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Web-Based Marketplace Program Design AT PT. Cipta Innovasi Teknologi Jakarta

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ABSTRACT

Business processes in today's era are dynamic, including the sale of products and services. Websites or platforms such as marketplaces are one of the effective systems in running a company's business processes. Therefore, this research aims to design a web marketplace platform to make it easier for customers to find the right solutions for IT and services. The system's features function to manage various related data and information. When a customer needs a product or service, they will register, then begin searching for the appropriate solution, and then place an order. The author used Sketch to create the interface design on the website. The author used the waterfall approach in designing this system. The author also used the PHP programming language to design the website with the support of CodeIgniter version 4 as a framework to facilitate web design, and the use of HTML and CSS in the website's front-end design. The MySQL database is used for database system processing. With this research, it can produce a platform or website that makes it easier for customers to find the right IT solutions quickly.

Keywords: CodeIgniter, Marketplace, PHP, Information Systems

I. INTRODUCTION

PT Cipta Inovasi Teknologi" in carrying out its business, one of which is the sale of IT products and*services*, such as program or application licenses, as well as services*post-sales* (after sales) in the form of*maintenance*, warranty claims,*remote*, as well as *manpower* (human resources). In the process of running a company, many dynamics occur. One of them is the need for*customer* will purchase IT products quickly, effectively and efficiently without having to wait for the process*Pre-order* This usually takes 3 to 6 months, depending on product availability from the distributor. Furthermore, the increasingly rapid development of technology requires companies to conduct market mapping.*customer* which can be reached quickly*online.*

A web-based marketplace is a digital platform that allows sellers and buyers to interact directly within a single online transaction ecosystem [1]. The existence of a marketplace not only simplifies the process of selling and purchasing products, but also serves as an important tool in expanding market reach and increasing the effectiveness of a company's marketing. The ever-increasing trend of online shopping [2] shows that customers highly value convenience, speed, and flexibility in transactions without being bound by time and location constraints [3]. In addition, limitations in online customer mapping also make it difficult for companies to reach a wider market share beyond the reach of conventional marketing methods [4]., Recent research emphasizes that good web marketplace design and functionality will increase user engagement and influence positive customer perceptions of the digital platform used [5]. Therefore, it is hoped that a good web marketplace design and functionality will increase user engagement and influence positive customer perceptions of the digital platform used [5]. *platform* which helps companies in terms of sales, as well as helping the*customer* in purchasing products [6]. *Platform* designed to help companies market their products, interact with*customer* effectively and efficiently, and can find out*customer* which is exactly in accordance with the products marketed in*platform* this. Share*customer*, *platform* This is also needed to find products that suit your needs, as well as communication with the company that is much faster and safer.

II. METHODS

Model *Waterfall*, is a systematic classic life cycle model in developing a*software*. The system development flow is structured starting from planning, analysis, design, implementation, operation and maintenance [7].

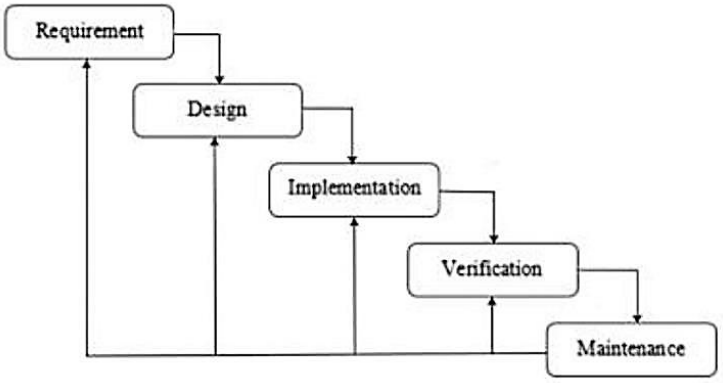

Figure 1. Waterfall Model [7]

Here are the main stages*Waterfall* which will be applied in development cases *Marketplace* [8]:

1. Requirements Analysis
   This phase aims to identify and document system requirements, both functional and non-functional, based on communication with stakeholders, end users, and other related parties [9].
2. System Design
   Based on the documented requirements, this phase creates a technical blueprint of the system to be built. The design includes architecture, UI/UX, database structure, and design diagrams (e.g., ERD, UML) [1].
3. Implementation (Coding / Development)
   At this stage, the application will be created based on the design that was previously designed at the design stage. This design will be a reference in building the application later [10].
4. Testing
   After all modules have been coded, thorough testing is carried out to find errors (bugs), ensure that integration between modules is running smoothly, and that the system meets the initial requirements specifications [11].
5. Maintenance
   This stage is carried out after the application is implemented, where this stage is carried out to ensure the application continues to run well and also to fix bugs and errors that were not found during the testing stage [10].

Development*Web marketplace* has relatively clear needs from the start (e.g. product list, post-sales service, payment methods), so a sequential model like*Waterfall* allows for solid planning and documentation without a lot of major changes mid-way [1], the method*Waterfall* in development projects*Web-Based Marketplace*PT. Cipta Inovasi Teknologi Jakarta was chosen because it provides a clear work structure, complete documentation, and strong planning from start to finish, which is very much in line with the characteristics of the system required by the company.

III. RESULTS AND DISCUSSIONS

A. Needs Analysis

In*web marketplace* In this case, features for checking product availability are very much needed by users. Therefore, several specifications of the requirements of*web* These include:

1. User Needs

Admin Page:

a. Login Admin
b. Product Data Access
c. Invoice Access
d. Admin uploads items

2. User Page:

a. Login User
b. Access *Dashboard*
c. User makes an order

3. **System Requirements**

a. The system can display the dashboard menu according to access.
b. The system displays a message when the login is incorrect.
c. The system displays product data.
d. The system displays product categories.
e. The system displays the ordering process.
f. The system manages, changes, adds, and deletes data.

B. Design

1. Usecase Diagram

Use case diagram depicted as a visual representation ofthe expected functions of the system and the relationship between actors and the system. Everyuse case represents the interaction between actors and systems in fulfilling their functional needs [12]. models in UML used forcomprehensively model system interactions, while showing the relationships between diagram elements and showing interrelated functions in the context of a larger system [13].

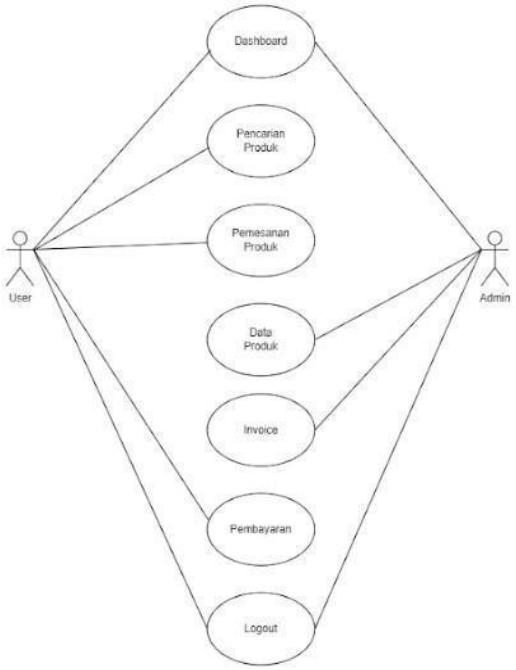

Figure 2. *Usecase Diagram* Proposed System

2. Activity Diagram

a. Order Activity Diagram

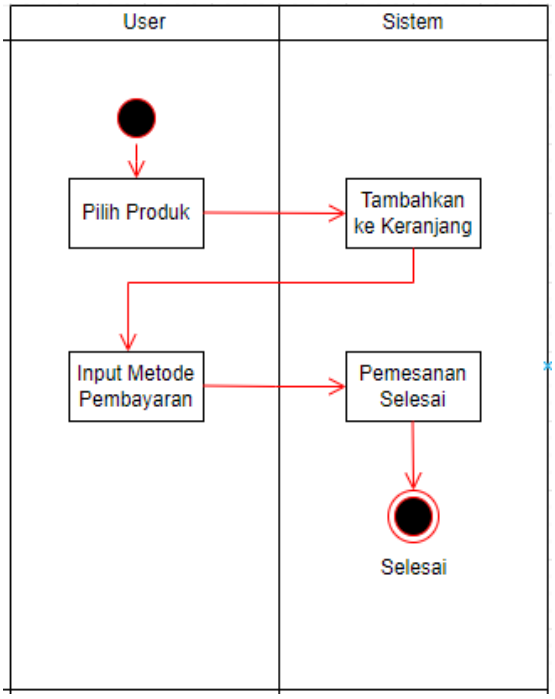

Figure 3. Ordering Activity Diagram

b. Product Detail Activity Diagram

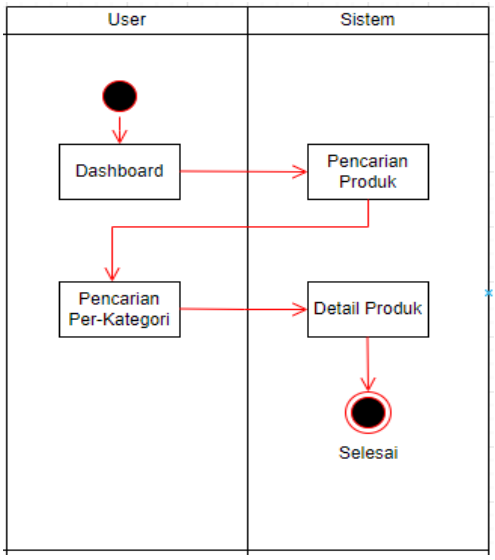

Figure 4. Activity Diagram Detail Produk

3. Database Design

a. Entry Relationship Diagram *(ERD*

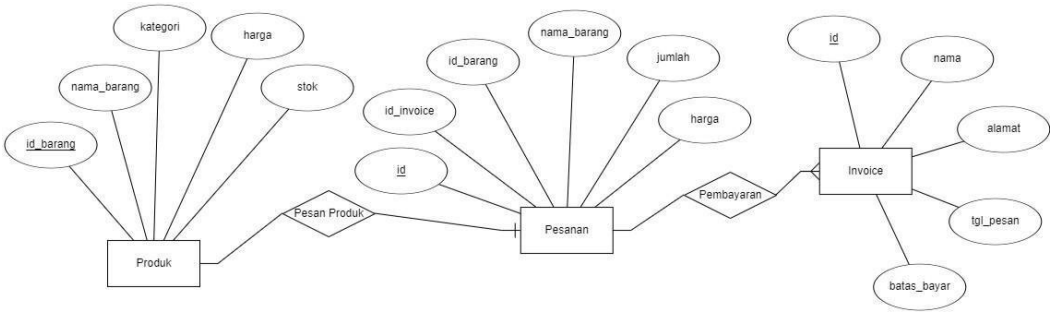

Figure 5. Entry Relationship Diagram Marketplace

b. Logical Record Structure (LRS)

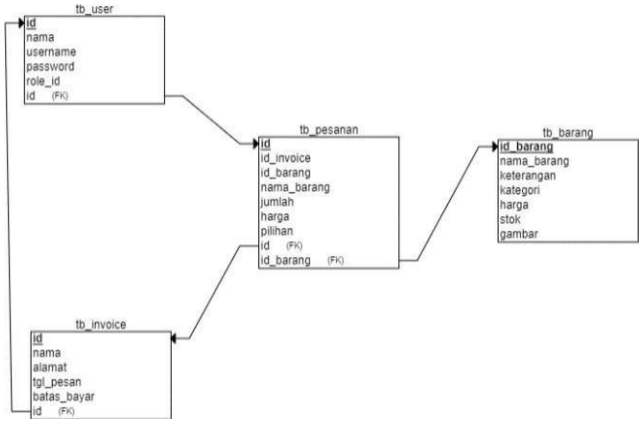

Figure 6. Logical Record Structure Marketplace

4. System Implementation

a. Login Page

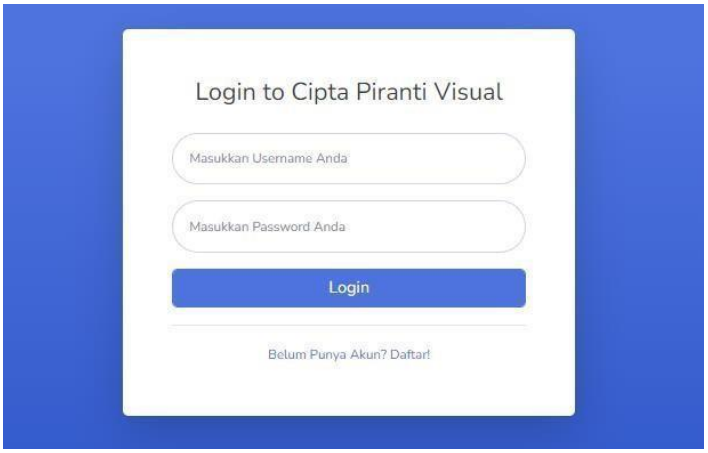

Figure 7. Login Page

On the login page, users and admins will carry out the login process to access the web system by entering the registered username and password to access the web dashboard.

b. Registration Page

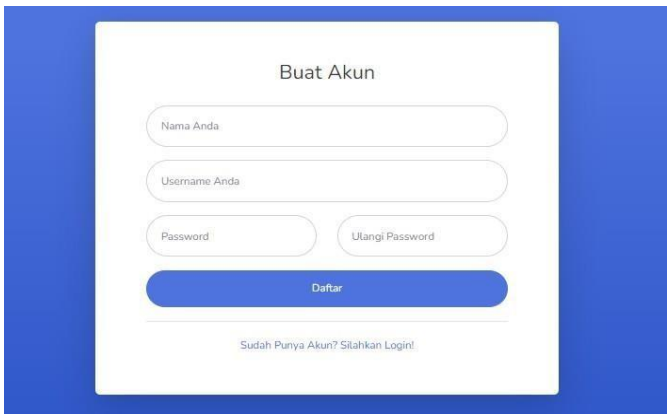

Figure 8. Registration Page

If the user does not have an account, the user will carry out the registration process by entering the username and password they wish to register to open the login portal.

c. Dashboard Admin

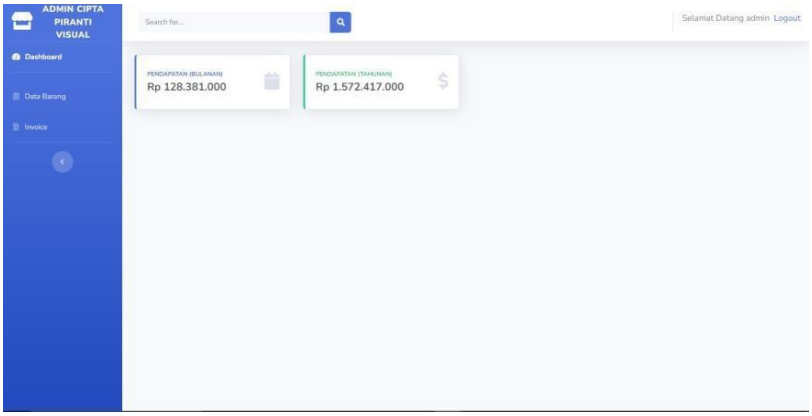

Figure 9. *Dashboard* Admin

On the admin dashboard page, it will display the total income earned within a month, as well as the total annual income.

d. Product Data Page

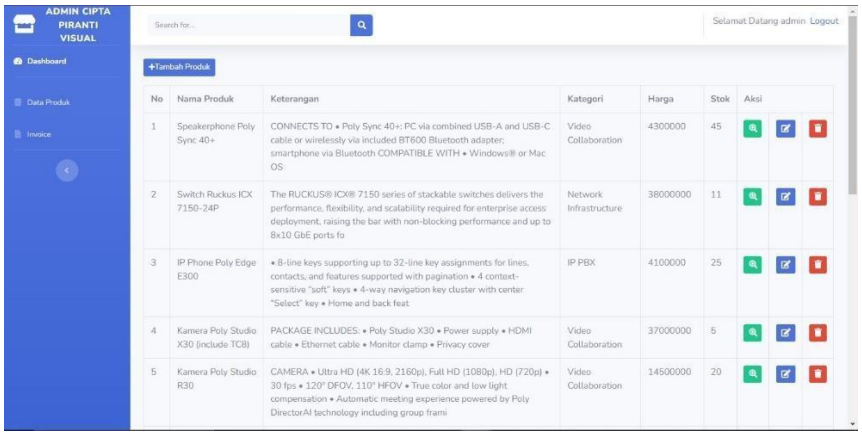

Figure10. *Interface* Product Data

On the product data page, which can only be accessed by admins, you'll find information about which products are available and ready to be marketed. There's a "Buy" button.*delete"* to delete products that are out of stock or no longer on the market. There is a button "*edit"* To change product stock, product descriptions, and even product prices, there's an "add product" button for adding new products to the

market.

e. Order Page

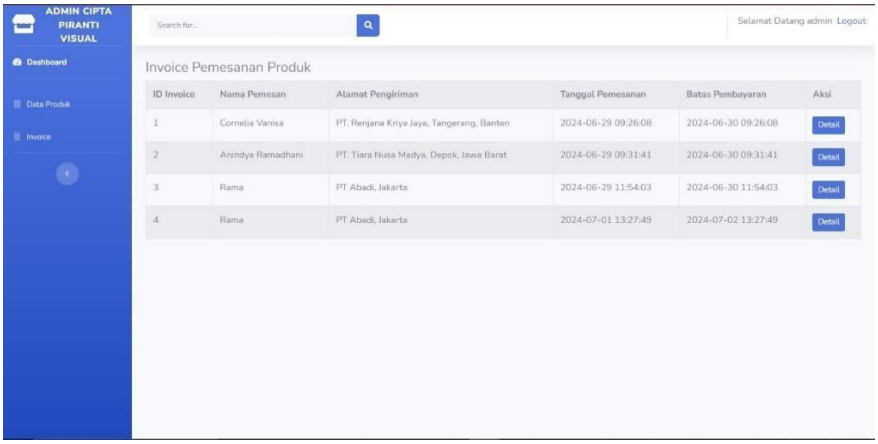

Figure 11. Order Page

On the invoice page, the invoice data that has been entered is displayed. In the "details" button, you can see what products were purchased.

f. Dashboard User

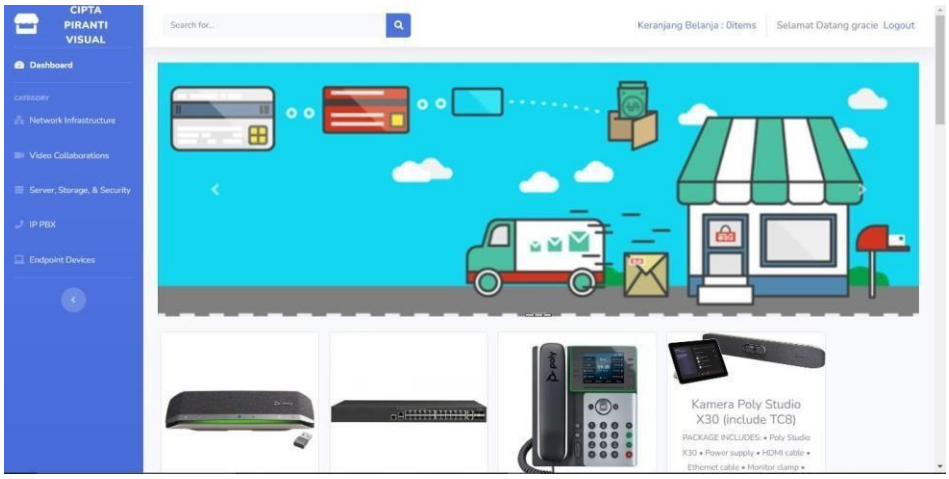

Figure 12. Dashboard User

The user dashboard page contains the necessary information to begin a product search. This includes available product data, a search feature to help users find more specific products, and a shopping cart to check which products they want to purchase. There's also a category feature that allows users to easily search for products based on their desired category. Starting from "*Network Infrastructure*", "*Video Collaborations*", "*Server, Storage,& Security*", "*IP PBX*", And "*Endpoint Devices*".

5. Testing

At the testing stage, web testing is carried out using the testing method.*blackbox*. Method*blackbox* is a method for finding bugs and demonstrating application functionality.

Table 1. Testing Login

Testing	Hope	Results	Conclusion
Fill in the login form using your username and valid password	Displays the dashboard, both user and admin	The results displayed are as desired	Success

Fill in the login form using the wrong username, correct password	Display error alert	The results displayed are as desired	Success
Fill in the login form using the correct username, wrong password	Display error alert	The results displayed are appropriate with what is desired	Success

Table 2. Registration Testing

Testing	Hope	Results	Conclusion
Enter different password data	Display error alert	The results displayed are appropriate with what is desired	Success
Fill out the form, then click register	Failed to click register, redirected to form empty	The results displayed are as desired	Success

Table 3. Order Testing

Testing	**Hope**	**Results**	**Conclusion**
Select product, click add to cart	Displaying the product cart form	The results displayed are as desired	Success

6. Maintenance

In the support section,*software* will be in*publish* through*github*which will be accessible to everyone, making it easier for users or admins to access it without having to install the application first and it is easy to access anywhere.*Website* will be running on various platforms*browser* available, too*website* must be connected to the internet to be able to*running* well. As for the specifications*software* and *hardware* supporters, including:

a. Specifications*Software*

For specifications*software* what is needed is:

- Operating system : Windows 10
- Software Design : Sketch
- Programming language : PHP Framework CodeIgniter
- Database : XAMPP Version 8.1.25

b. Specifications *Hardware*

For specifications*hardware* what is needed is:

- Processor : Intel Core i5
- RAM : 16 GB
- Hard drive : 512 GB

IV. CONCLUSIONS

After going through several stages, starting from design to implementation, several conclusions can be drawn, including:

1. With the presence of the system*web* This can help the employees of PT. Cipta Inovasi Teknologi, in*reach-out* candidate *customer* new.
2. Helping the*customer*, Good *customer* long, or*customer* new in finding solutions to needs*IT* And *Services* quickly and efficiently, without having to wait for the process*indent*.
3. Able to improve*value* PT. Cipta Inovasi Teknologi is becoming increasingly high quality with the presence of*web* This makes PT. Cipta Inovasi Teknologi's business processes much more effective and targeted.

In the future, it is hoped that it can develop*web* This makes it more attractive and functional by adding several necessary features. Strong system security is also required to prevent system data breaches.*website*.

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