



# Designing An E-Commerce Application Using The Web-Based Cross Selling Method (Case Study: Rudang Fashion)

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## ABSTRACT

The development of technology and the rapid flow of data and information spread on the internet require the public to know the latest information. To get this information, in general, people use search engines or search engines that can make it easier to search for information. Some search engines available on the internet utilize web crawlers to obtain the information needed by users. This research developed a web crawler application to retrieve information about prices from two comparison sites, namely the elevenia site and the mataharimall site. The data obtained from the crawling process will be stored in a database which can then be used by users to see price comparisons of the products they are looking for, then users can also see the details of the products they are looking for. This system was developed using the waterfall method and displaying it in a Cross Selling format for the product it was looking for. This research has resulted in crawler applications and systems using cross selling.

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## 1. INTRODUCTION

The world is growing rapidly in information technology and computer technology today. The need for information is increasingly in demand by all levels of society, both ordinary people and intellectuals, this is related to activities carried out by humans which are usually carried out manually and traditionally which will be faster and more precise if carried out with the help of machines, namely computer technology.

Nowadays, the use of the internet related to cyberspace, which will dominate all current public activities in general, will generally turn into a tool for competition between one company and another.

Therefore, web technology on the internet plays a very important role, which is to allow organizations or companies to enter the market in an easy, cheap and without geographical restrictions, everything will be in the so-called cyberspace, the concept is known as OnlineShop which is currently useful in daily life, because it can save time, effort and cost (ICT Journal, Muhammad Ridwan, Iskandar Fitri, Benrahman, 2021).

Competition between one company and another. This will also have a huge impact on every company and the impact on the competition aspect is the formation of an increasingly sharp level of competition that makes companies in this globalized economy make changes continuously, rapidly, radically and simultaneously, so that companies must have the ability to adapt quickly to the changes that occur so that the company will be able to compete with its competitors who are increasingly numerous. many. Toko Rudang Fashion, which is an *online* store that sells clothes in one of the cities in North Sumatra, namely the Deli Serdang Regency area, prioritizes the use of technology which is expected to provide great profits to the company's sales and one type of application of technology in terms of increasing business competition is by utilizing electronic commerce (*e-commerce*) with *the cross selling* method namely a method or strategy to offer additional or complementary products to consumers, cross selling can also be interpreted as an action to encourage purchases of anything related to the main product in marketing various kinds of products or services both in physical and digital form, *the cross selling* method This is also something that is done to encourage consumers to want to buy additional products that are still relevant to the product purchased by the consumer and usually the application of this strategy is not always used for conventional direct sales even in online business.

This strategy is also often found, this encourages e-commerce to run effectively, and this is very important because using the right marketing strategy will have an influence on the back and forth of a company, not only that the company must be ready to face any changes that are happening today. (MARS Journal, Suhesti, Abdul Samad, June 2023).

In addition, the *e-commerce* business has several advantages, including: "can expand the network of business partners, marketing reach becomes wider, physically safe, effective, efficient and flexible, besides that there are also disadvantages in this *e-commerce* business , including: increasing individualism, sometimes causing disappointment and inhumanity" seeing this, the author wants to design a systems that can control the data that will be processed into e-commerce data and they form a web page-based application as an *interface* that can help overcome the complexity of sales so far.

## 2. RESEARCH METHODS

### 2.1. Electronic commerce

Electronic commerce is the purchase, sale, and marketing of goods and services through electronic systems such as television, radio, and computer networks or the internet. Electronic trading includes electronic fund transfers, exchanges and data collection, all organized in an automated management system. Examples of electronic commerce such as Shopee, Lazada, Tokopedia, and others. (ICT Journal, Muhammad Ridwan, Iskandar Fitri, Benrahman, 2021)

### 2.2. Cross-selling

Cross-selling is a strategy to market a product to customers that is related to other products they are buying. Cross-selling is the tendency of buyers of one product to buy another product. Companies can maximize cross-selling by placing two products that customers frequently buy at the same time in a visible place at the same time. (EST, Olson and Shi, 2008) Cross-selling is often cited as a source of competitive advantage for existing businesses and as a source of synergy that justifies acquisitions. This is a strategy to give existing customers the opportunity to purchase additional items offered by the seller. Most times, cross-selling involves offering

goods to customers that complement their initial purchase in some way. The idea behind cross-selling is to gain a larger share of the consumer market by catering to more needs and wants of each customer.

### 2.3. Waterfall Model

Waterfall or can be called the waterfall model is a classic systematic life cycle model in software development or commonly known as software. The structured system development flow starts from Requirement System, System Analysis, System Design, System Implementation and Testing System. This Waterfall model has several structured steps in system development so that it becomes a product that is ready to be used by users. In this model, there are several stages that must be passed, namely:

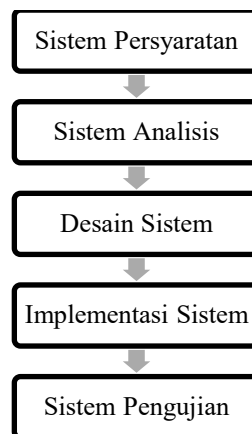


Figure 1. Waterfall Model

### 2.4. Planning System

Because it was less effective than the old system, the author created a new web-based application system. The application of this new system will later make it easier for consumers to see battery products without having to come directly and broadly speaking, the business process of the system to be designed is illustrated with *the usecase diagram* contained in Figure 2.



Figure 2. Web-Based *E-Commerce Diagram*

The overall system display describes how the system works starting from *the login* then the home menu, the buyer is directed to create an account before choosing several products provided on the *Rudangta Fashion* website, *after the product is selected then the user asks for order confirmation* to the admin and continues with payment, then the admin verifies for the next as a report to the leadership.

### 3. RESULTS AND DISCUSSION

#### 3.1. System Process Design

In the system process design is made for convenience in explaining how the system design is made so that it can work, for system design using a flow chart, for more details please see the picture below:

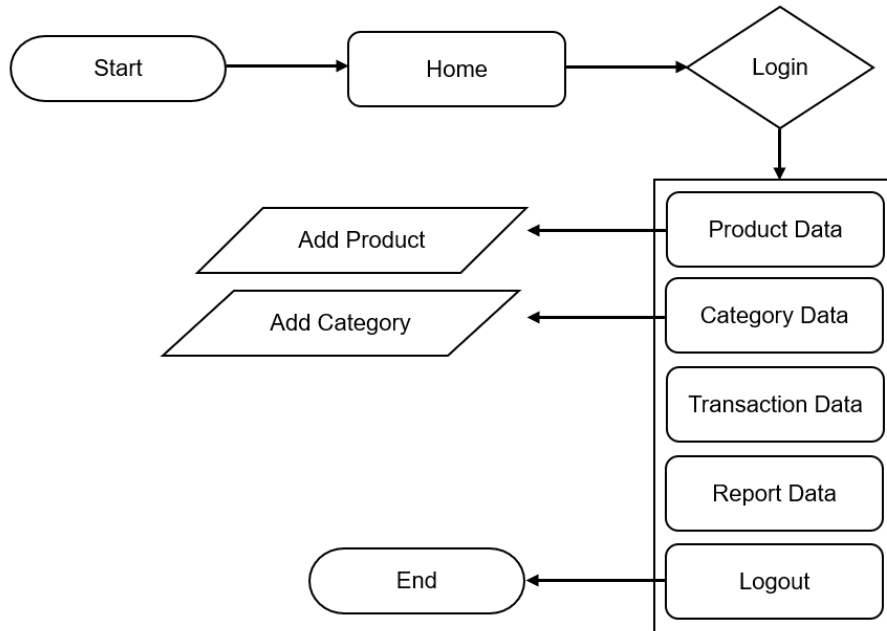


Figure 2. Flow Diagram

### 3.2. System view

#### 1. Home page

Rudang Fashion

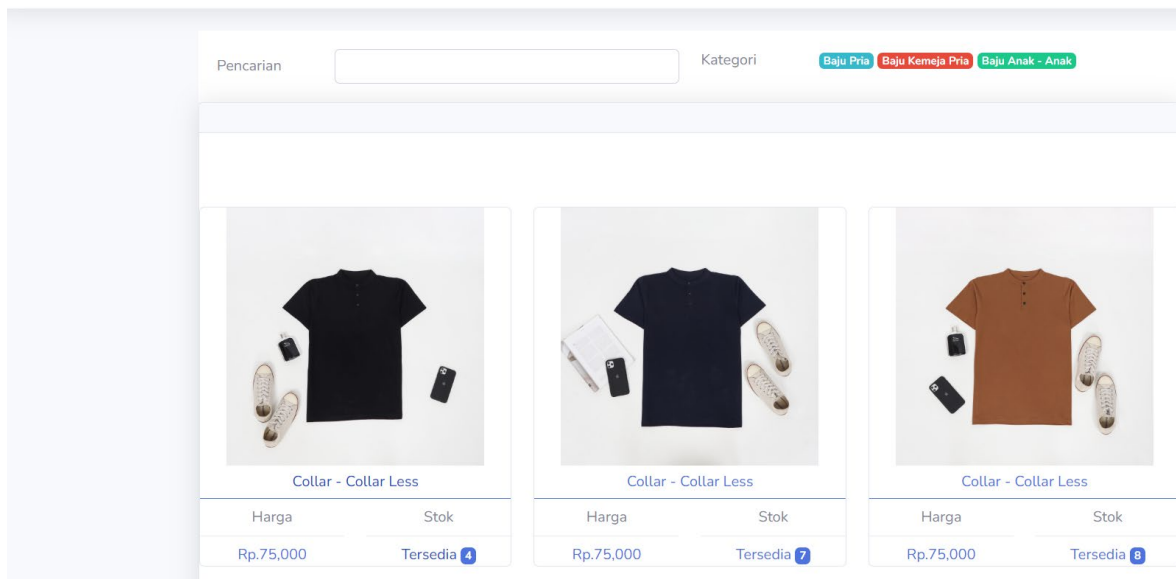


Figure 3. Home page

This display serves as a home page for customers to make purchases, before pressing the buy button, the customer first sees the description of the item purchased, then if the customer has got clear information, then the customer makes a purchase by pressing the buy button.

## 2. Login Page



The image shows a login form titled "Login" with a close button (X) in the top right corner. It contains two input fields: "Username" and "Password". Below the fields is a blue "Login" button.

Figure 4. Login Page

A series of details of the customer login process are described in state steps starting from entering the email, entering the password, if the profile is valid then the system will activate the customer menu, while if it is invalid, then display the error message shown in the image

## 3. Product Data Page









No	Kategori	Produk	Harga	Deskripsi	Stok	Aksi
1	Baju Pria	Collar - Collar Less	Rp.75,000	Kaos Collar Black	4	 
2	Baju Pria	Collar - Collar Less	Rp.75,000	Kaos Collar Navy	7	 
3	Baju Pria	Collar - Collar Less	Rp.75,000	Kaos Collar Golden Brown	8	 
4	Baju Pria	Collar - Collar Less	Rp.75,000	Kaos Collar Grey	9	 

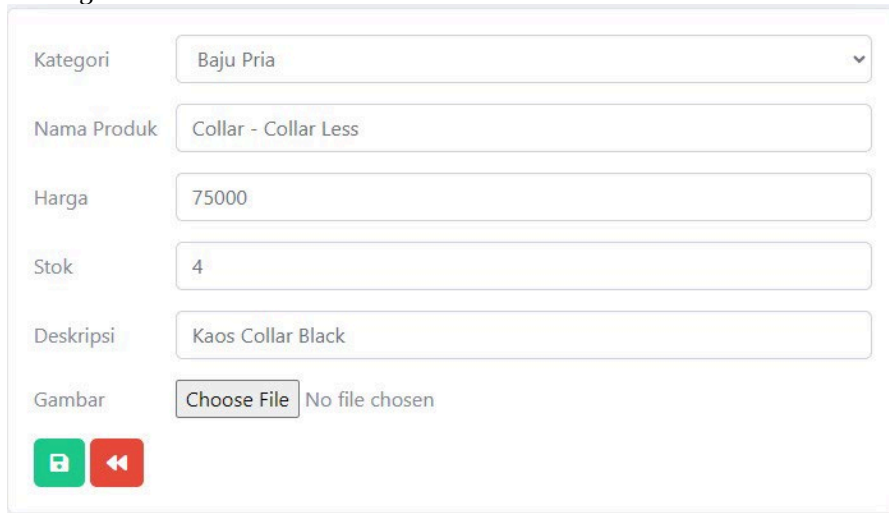
Figure 5. Product Data Page

## 4. Cross selling *method*

The *cross selling* method on this product page data is seen to encourage *users* to buy additional products that are still relevant to what they are buying, this strategy is also not always used for the type of sales of fashion rudangta.

*Cross selling strategy*. When shopping in *e-commerce*, a product will be added to the shopping cart with a menu of related product options, this is like the application of a *cross selling* strategy that aims to make customers add items to the shopping cart.

#### 4. Add Product Pages



Kategori: Baju Pria

Nama Produk: Collar - Collar Less

Harga: 75000

Stok: 4

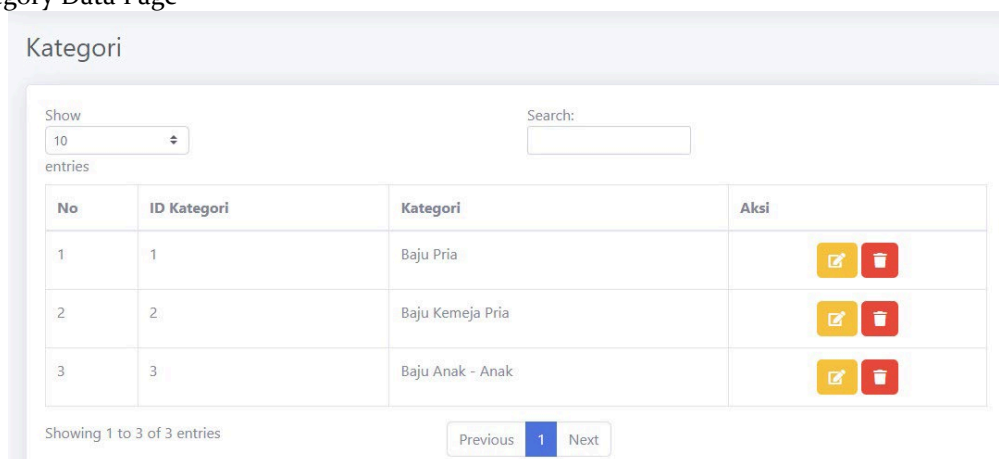
Deskripsi: Kaos Collar Black

Gambar: Choose File No file chosen

Save Cancel

Figure 6. Product Data Page







#### 5. Category Data Page



Kategori

Show: 10 entries

Search:

No	ID Kategori	Kategori	Aksi
1	1	Baju Pria	 
2	2	Baju Kemeja Pria	 
3	3	Baju Anak - Anak	 

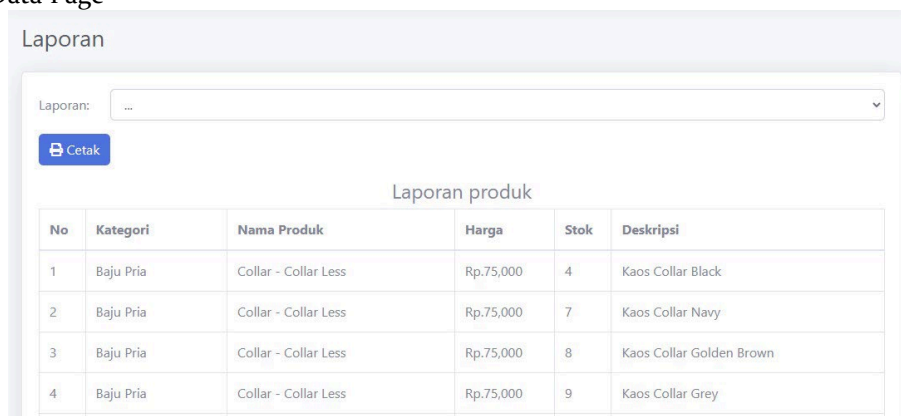
Showing 1 to 3 of 3 entries

Previous 1 Next

Figure 7. Category Data Page

The Product page is the flow of the *cross selling* method so that buyers can buy additional products provided from the admin, and the Category Data page is a series of details of the process of processing product data described in the *state* steps shown in figure 7.

## 7 8. Report Data Page



The screenshot shows a web interface for a report. At the top, there is a header 'Laporan' and a dropdown menu labeled 'Laporan: ...'. Below the dropdown is a blue button with a printer icon and the text 'Cetak'. The main content is a table titled 'Laporan produk' with the following data:

No	Kategori	Nama Produk	Harga	Stok	Deskripsi
1	Baju Pria	Collar - Collar Less	Rp.75,000	4	Kaos Collar Black
2	Baju Pria	Collar - Collar Less	Rp.75,000	7	Kaos Collar Navy
3	Baju Pria	Collar - Collar Less	Rp.75,000	8	Kaos Collar Golden Brown
4	Baju Pria	Collar - Collar Less	Rp.75,000	9	Kaos Collar Grey

Figure 10. Report Data Page

## 6. CONCLUSION

In the Rudang Fashion Shop online store which is engaged in selling clothes in one of the cities in North Sumatra, namely the Deli Serdang Regency area, the implementation of the system has been running in accordance with the design, programming used based on the website and using the cross selling method approach to encourage consumers to buy additional products that are still relevant to the products purchased by consumers and usually the application of this strategy is not always used for types of conventional direct sales even on online businesses. This strategy is also often found, this encourages e-commerce to run effectively, and this is very important because using the right marketing strategy will affect the progress of a company, not only that, the company must be ready to face any changes that are happening today. In the implementation of this system, further improvement is still needed, it is hoped that there will be development to add the latest features to the system.



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