Implementing CryptoWoo as a Cryptocurrency Payment Gateway on the Contemporary Curiosities Online Store

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Abstract— This study aims to implement the CryptoWoo payment gateway and analyse its implementation on WordPress as a cryptocurrency payment gateway for the Contemporary Curiosities online store. The online store is built using WordPress with additional plugins such as WooCommerce, CryptoWoo, Super Socializer, and Tawk.to. The development of the online store follows the waterfall method, while testing is conducted using black box testing through in-depth interviews. This study evaluates ease of use, functionality, and user acceptance. The results show a positive potential for CryptoWoo as a cryptocurrency payment gateway. Support and acceptance from representatives of the cryptocurrency trading platform Indodax, application development partners, and students as potential consumers of the Contemporary Curiosities online store indicate a positive response.

Keywords— cryptocurrency, CryptoWoo, e-commerce, payment gateway, WordPress

I. INTRODUCTION

Development in Indonesia is growing rapidly, driven by internet technology that accelerates digitalization across various sectors, including the economy. The shift from traditional markets to e-commerce systems has transformed transaction methods, with the increasing adoption of cashless payments replacing conventional money [1].

Along with the rising popularity of digital transactions, cryptocurrency has emerged as both a payment method and a digital asset, offering security and transparency through blockchain technology. Additionally, blockchain supports the development of NFTs, transforming artworks into unique digital assets in the form of non-fungible tokens that securely maintain ownership [2], [3].

The concepts of blockchain and NFTs create new opportunities for the digital art market, including in Indonesia. The author is interested in applying this on a small scale, leading to the creation of a store concept called "Contemporary Curiosities." This initiative is developed through collaboration with partners specializing in contemporary art to express important social issues [4].

This site adopts an approach using the WooCommerce plugin, which includes a simple license key feature. The license key serves to grant ownership rights to purchased artworks. An e-commerce site requires a payment gateway to facilitate transactions. CryptoWoo was chosen because it integrates seamlessly with WooCommerce and offers a wide range of features in its free service [5], [6], [7].

This study aims to test the implementation of the CryptoWoo plugin as a cryptocurrency payment gateway on the "Contemporary Curiosities" online store. The research focuses on aspects such as navigation, interface, transaction process, as well as the opportunities, challenges, and user experience when interacting with the site.

II. METHOD

The diagram below illustrates the development flow of the Contemporary Curiosities project using the Waterfall

model. The Waterfall method is an approach in software development that follows a sequential or phased workflow, where each stage must be completed before moving on to the next [8], [9].

1. Software Requirements Analysis
   The Contemporary Curiosities project begins with a requirements analysis to determine business partners, owners/admins, and other essential features needed.

2. Design
   Next, the design requirements for the Contemporary Curiosities site are summarized into several types of diagrams. The goal is to ensure that the program has a clear structure.

3. Development
   Development is carried out by selecting a theme and installing plugins such as CryptoWoo, Super Socializer, and Tawk.to to provide functionality for users.

4. Testing
   Before the launch, testing is conducted on the Contemporary Curiosities site prototype along with interview respondents using the black box testing method to ensure the site functions properly.
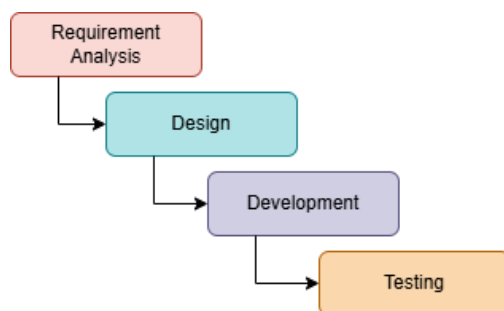

Figure 2.1 Software development with the Waterfall method

The testing was conducted using the black box testing method, implemented through in-depth interviews to evaluate the functionality of the application without requiring knowledge of its internal structure. The testing includes usability testing to assess the user experience, functional testing to ensure that the software functions according to specifications, and user acceptance testing (UAT) to verify that the system meets user requirements [10], [11], [12], [13].

III. RESULTS AND DISCUSSION
A. CHART MODELS
1) Flowchart
A flowchart is a visual representation of a procedure used to illustrate a process or solve a problem [14].

Figure 3.1 below shows the transaction flow on the Contemporary Curiosities website, starting from site access, making a transaction with cryptocurrency, to receiving the digital product and license key. The process ends with either logging out or continuing the order.
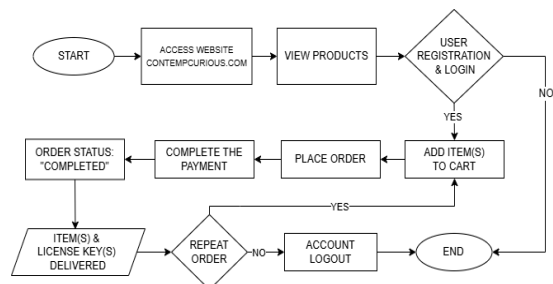

Figure 3.1 Contemporary Curiosities Flowchart

2) Use Case Diagram
Figure 3.2 is a use case diagram that illustrates the interaction flow within the transaction system of the Contemporary Curiosities website. This diagram involves three main actors: Admin, User, and the WordPress System.

The admin manages products and processes orders, while the User registers, logs in, places orders, and makes payments using cryptocurrency. The WordPress System, including

SISFORMA: Journal of Information Systems (e-Journal) Vol.12 / No 1 |Th. 2025
ISSN 2442-7888 (online) DOI 10.24167/sisforma.v12i1.13174

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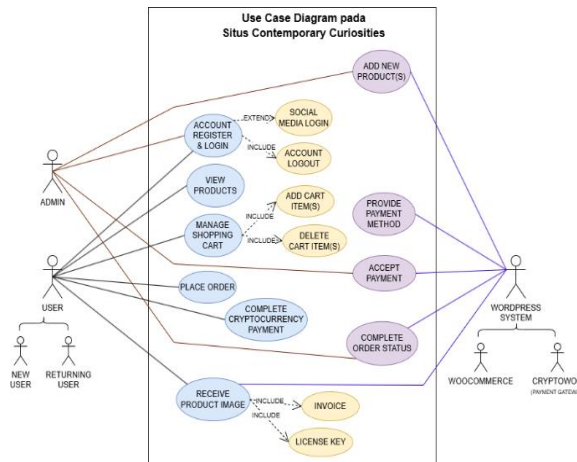WooCommerce and CryptoWoo, supports transactions and the distribution of digital products.

Figure 3.2 Use case diagram

3) Activity Diagram

An activity diagram is a diagram that represents the flow of activities or processes within a system that will be operated [15].

Figure 3.3 is an activity diagram that explains the transaction flow from the initial site access to the user's receipt of the digital product on the Contemporary Curiosities website. This diagram includes three main actors: the User who registers, orders, and pays; the admin who verifies payments and completes orders; and the WordPress System which handles technical processes such as data storage, QR code generation, and digital product delivery.
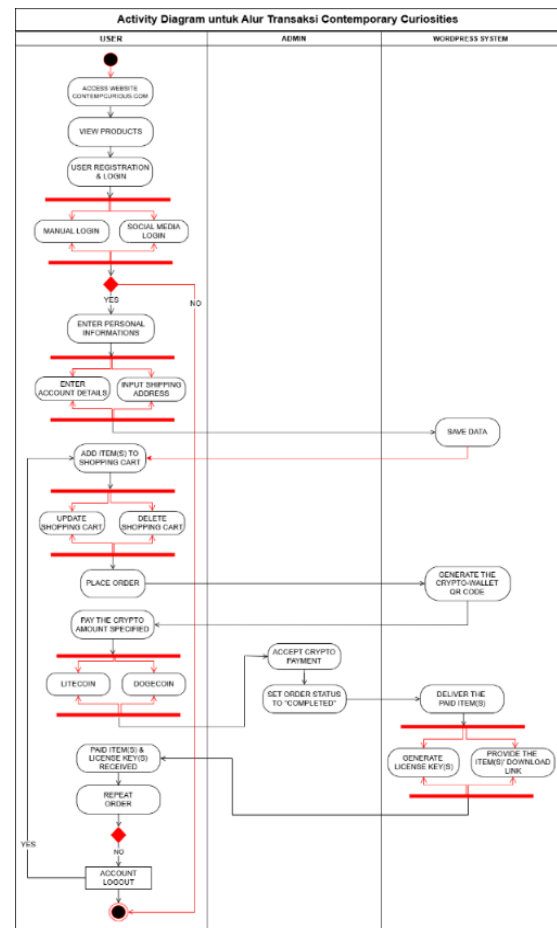
Figure 3.3 Activity diagram

B. WEBSITE DEVELOPMENT

The development of the Contemporary Curiosities website is divided into three main parts: the admin interface, the user interface, and the transaction process.

1) Admin Dashboard
a. Website Plugins

The following are WordPress plugins installed on the Contemporary Curiosities website to enhance its features and functionality.
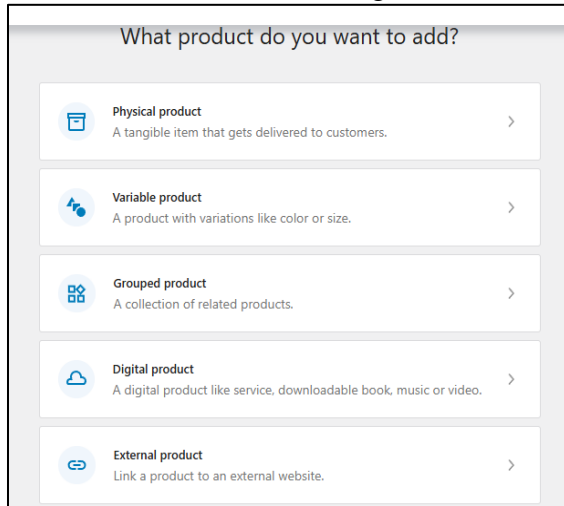
o WooCommerce Plugin

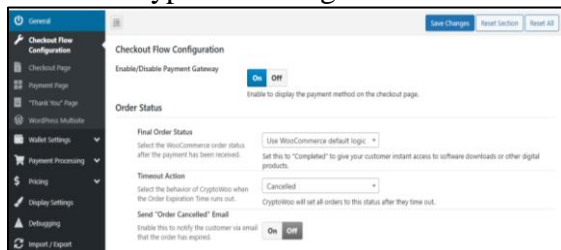**Figure 3.4 WooCommerce settings**

o CryptoWoo Plugin

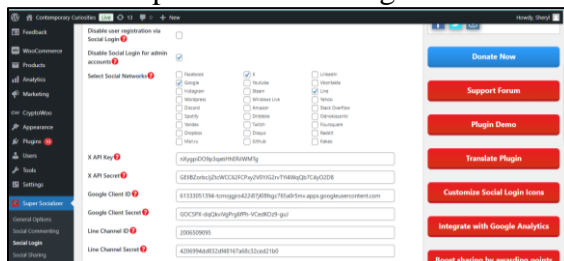**Figure 3.5 CryptoWoo settings**

o Super Socializer Plugin

Figure 3.6 Super Socializer settings
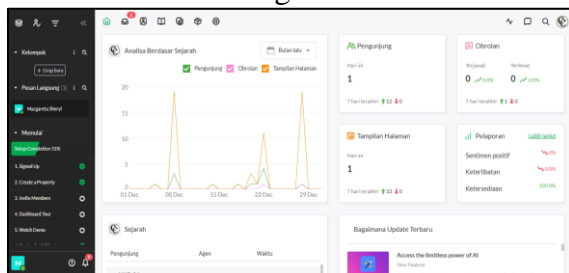
o Tawk.to Plugin

Figure 3.7 Tawk.to admin dashboard

b. Orders Menu

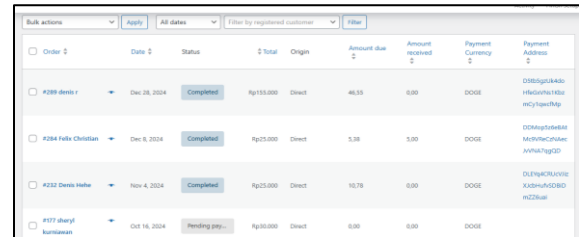The following is the Dashboard Analytics menu interface available in WordPress features for managing order status.

Figure 3.8 Orders menu for admin

c. Dashboard Analytics

The following is the Dashboard Analytics menu interface available in WordPress features for summarizing sales on the Contemporary Curiosities website.
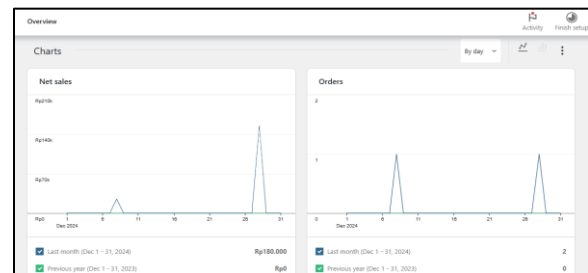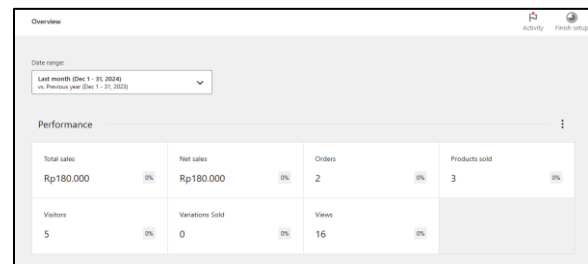

Figure 3.9 Dashboard Analytics page

2) User Interface

a. Homepage

The following is the Homepage display created on the Contemporary Curiosities website.
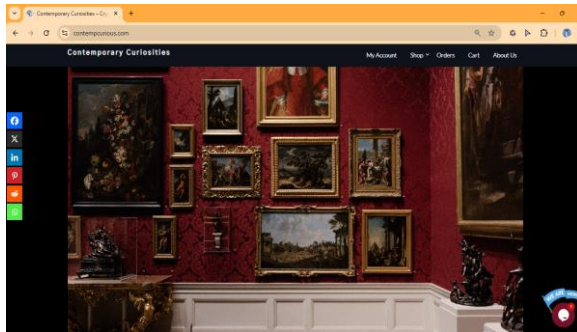
Figure 3.10 Homepage

b. Shop Menu

The following is the Shop menu display created on the Contemporary Curiosities website. Users can choose the products they want to purchase.
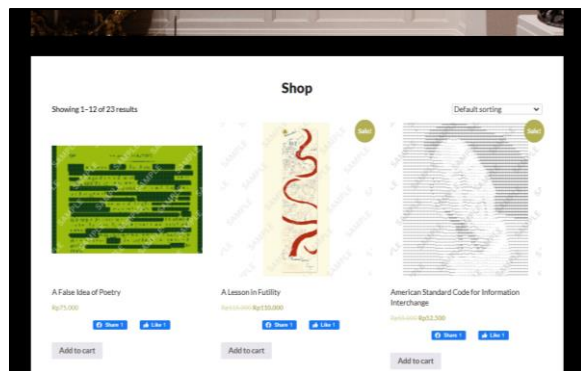

Figure 3.11 Products catalogue

c. My Account Menu

The following is the My Account menu display created on the Contemporary Curiosities website, which contains account settings and user profile information.
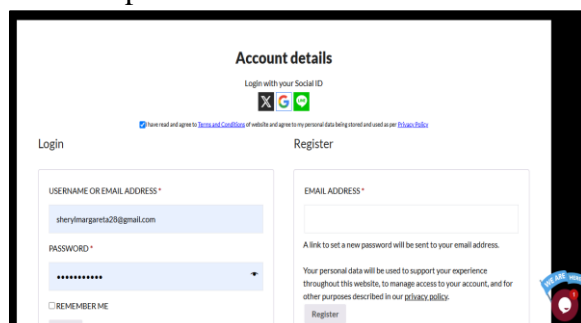

Figure 3.12 My Account menu

d. Orders Menu

The following is the Orders menu display created on the Contemporary

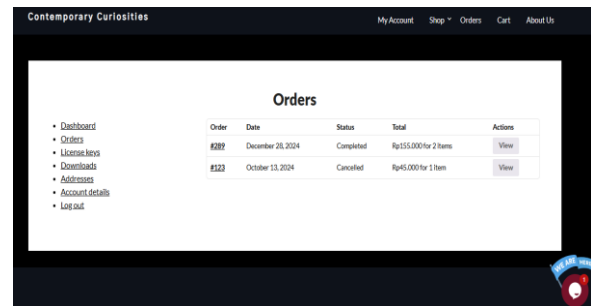Curiosities website to monitor order history and status.

Figure 3.13 Orders menu for user

e. Cart Menu

The following is the Cart menu display created on the Contemporary Curiosities website.
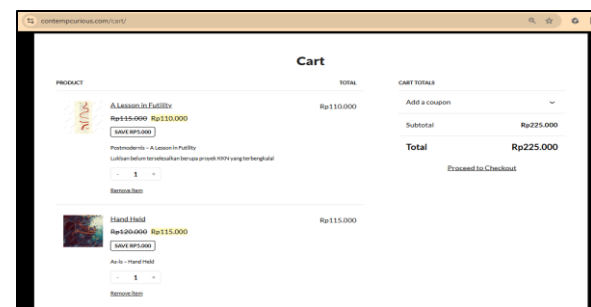

Figure 3.14 Cart menu display

f. Chatbot Menu

The following is the AI-based chatbot menu display created on the Contemporary Curiosities website, located at the bottom-right corner of the Homepage.
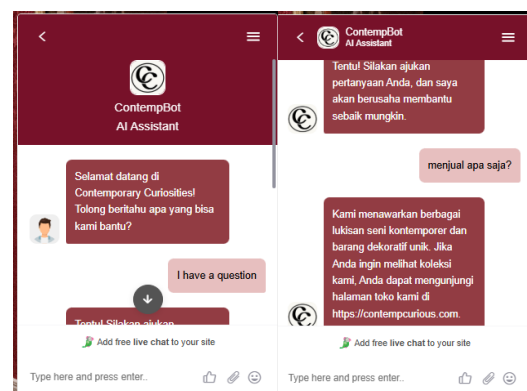

Figure 3.15 Chatbot menu usage

3) Transaction Activities

Below is an overview of the transaction sequence that has been carried out on the Contemporary Curiosities website.
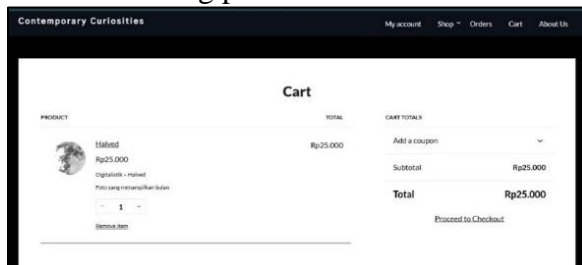
- o Adding products to Cart
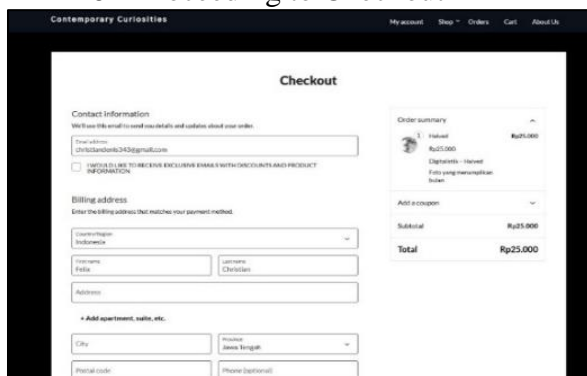

Figure 3.16 Cart menu page

- o Proceeding to Checkout

Figure 3.17 Checkout page
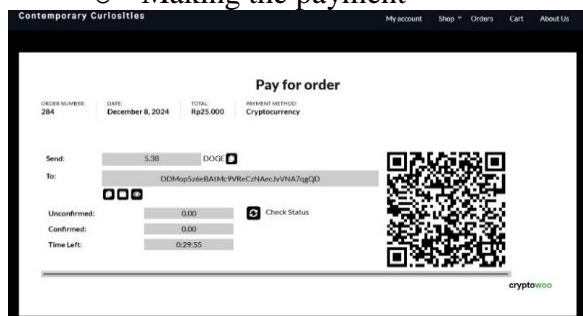
- o Making the payment

Figure 3.18 Payment page
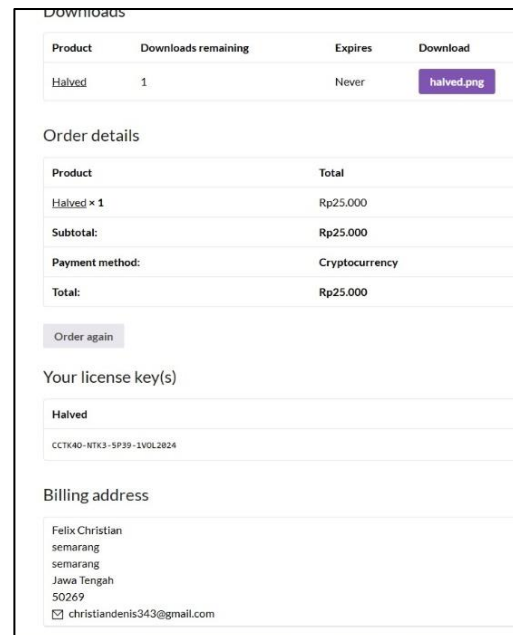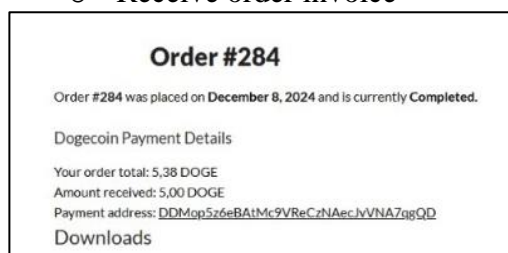
- o Receive order invoice

Figure 3.19 Invoice page

C. TESTING

The testing involved four respondents, consisting of two students from the Information Studies Program at Unika Soegijapranata as regular users, one student from Unika Soegijapranata as a project partner, and one employee from Indodax as a special user.

1) Implementation of CryptoWoo on the Contemporary Curiosities online store

According to the respondents, CryptoWoo is considered relevant to the latest developments in digital technology and offers good transaction security. However, there are some weaknesses, such as the limited variety of cryptocurrency wallets available in Indonesia, the manual order confirmation process, and slow transactions due to server dependency.

2) Management of collaboration with project partners for the Contemporary Curiosities online store

The partner stated that the collaboration is going well with smooth communication. For the continuity of this partnership, work efficiency could still be

improved through a project management platform. The partner also suggested enhancing branding by using a distinct colour scheme to make the website look more professional.

3) Public reception of the implementation of the Contemporary Curiosities online store

The public, represented by the respondents, expressed enthusiasm and satisfaction with their shopping experience on the Contemporary Curiosities online store. They hope for updates to improve server speed and the automation of order status. The limited variety of products and UI design were also pointed out as areas for improvement on the website.

IV. CONCLUSION

The implementation of CryptoWoo as a cryptocurrency payment gateway on the Contemporary Curiosities online store shows good potential to be accepted by users. In terms of managing the collaboration with project partners, efficiency still needs to be improved in development activities. Furthermore, the site received positive feedback from the public, accompanied by suggestions to add more product variety and improve UI design.

ACKNOWLEDGEMENT

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