10: Product Data - Shipping Tab

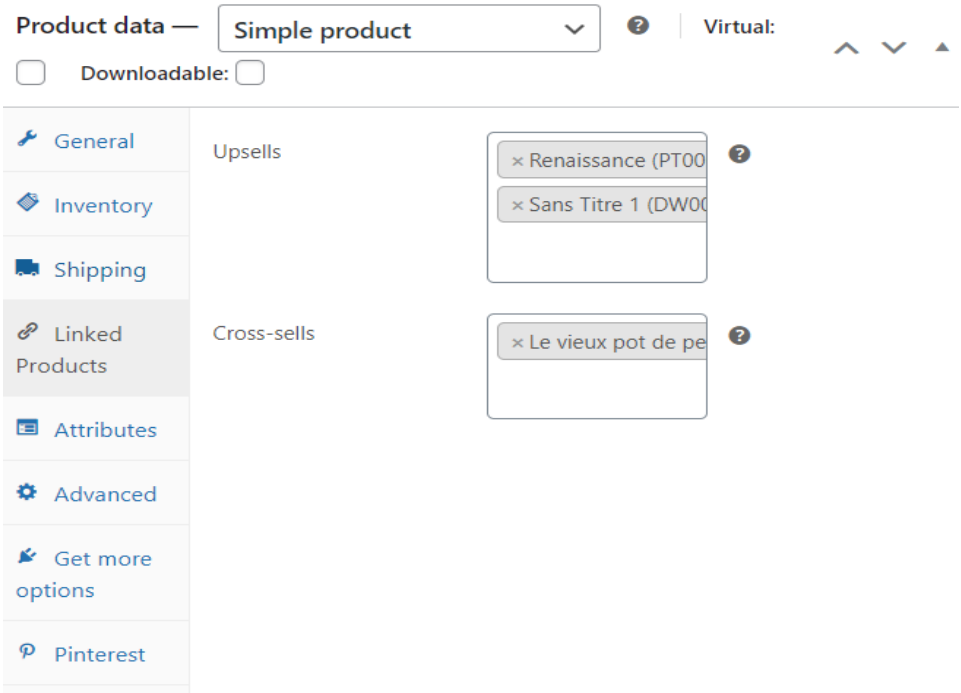


Figure 11: Product Data - Linked Products

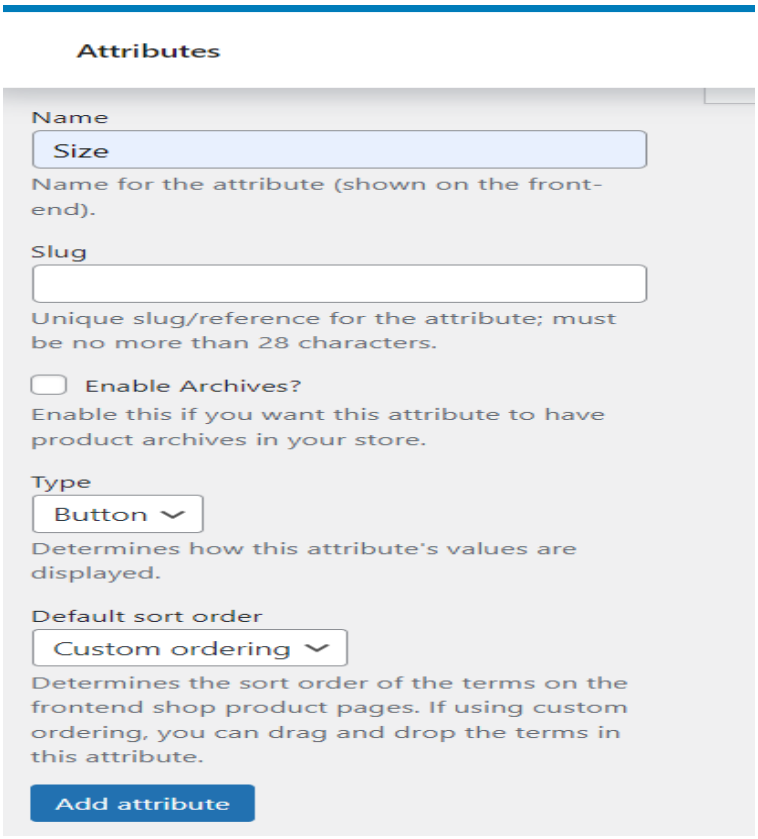


Figure 12: Adding Product Attributes

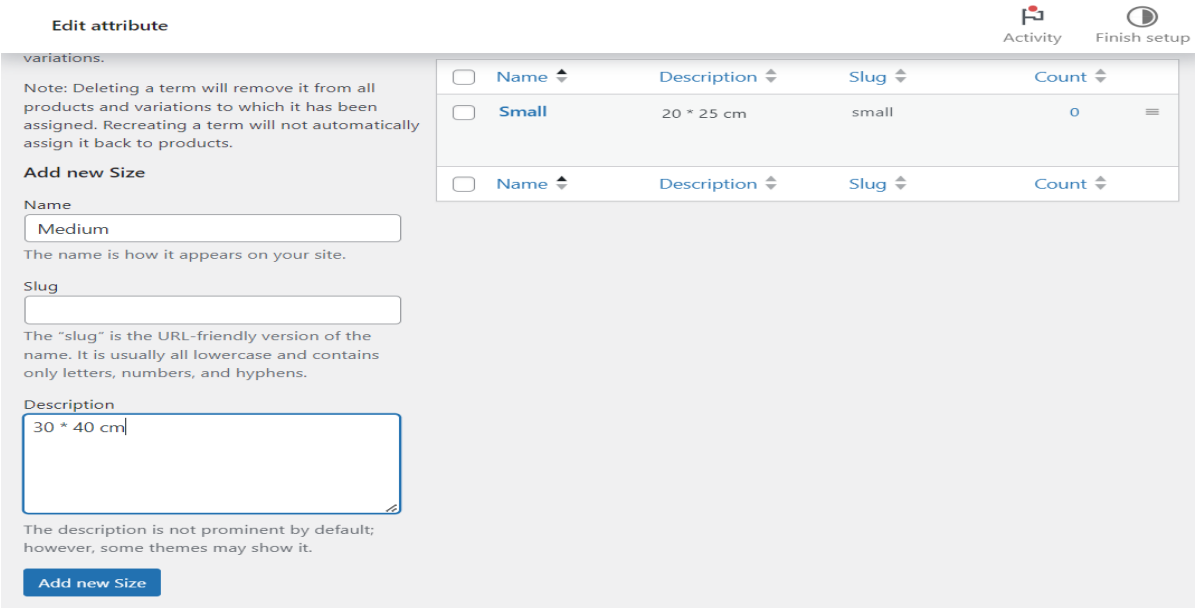


Figure 13: Edit Attributes

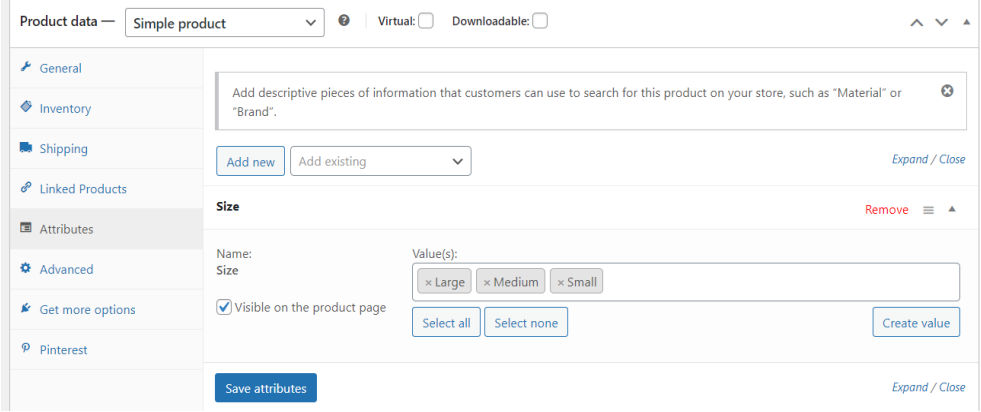


Figure 14: Product Data – Attribute Tab

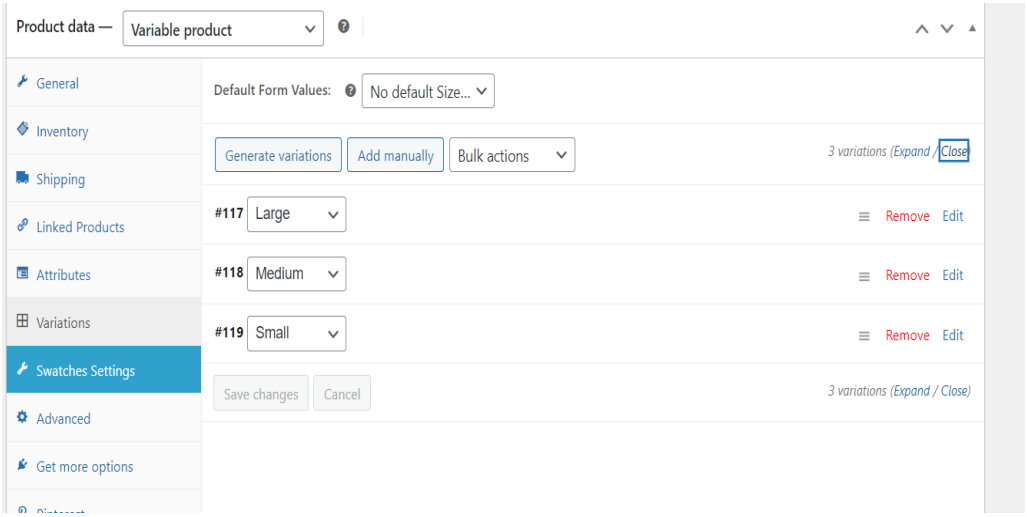


Figure 15: Product Data - Variations Tab

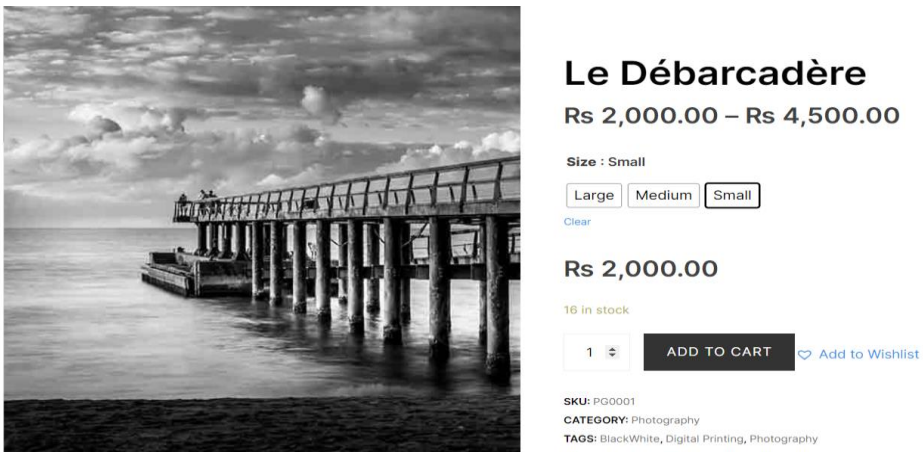


Figure 16: Price Variation in Product

Setting up Shipping Zones and Shipping Rate Across Various Categories

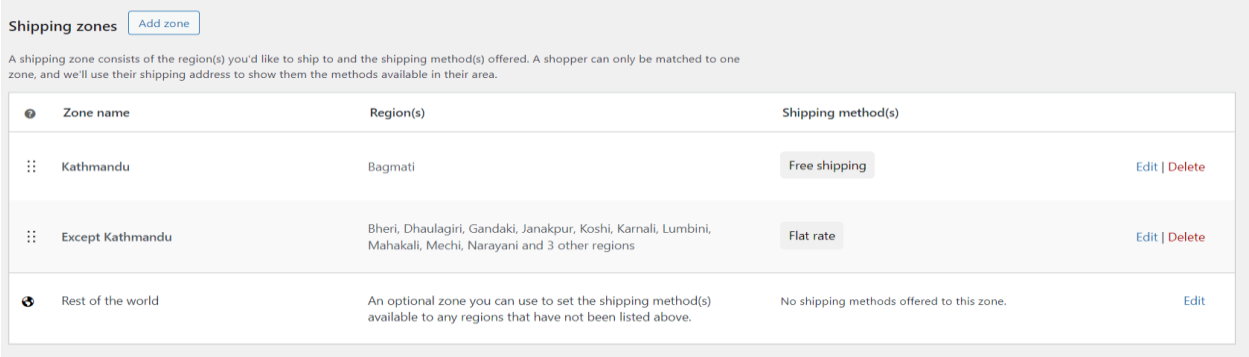


Figure 17: Shipping Zone

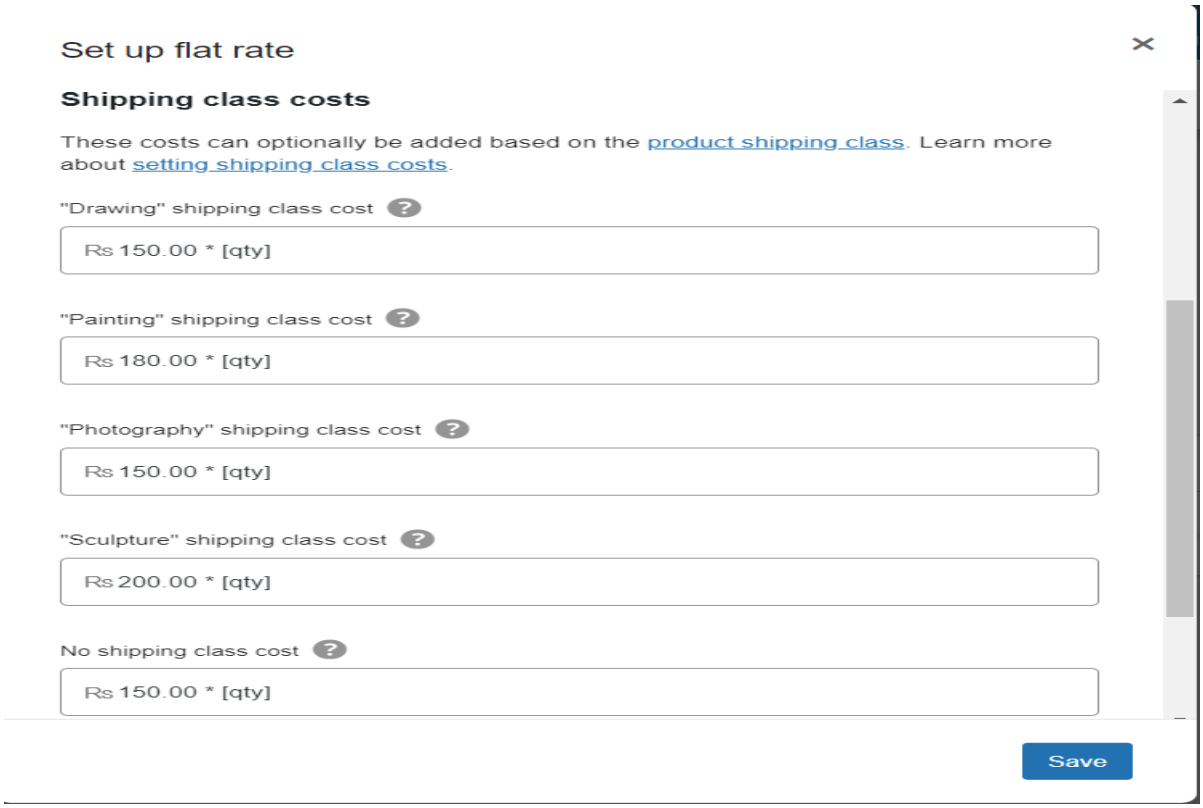


Figure 18: Setting Up Flat Shipping Rate for Various Categories

Hit the Publish Button

Once you double-check that all of the product details are correct, you can hit **Publish** to make your product live, just like you'd publish a blog post.

6.4 Integrating Payment Gateway

A payment gateway is a technology used by merchants to accept debit or credit card purchases from customers. It serves as an intermediary between the merchant's website and the financial institutions that process the transaction, ensuring secure and efficient payment processing.

Direct Bank Transfer: Direct bank transfer, also known as bank wire or bank payment, is a method of payment where customers transfer money directly from their bank account to the merchant's bank account. This method is often preferred for its simplicity and lower transaction fees.

Local Pickup: Local pickup allows customers to place an order online and then collect their purchase in person from a designated location, such as a store or a warehouse.

Cash on Delivery (COD): Cash on delivery is a payment method where customers pay for their purchases in cash at the time of delivery. This method is popular in regions where credit card usage is low or where customers prefer to pay in cash.

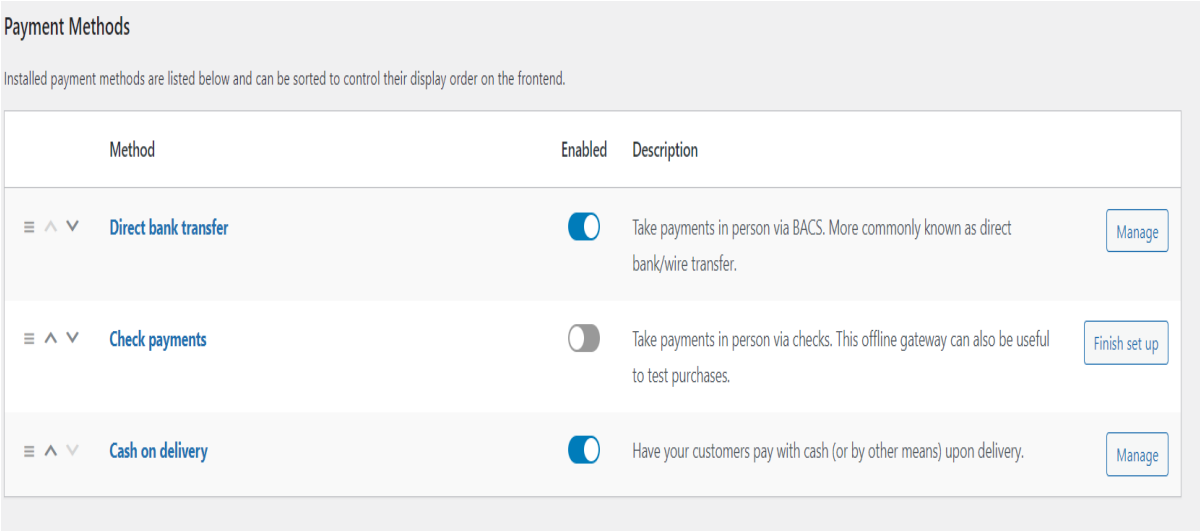


Figure 19: Payment Gateways

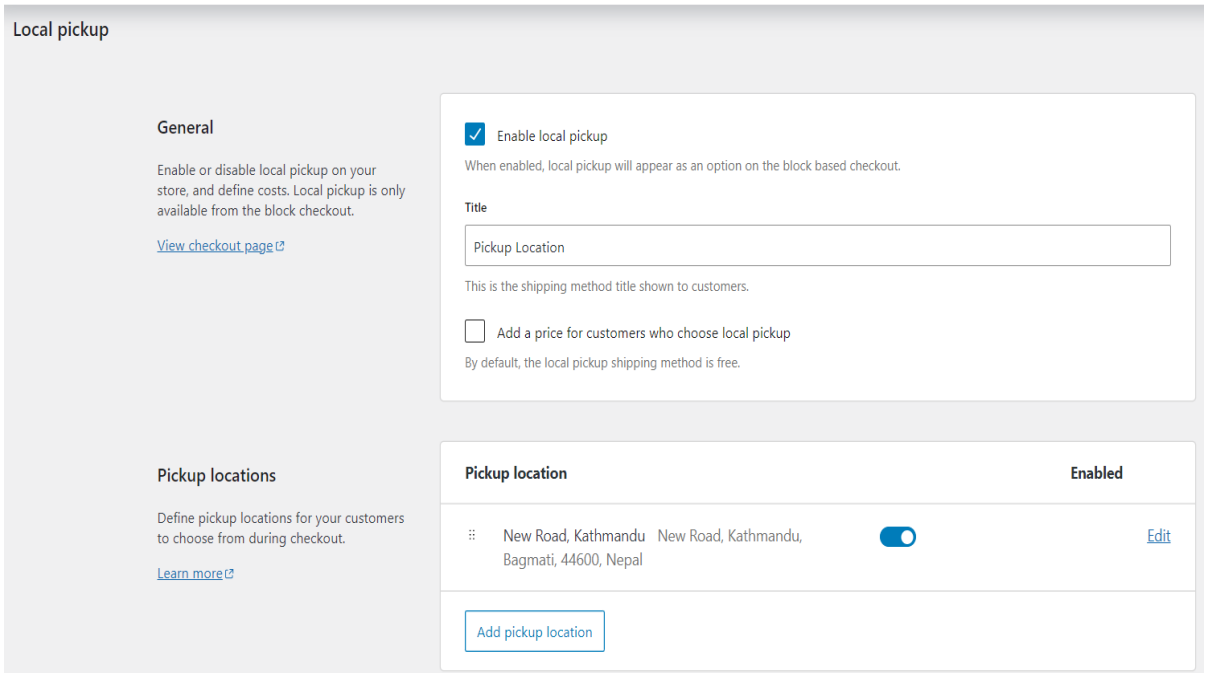


Figure 20: Local Pickup

6.5 Google Analytics

Google Analytics is a powerful web analytics service offered by Google that tracks and reports website traffic. It provides insights into user behavior, including how visitors find and interact with a site, which pages they visit, and how long they stay. Key features include:

1. Traffic Analysis: Tracks the number of visitors, their geographic locations, and the sources driving traffic to the site (e.g., search engines, social media, referrals).

2. User Behavior: Analyzes how users navigate the site, identifying popular pages, user flow, and drop-off points.

3.Audience Insights: Offers demographic information, interests, and behaviors of the audience.

4. Conversion Tracking: Monitors specific actions taken by users, such as purchases or sign-ups, helping to measure the effectiveness of marketing campaigns.

5.Real-Time Data: Provides live data on current visitors and their actions on the site.

Google Analytics is essential for optimizing website performance, enhancing user experience, and informing strategic decisions based on data-driven insights.

6.5.1 Google Analytics Interface

1. Dashboards & reports
2. Navigation – home, reporting, customization, admin
3. Time-period – here you will select the time period you want to analyze
4. Main view – where the reports and the data are presented.

6.6 Yoast SEO Meta Box

The Yoast SEO plugin is a powerful tool specifically designed to enhance the search engine optimization (SEO) capabilities of WooCommerce websites, catering to the unique needs of e-commerce platforms. It integrates seamlessly with WooCommerce, providing robust features that help optimize product pages, category listings, and other content for maximum visibility on search engine results pages (SERPs). One of its key functionalities is the ability to optimize meta titles and descriptions, allowing users to strategically incorporate relevant keywords and attract organic traffic effectively. This feature ensures that each page is not only attractive to search engines but also compelling and informative for potential customers, thereby improving overall SEO performance.

Additionally, Yoast SEO automates the generation of XML sitemaps tailored specifically for WooCommerce sites. These sitemaps serve as blueprints that help search engine crawlers navigate and index the website more efficiently, ensuring that all product pages and categories are properly recognized and ranked. By simplifying the indexing process, Yoast SEO enables WooCommerce users to maintain a structured and well-organized online store that is readily accessible to both users and search engines alike.

Another significant aspect of Yoast SEO is its readability analysis tool, which evaluates the clarity and ease of understanding of product descriptions and other textual content. This feature not only improves the user experience by presenting information in a clear and concise manner but also contributes to SEO efforts by ensuring that content meets readability standards that search engines value. By enhancing both technical SEO aspects and content quality, Yoast SEO empowers WooCommerce website owners to achieve higher search engine rankings, drive more organic traffic, and ultimately increase conversions and sales.

In essence, Yoast SEO is a comprehensive solution that addresses the specific SEO challenges faced by WooCommerce websites. Its intuitive features streamline the optimization process, from meta tags and XML sitemaps to readability improvements, all aimed at maximizing online visibility and improving the overall performance of e-commerce stores in competitive digital landscapes.

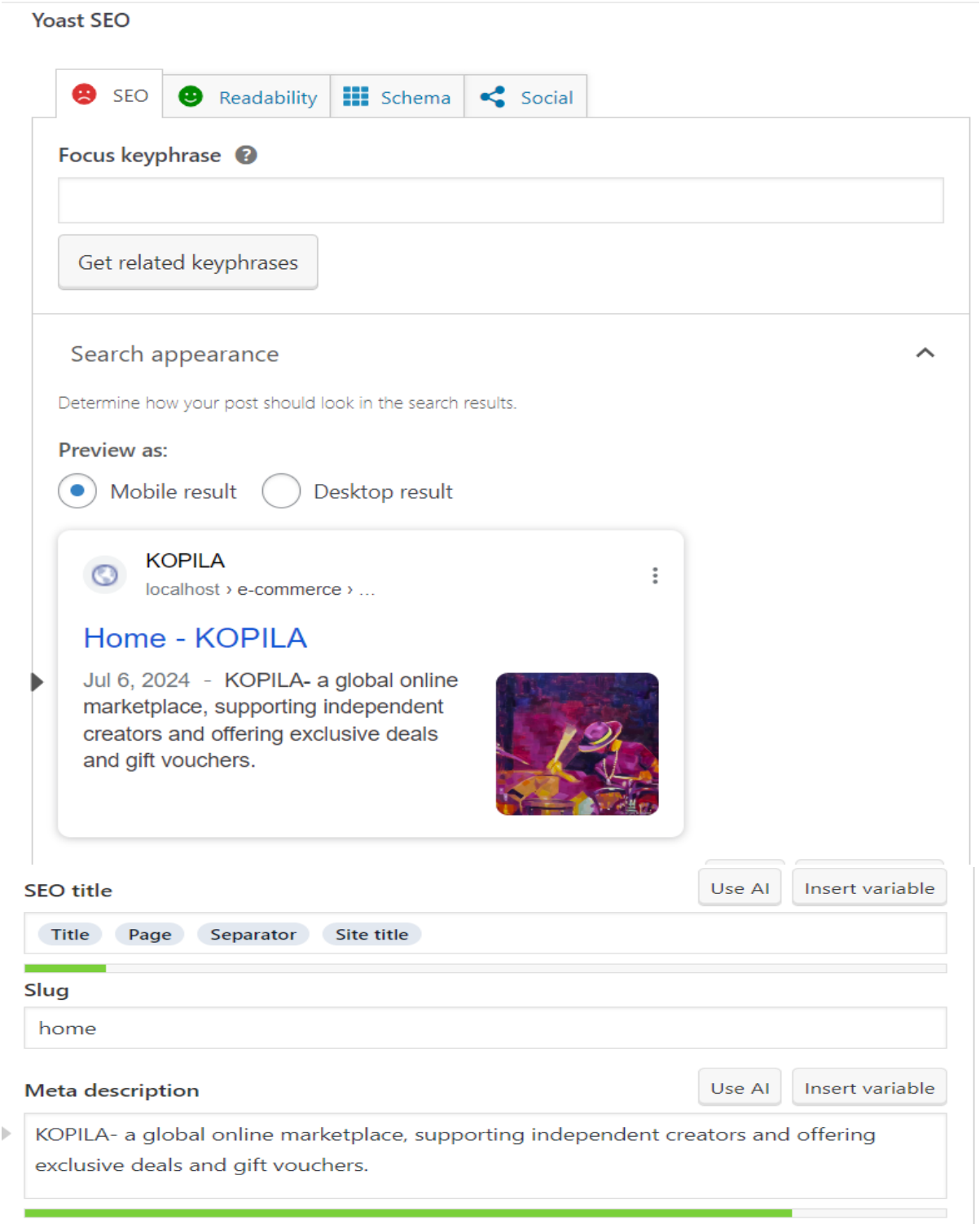


Figure 21: Setting up Yoast SEO Plugins

6.7 Cross Sell, Upsell and Related Product in WooCommerce

Cross-sells: Cross-sells suggest complementary products that go well with the main item a customer is interested in. These items are often displayed during checkout or on the product page, encouraging additional purchases.

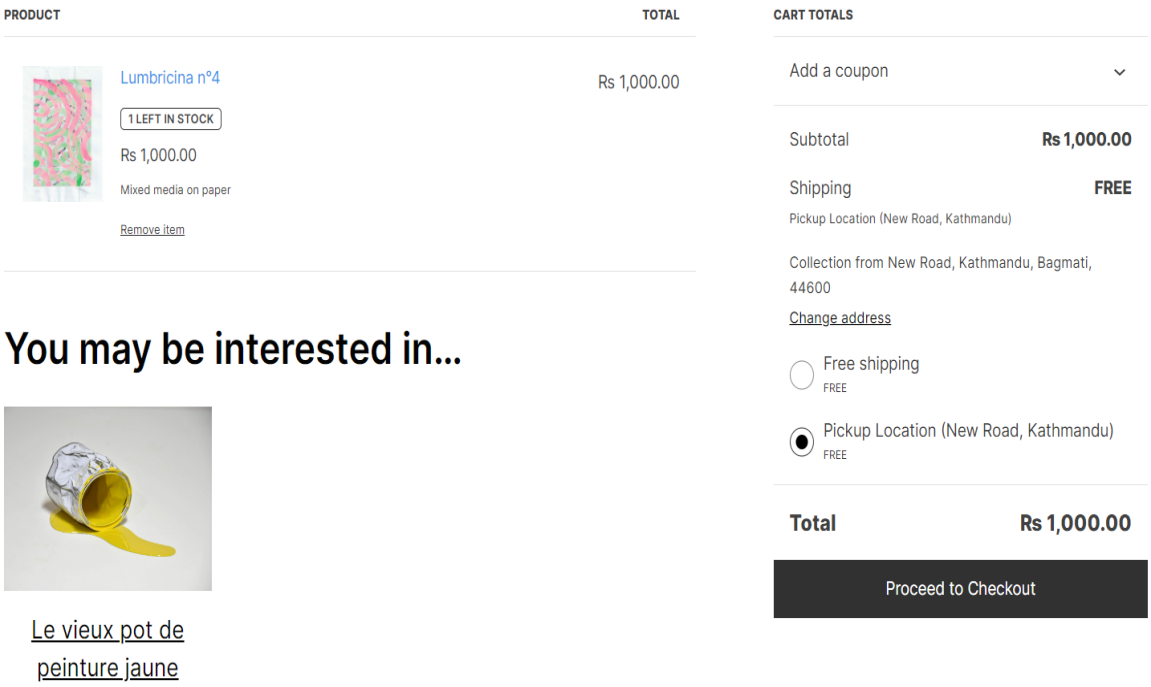


Figure 22: Product Cross-Sells

Upsells: Upsells encourage customers to consider a more expensive or premium version of the product they're viewing. This could be a newer model or an upgraded version, aimed at increasing the order value.

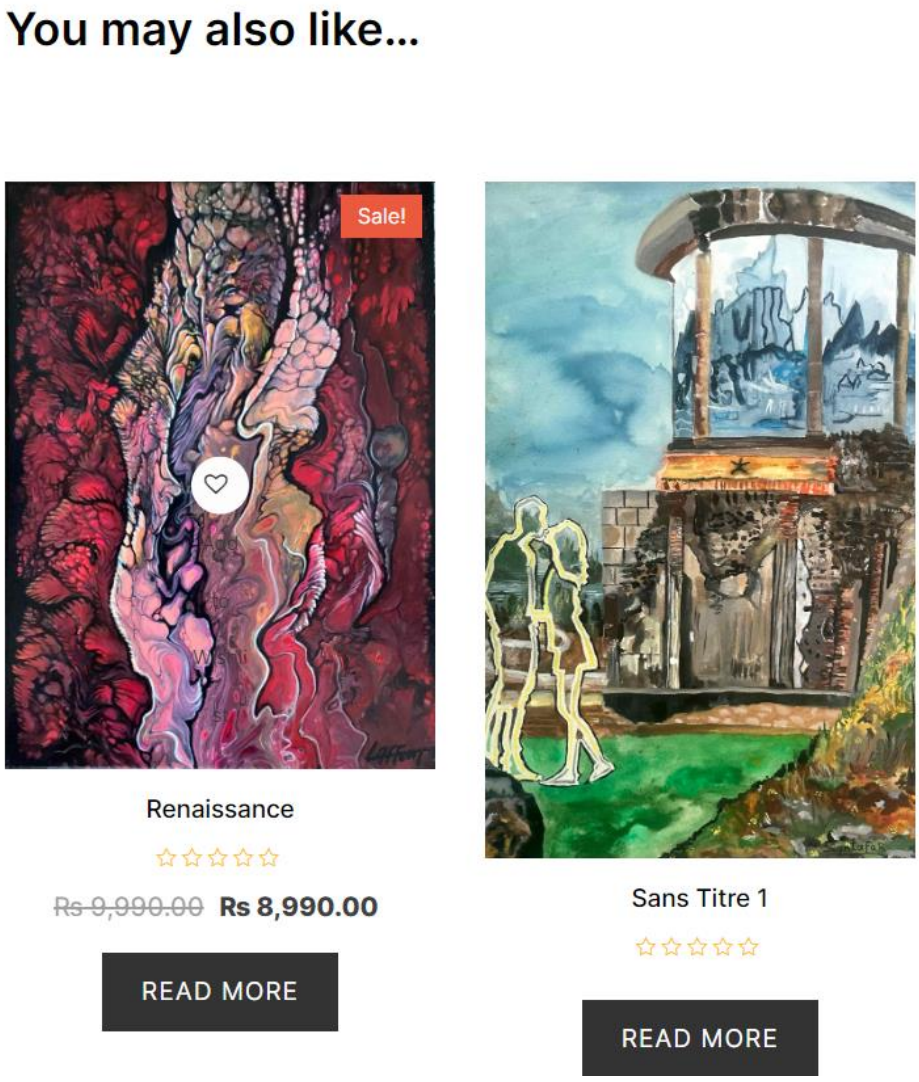


Figure 23: Product UpSells

Related Products: Related products are items that share similar tags or categories with the product being viewed. They are shown on the product page as alternatives or supplements, aiding in customer navigation and potentially increasing sales.

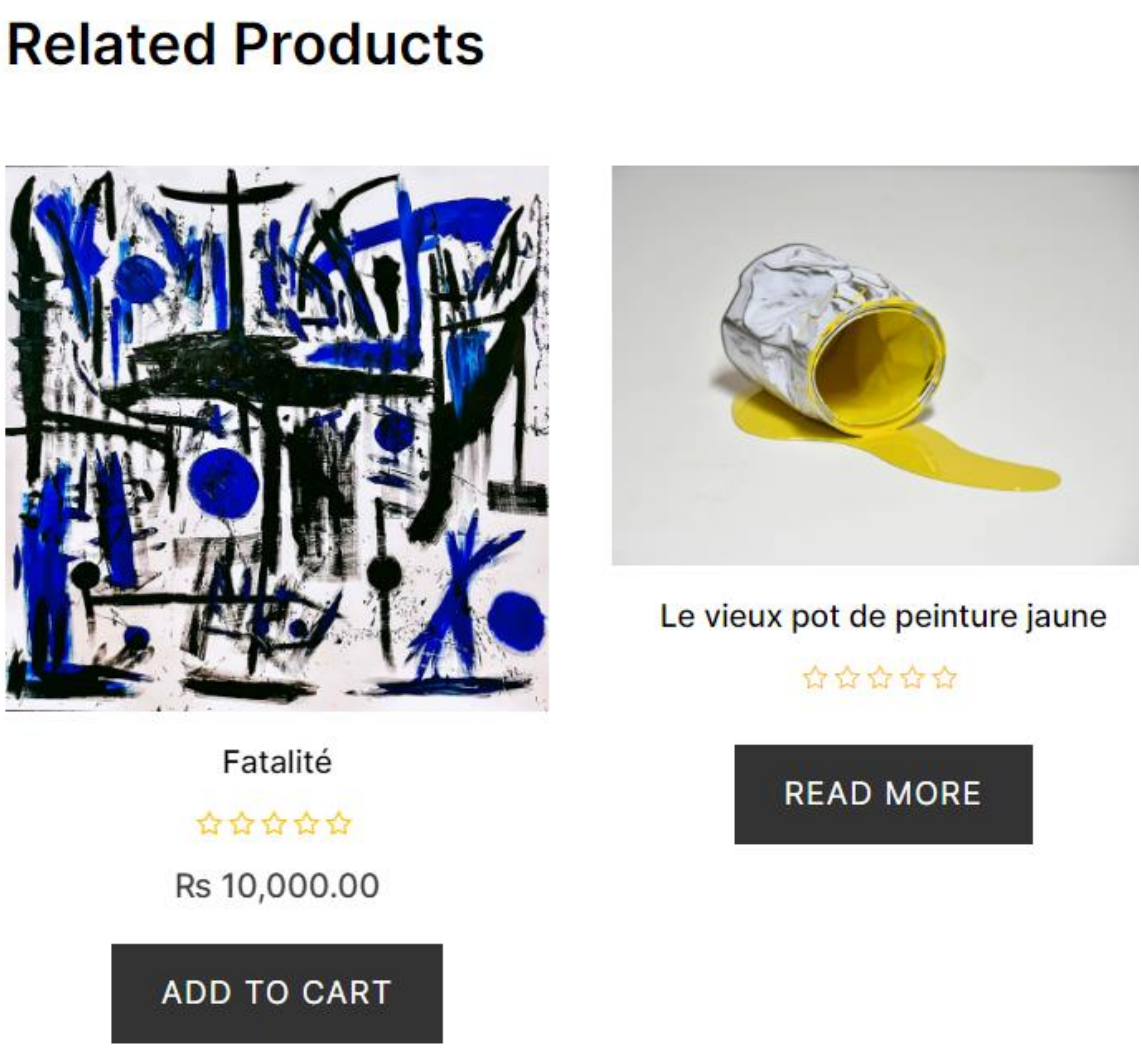


Figure 24: Recent Products

In WooCommerce, you can set up upsells and cross-sells for products through the admin panel under Linked Products in the Product Data section. These strategies help enhance the shopping experience and can boost average order value by suggesting relevant and appealing items to customers.

CHAPTER 7: CONCLUSION AND RECOMMENDATION

7.1 Conclusion

We have showcased the transformative power of technology in revolutionizing the art buying experience with the creation of the KOPILA online art shopping platform. This system provides a reliable and user-friendly way to purchase art, connecting artists and buyers nationwide. Built using WordPress, KOPILA seamlessly integrates comprehensive e-commerce functionalities to enhance product discovery, secure transactions, and customer support. By addressing the limitations of traditional art purchasing methods, KOPILA significantly enhances accessibility and convenience, demonstrating the potential of digital solutions to enrich the art community and streamline online shopping

7.2 Recommendation

To further improve the KOPILA online art shopping platform, a strategic approach is needed that emphasizes enhanced marketing efforts, broader artist outreach, and continuous user experience optimization. Expanding marketing campaigns and leveraging social media can increase platform visibility and attract a diverse audience. Active recruitment of artists from various backgrounds will ensure a wide range of artwork, appealing to a broader customer base. Regular user feedback should inform ongoing refinements to the platform's interface and functionality. Implementing data analytics will help tailor personalized recommendations and targeted marketing, while fostering community engagement through interactive features like virtual exhibitions and artist profiles will enhance customer loyalty. Integrating additional secure payment options and ensuring mobile optimization will further streamline the shopping experience. By prioritizing these improvements, KOPILA can maintain its position as a leading online art marketplace, providing a dynamic, secure, and user-focused environment for art enthusiasts nationwide.

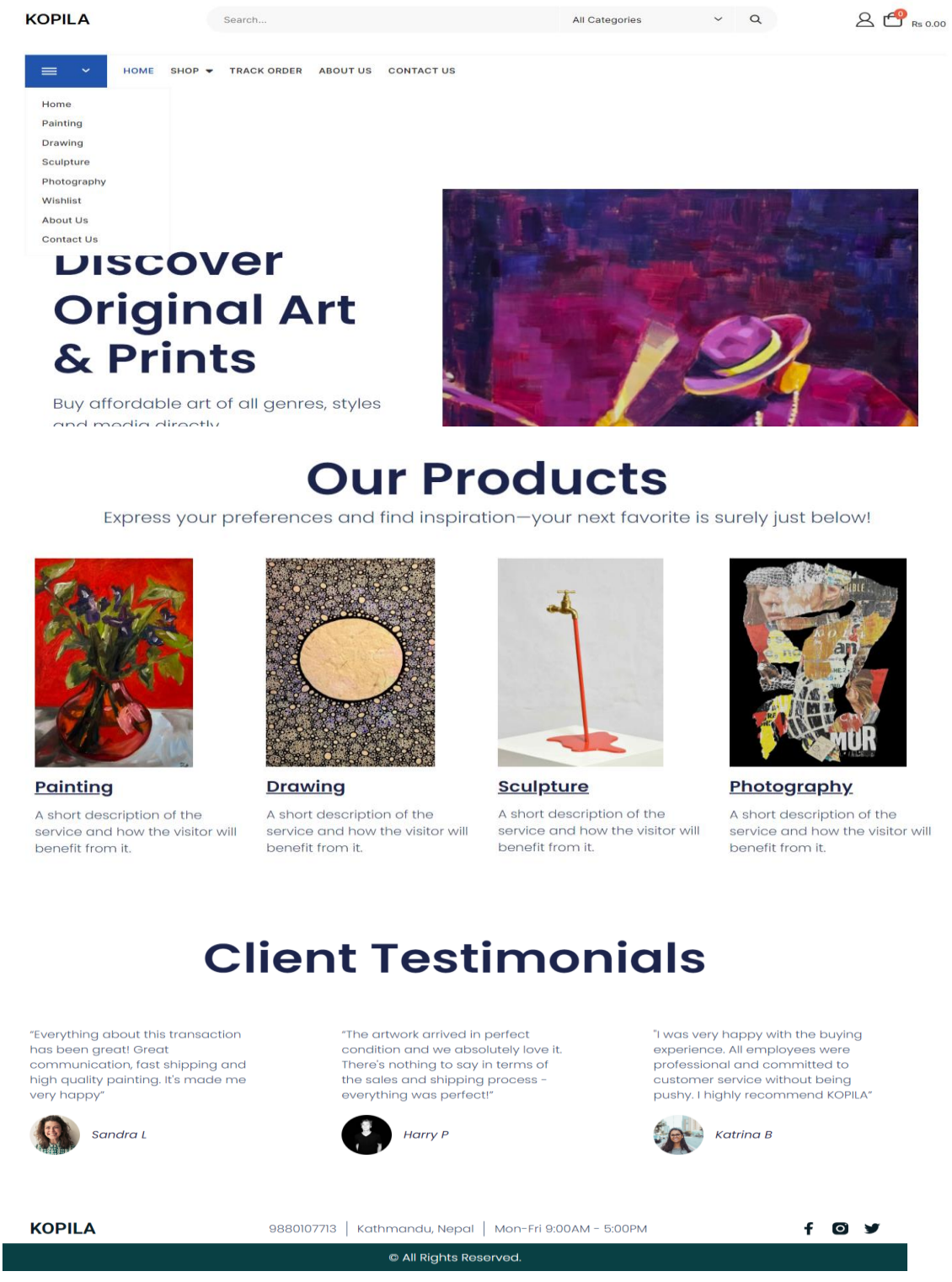
CHAPTER 8: REFERENCES

[1] "What Is E-commerce? | Definition from TechTarget." Accessed: Jul. 10, 2024. [Online]. Available: https://www.techtarget.com/searchcio/definition/e-commerce

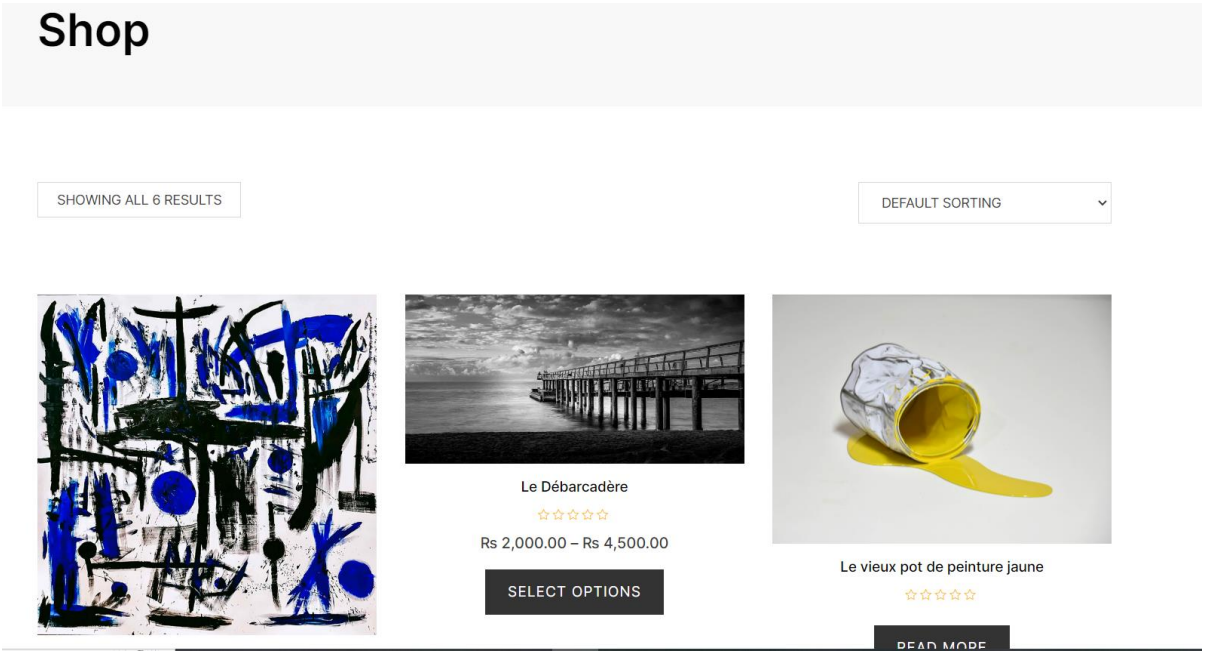
[2] "Understanding Web Development Process: Full Guide in 6 Steps." Accessed: Jul. 10, 2024. [Online]. Available: https://www.turing.com/resources/web-development-process

CHAPTER 9: APPENDIX

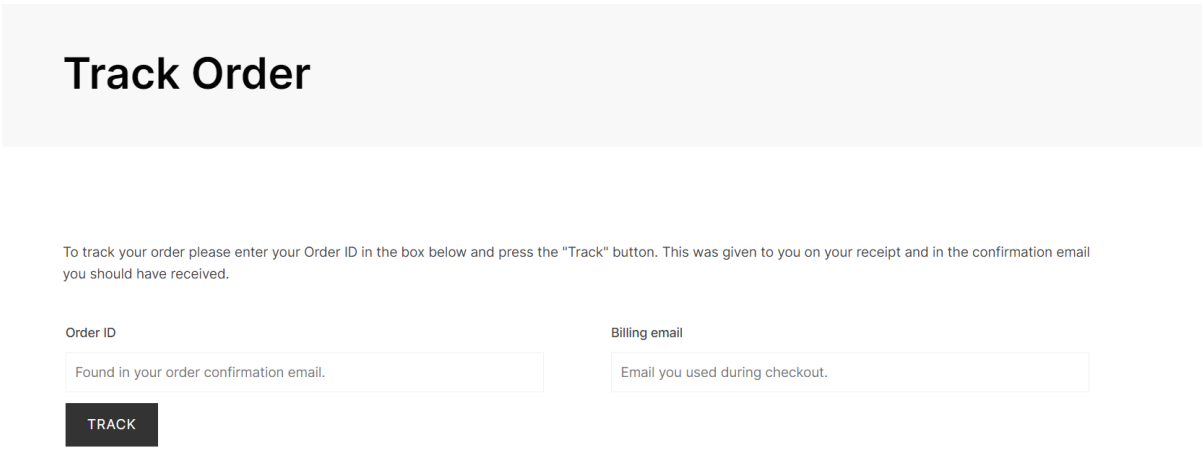
Home Page



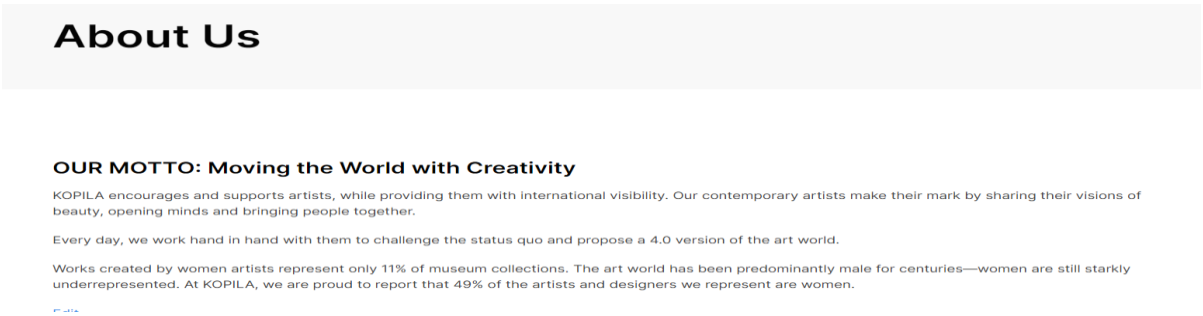
Shop



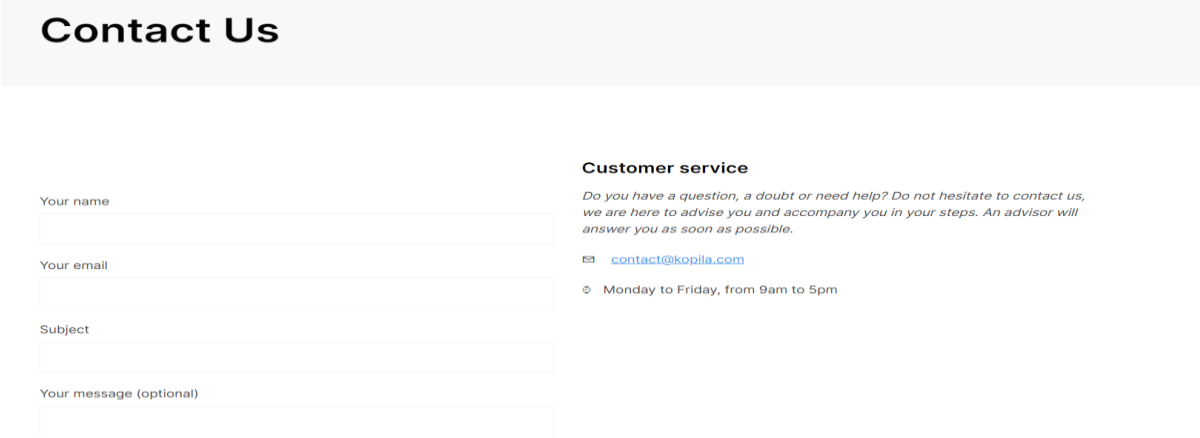
Order Tracking Page



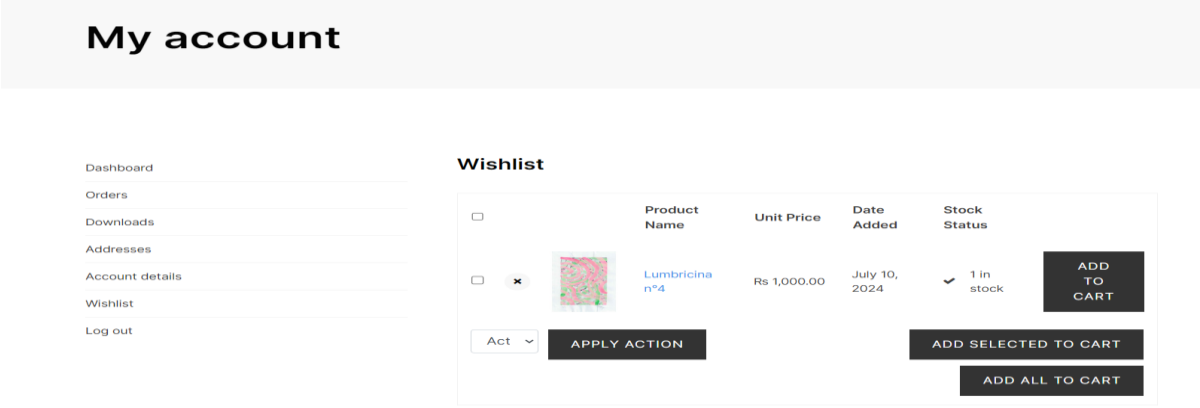
About Us



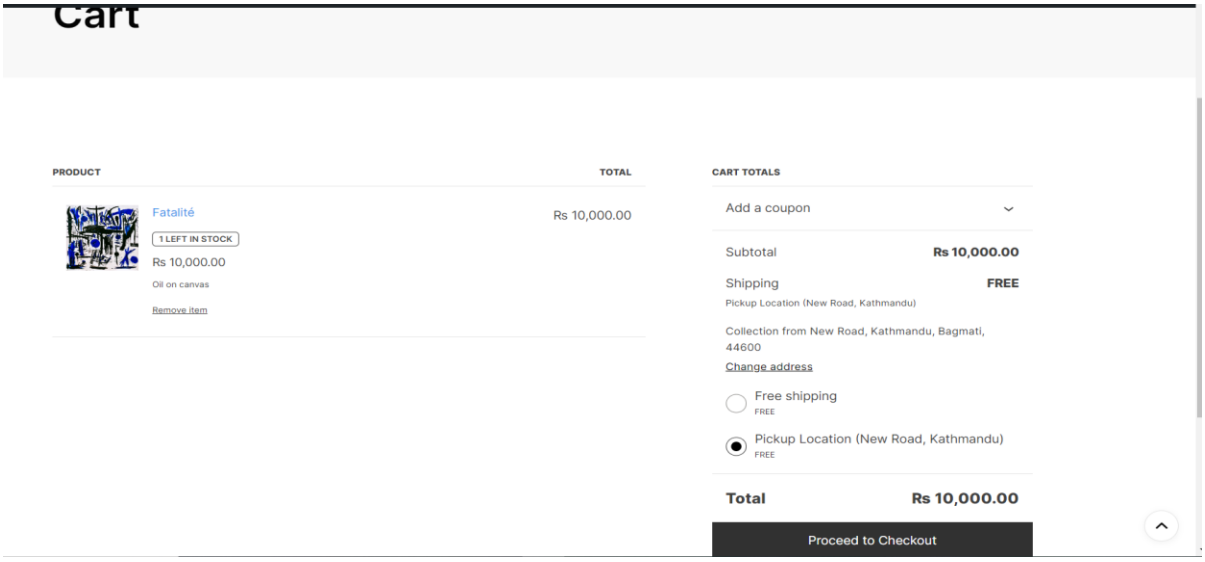
Contact Page



My Account Page



Cart



Order summary

1 Fatalité Rs 10,000.00

Rs 10,000.00

1 LEFT IN STOCK

Oil on canvas

Add a coupon

Subtotal Rs 10,000.00

Shipping FREE

Pickup Location (New Road, Kathmandu)

Collection from New Road, Kathmandu, Bagmati, 44600

Total **Rs 10,000.00**

Checkout

Thank you. Your order has been received.

ORDER NUMBER:	DATE:	EMAIL:	TOTAL:	PAYMENT METHOD:
120	July 9, 2024	abc123@gmail.com	Rs 0.00	Cash on delivery

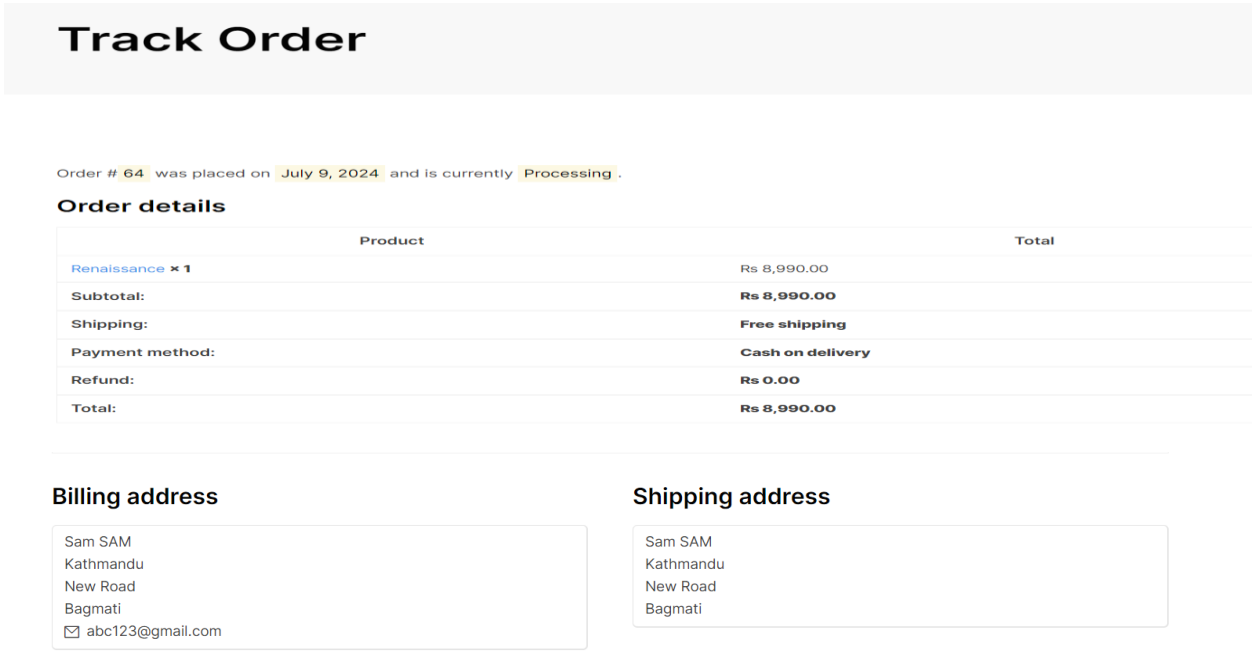
Pay with cash upon delivery.

Order details

Product	Total
Fatalité × 0	Rs 0.00
Subtotal:	Rs 0.00
Shipping:	Collection from New Road, Kathmandu: New Road, Kathmandu, Bagmati, 44600 In Second Floor of L Mall
Total:	Rs 0.00

ORDER AGAIN

Check your Order Status



Track Order

Order # 64 was placed on July 9, 2024 and is currently Processing .

Order details

Product	Total
Renaissance × 1	Rs 8,990.00
Subtotal:	Rs 8,990.00
Shipping:	Free shipping
Payment method:	Cash on delivery
Refund:	Rs 0.00
Total:	Rs 8,990.00

Billing address

Sam SAM
Kathmandu
New Road
Bagmati
abc123@gmail.com

Shipping address

Sam SAM
Kathmandu
New Road
Bagmati