

Information Technology

## Web Based E-Commerce System Design at EXO Shop Using The Waterfall Method

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### ARTICLE INFORMATION

Received: July 17, 2023  
Revised: August 02, 2023  
Available Online: August 07, 2023

### KEYWORDS

E-Commerce; HTML; Waterfall; Website; XAMPP

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### A B S T R A C T

Online shop websites can facilitate company or shop promotions and make it easier for consumers to get information about products from sellers or shops. Limited product merchandising prevented stores from increasing sales, and poor inventory control and manual reporting negatively impacted stores, making sales and inventory reporting difficult. The purpose of this research is to use the waterfall method to create an e-commerce website that can be opened online with an internet network. The method used by researchers in this study is the waterfall method. This method is used by researchers to develop software systems through a sequential software life cycle, starting with analysis, design, coding, and testing. System themes use PHP, HTML, CSS and Notepad while the database uses My-Sql which is accessed via XAMPP localhost. This research produces a web-based e-commerce application that provides real-time stock information, sales reports, stock reports and stores can advertise the products being sold. So that the process of reporting and controlling inventory data is carried out properly, and store marketing has a wider reach, so that store sales can increase.

## INTRODUCTION

Sales and advertising systems on the Internet are growing rapidly. Companies that use web-based technology as a business strategy to offer their products to all consumers without being bound by space and time constraints. From large companies to small and medium businesses, the online sales system has become a cheap and affordable means of sales promotion.

In the Medan area there are many conventional shops (offline) that sell clothes, pants, shoes and more. These stores have to spread their wings to sell the products they offer, and when consumers want to buy or just see the products, they still have to come directly to the store. Of course it takes quite a long time to go straight into the store. In addition, it is difficult for consumers to know the various products and brands in stores because product marketing only occurs in stores. Stores also have to set up a stand in front of the store if the store wants to advertise products.

To overcome this problem, researchers are challenged to build an online sales website to expand the reach of product marketing so that consumers can quickly and easily access all the products they need. By building an online sales page, even traditional shops can use it as a means to promote the products they sell, so that they are better known and it is hoped that it will make it easier for consumers to avoid coming directly to the store to buy goods or buy products.

*E-commerce* is a form of buying and selling both products and services that are marketed through electronic systems such as the internet, the web and other computer networks. The use of e-commerce will help provide an overview of how the

sales system is needed to face competition in the business world. E-commerce is expected to be able to help problems that occur and are expected to be able to provide solutions to problems encountered in buying and selling activities. E-commerce is widely applied to various kinds of business activities, one of which is the business of selling clothing products. Researchers use PHP, HTML, CSS and Notepad while the database uses MySQL which can be accessed via XAMPP on localhost. By using the waterfall method on the implementation of this clothing sales website.

## **METHOD**

### ***E-Commerce***

E-Commerce is a trading concept in the form of buying and selling procedures found on the internet. E-Commerce is a concept that describes the process of buying, selling and exchanging products, services and information through a computer network, namely the internet. Most major ECommerce companies are involved in developing, marketing, selling, shipping, servicing and paying customers with the support of a worldwide network of business partners. The development of E-Commerce in Indonesia goes hand in hand with the development of the internet since it first entered Indonesia in the early 1990s. Currently, e-commerce activities in Indonesia are expanding into various types of business activities, from small-scale industries to large-scale industries.

### ***HTML (Hypertext Markup Language)***

HTML is the language used to describe the structure of a web page. HTML is used to publish documents online. The basic statements of HTML are called tags. A tag is declared in square brackets (<>). Tags that are intended for a document or part of a document must be made in pairs. It consists of an opening tag and a closing tag. Where the closing tag uses an additional slash (/) at the beginning of the tag name (Henderson, 2009: 232).

### ***Waterfall Model***

The waterfall model is the most widely used model for the development stage. This waterfall model is also known as the traditional model or classical model. The waterfall model is often also called the sequential linear model or the classic cycle. This waterfall model provides a sequential sequential software lifeflow approach starting from the analysis, design, coding, testing and support stages.

### ***Web***

The World Wide Web or often known as the Web is an information presentation service that uses the concept of hyperlinks (links), which make it easier for surfers (a term for computer users who browse or search for information via the internet). This feature has made the web the fastest growing service. The Web allows highlighting (highlighting or underlining) words or pictures in a document to link to or point to other media such as documents, phrases, movie clips, or sound files. The Web can link from anywhere in a document or image to anywhere in another document. With a browser that has a Graphical User Interface (GUI), links can be connected to their destination by pointing at the link with the mouse and pressing it.

### ***XAMPP***

XAMPP is an Apache web server software in which a MYSQL database server is already available, and supports PHP programming.

In this study, researchers used the Waterfall methodology, making it easier to create and design a new system. The waterfall model is the most widely used model for the development stage. This waterfall model is also known as the traditional model or classical model. The waterfall model is often also called the sequential linear model or the classic cycle. This waterfall model provides a sequential sequential software lifeflow approach starting from analysis, design, coding, testing and support stages.

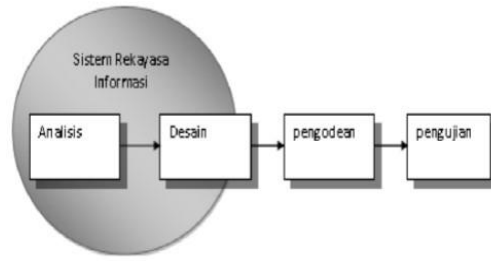


Figure 1. Waterfall method (Source: Rahmayu, 2016)

## RESULTS AND DISCUSSION

### Program Codes

```
class Controller {
    public void login() {
        // Logic for login
    }

    public void register() {
        // Logic for register
    }

    public void editProfile() {
        // Logic for edit profile
    }

    public void logout() {
        // Logic for logout
    }
}

class Model {
    // Logic for model
}

class View {
    // Logic for view
}

// Main class
class Main {
    public static void main(String[] args) {
        // Main logic
    }
}
```

Figure 2. Code Program

### Databases

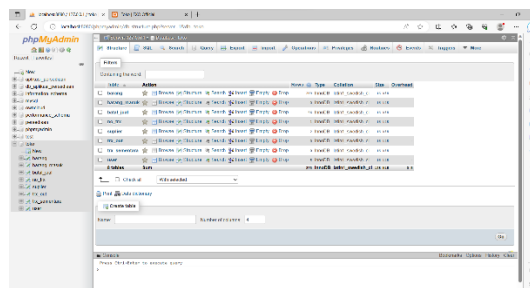


Figure 3. Store Database

### Design

#### Login

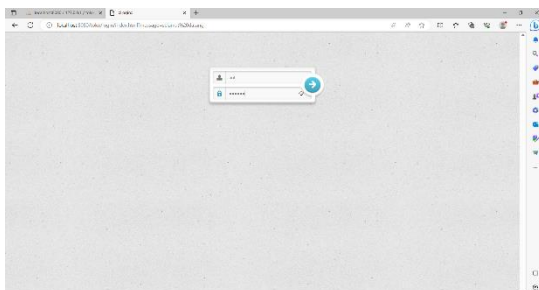


Figure 4. User Login Page

#### Dashboard and Sales Transactions

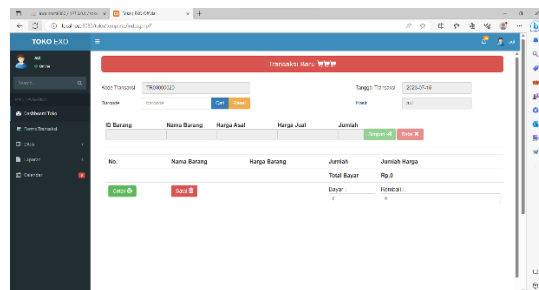


Figure 5. Sales Dashboard and Transaction Pages

Incoming Goods Transactions

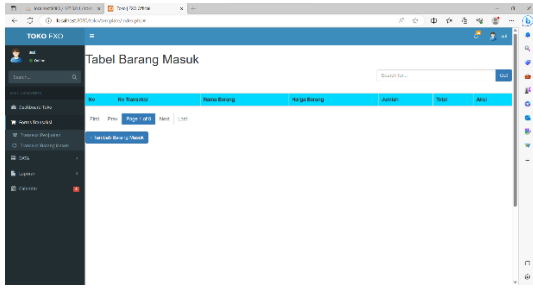


Figure 6. Incoming Goods Transactions

Goods Data

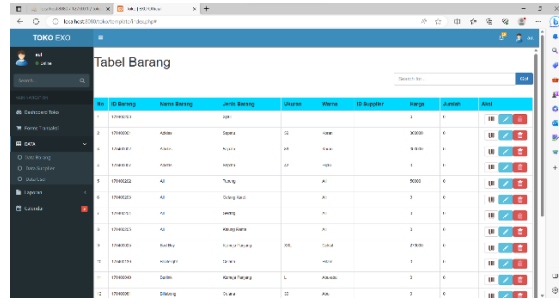


Figure 7. Goods Data

Supplier Data

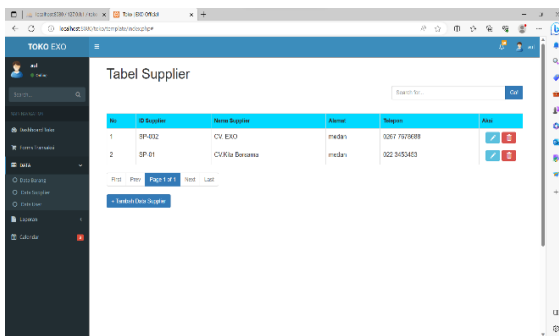


Figure 8. Supplier data

User Data

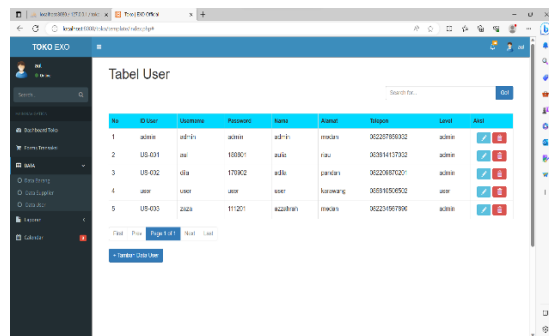


Figure 9. User Data

Incoming Goods

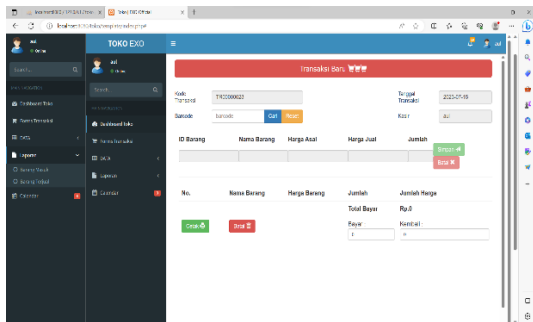


Figure 10. Incoming Goods

Goods Sold

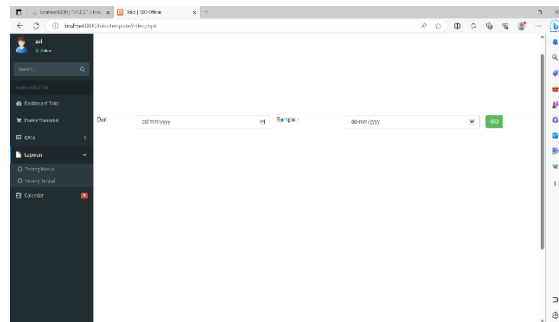


Figure 11. Goods Sold

Celendar

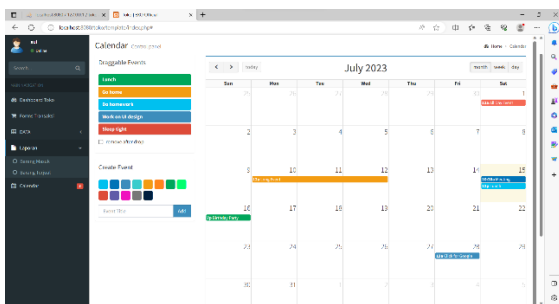


Figure 12. Calendars

## CONCLUSION

Based on the findings of the researchers, it can be concluded that e-commerce applications that run on Google Chrome and Mozilla Firefox run well. The stock of goods in the store database automatically decreases when the customer has purchased goods, so that the customer payment invoice is automatically deleted if the customer does not make a payment within 3 days. This web-based online store is used to make it easier for customers to make purchases, conduct business transactions and negotiate with stores, make it easy to view products anytime and anywhere, and make it easier for customer orders without having to be at the place of business. And facilitate the creation of store product information, store product promotions and sales reports.

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