

Implementation of Prototype Method for Developing Website-Based Eyeglass Sales Information System

Galih Surya Wibowo¹, Muhammad Maulana¹, Rizky Setiawan¹, Sheila Fenolia¹, Wisnu Dewi Kusumawati¹, Siti Marwah¹, Winanti¹✉, Andi Sanjaya¹, Sucipto Basuki¹, Nurasih¹, Muhamad Luthfian¹

¹ Universitas Insan Pembangunan Indonesia, Tangerang, Banten, Indonesia
winanti12@ipem.ac.id

Article Info

Article history:

Received February 25, 2025

Revised February 25, 2025

Accepted February 28, 2025

Keywords:

Prototype Method
Information System
Sales
Website

ABSTRACT

Sales of glasses including lenses, cleaning fluids, frames and other supporting products are still carried out conventionally and prospective buyers must come directly to the store. Sales reporting is also still done by recording the results of sales notes in the ledger resulting in frequent recording errors. Current reports cannot be done in real time so they are less efficient and effective. Sales are done by word of mouth and by using WhatsApp status updates with limited reach. An online or digital eyeglass sales system is needed at Optic XYZ so that the reach is wider, buyers do not have to come and reports are fast, precise and accurate and real time. System development using prototype and website-based methods. In order to ensure that the system can be implemented properly and without obstacles, a trial was carried out using the black box testing method involving users in testing. The system was built to overcome sales and reporting problems so that with this sales system it can help buyers and admins and optic parties in sales and reporting. After the system is implemented, in the future a mobile-based eyeglass sales system will be developed at Optic XYZ so that the system continues to develop and follows the latest technological advances.

This is an open access article under the [CC BY-SA](#) license.



Corresponding Author:

Winanti

Universitas Insan Pembangunan Indonesia, Tangerang, Banten, Indonesia

Email: << winanti12@ipem.ac.id>>

1. INTRODUCTION

Sales activity is an important thing in a business, whether it is a service, trade or manufacturing business. The higher the sales level, the greater the profit for a business [1]. Coupled with the current conditions where the majority of companies have utilized information technology in all company activities [2].

Optik XYZ is an eyeglass shop that provides products such as frames, lens boxes, and cleaning fluids. Lenses with various types and according to customer health needs are provided in full. Eyeglass sales at Optic XYZ are still carried out conventionally where buyers must come directly to the store and sales reports are made manually which are recorded in a book so that they are prone to errors, less efficient and effective. Report printing also cannot be done in real time [3].

Sales promotion carried out at optic XYZ is also still limited to word of mouth and using WhatsApp media so that the promotional reach is still limited to friends and colleagues and customers. This makes optic XYZ difficult in marketing and selling glasses and other supporting products.

Currently, the need for glasses is very high, especially for children, teenagers and adults who are very susceptible to eye health. The impact of using cellphones very often every day makes the eyes tired quickly, sore and minus. It is not uncommon for children who already use glasses due to radiation from cellphones. The

sale of these glasses is an activity carried out by optic XYZ for business development to meet consumer needs in the field of eye health and to gain profit for optic owners.

The purpose of this paper is to create a website-based prototype eyeglass sales system. This system is designed to help optics in online or digital sales and printing reports can be done easily and avoid recording errors and can be done in real time. So that sales transactions can be done online without having to come directly to the store.

2. METODE

Data collection in the preparation of this paper was done by conducting direct interviews with optic owners, literature studies by taking references from previous research both from journals and from proceedings [4]. Data collection was also carried out by direct surveys to opticians to ensure that the data used was valid. [5]. More data is obtained from optic owners and optic employees where the desire and need for features are adjusted to user needs. Because the data comes from the source directly, the data is more primary data compared to secondary data [6]. Although data is also obtained from literature studies, namely previous research [7].

The method used in developing this sales system is the prototype method, namely a method that prioritizes communication between developers and users to find out complete user needs and customers play an active role so that time can be faster [8]. The steps taken in developing a glasses sales system using the prototyping method are shown in Figure 1

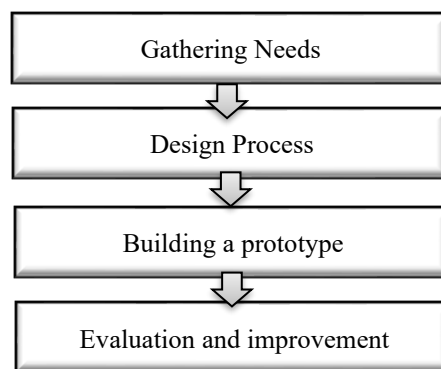


Figure 1 Steps in Prototyping

It begins with the collection of needs in system development, design process, building a prototype and finally conducting evaluation and improvement of the system. With the prototyping method, reports and screen displays are produced with simulated, namely simulating several system workflows using real data and functional, namely simulating system flows using real data [9].

To ensure that the system can be used without any problems, testing is carried out using the black box testing method, where the features in the sales system are tested until a feature is produced that meets user needs.

3. RESULT AND DISCUSSION

The results of implementing the prototype method for a website-based sales system can help stores expand sales and simplify sales transactions and print reports in real time.

3.1. Collecting Requirements

The collection of needs begins with identifying the problem and determining the solution to be carried out. Initial needs and analysis of ideas in system development and determining system components starting from software, hardware, networks and users as end users. Defining input, process, output and database used [9]. The system is developed with PHP Native and MySQL database. Hardware with minimum RAM capacity is required.

3.2. System Design

This stage is carried out by designing and creating a structured system scheme [10]. The system has the main features of product management, online transactions, report management and responsiveness so that this

Implementation of Prototype Method for Developing Website-Based Eyeglass Sales Information System ...
(Galih Surya Wibowo)

application can reach marketing widely, increase the efficiency of the sales process and make it easier to record transaction data digitally and produce fast and accurate reports (real time)

1) Proposed use case

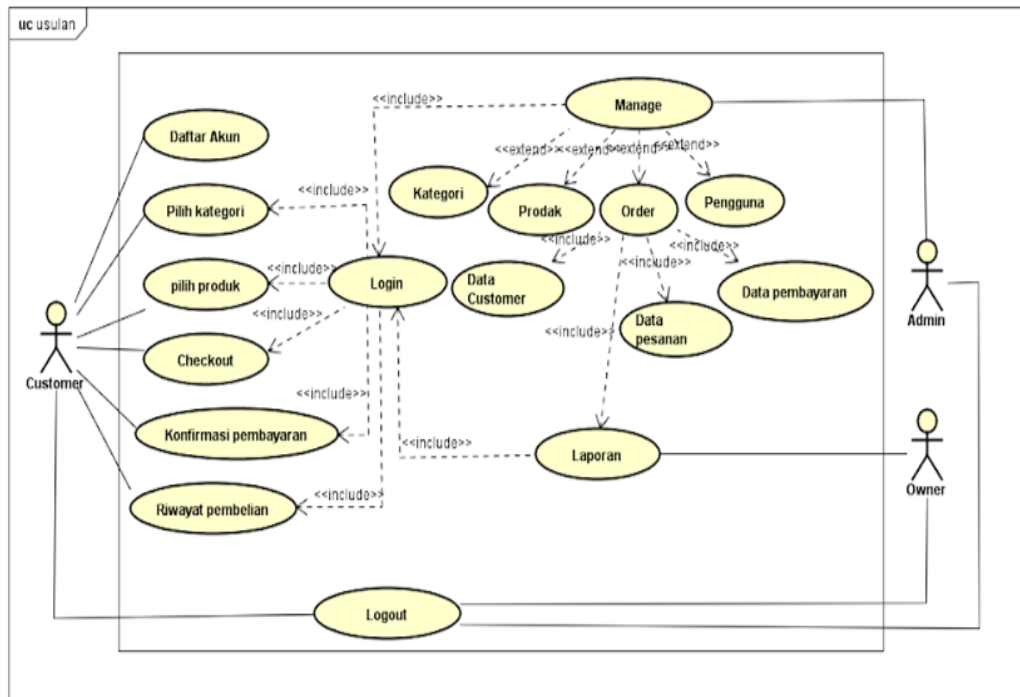


Figure 2 Proposed System Use Case

The proposed system use case consists of three factors, namely customer, admin and owner. Each actor has a function and carries out the process according to the authorization that has been owned.

2) Class Diagram.

Class diagrams describe the structure and relationships between classes in an object-oriented information system.

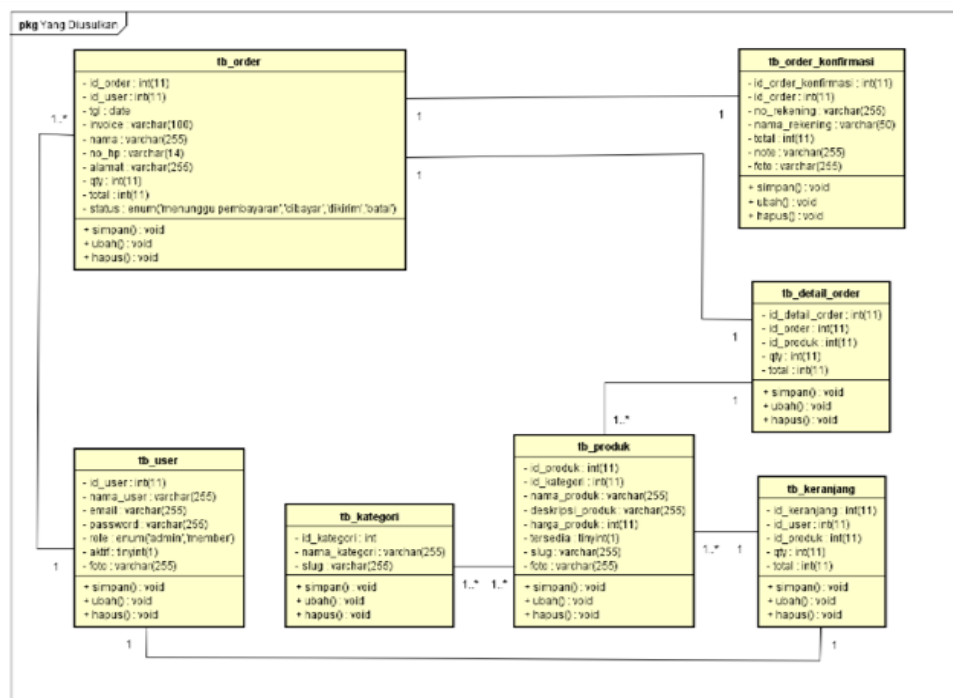


Figure 3. Class Diagram

The class diagram of the eyeglass sales system consists of a user table, order table, order confirmation table, order detail table, category table, product table and basket table. Each table has a relationship of one to one, one to many or many to many as seen in Figure 3

3.3. Building a Prototype

This stage produces several screen displays and reports, both simulated and functional.

1) Registration Menu Display

Figure 4. Registration Menu Display

The registration menu display consists of name, email, password, password confirmation, and click register. This registration menu also displays categories, our social media, and our location.

2) Main Menu Display

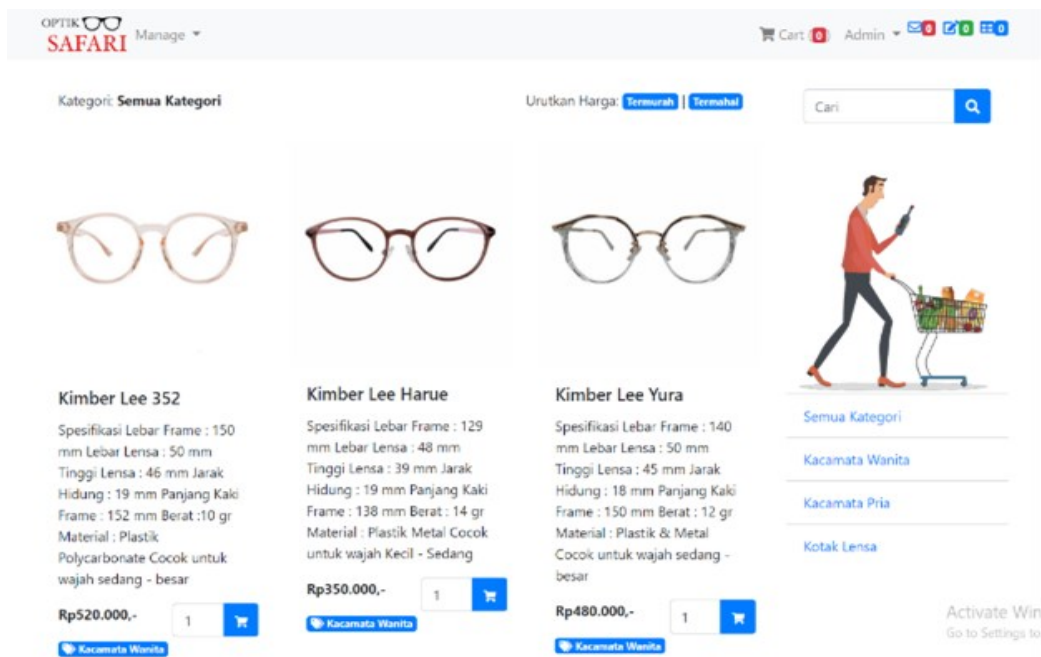


Figure 5. Main Menu View

On the main menu display, all categories of eyeglass products are visible, both women's and men's glasses, search options in price order from the cheapest to the most expensive. Shopping cart, email menu and others.

3) Manage Category Menu Display

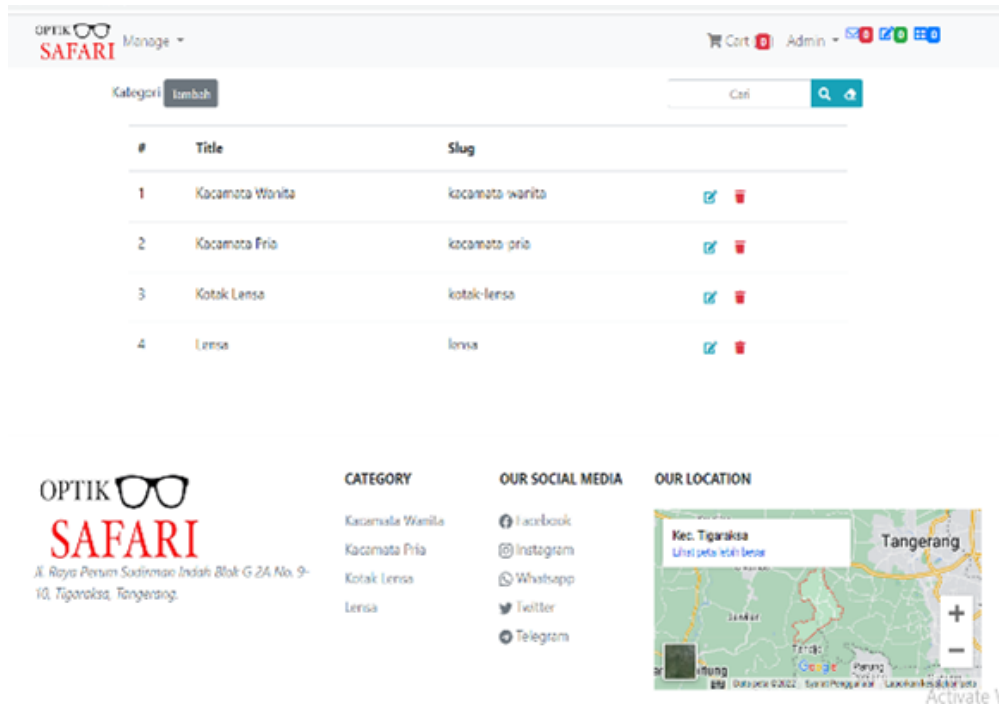


Figure 6. Manage Category Menu Display

The manage category menu display includes adding categories, slugs, add and delete buttons, information about categories, our, social media, and our location.

4) Customer Address Form Menu Display

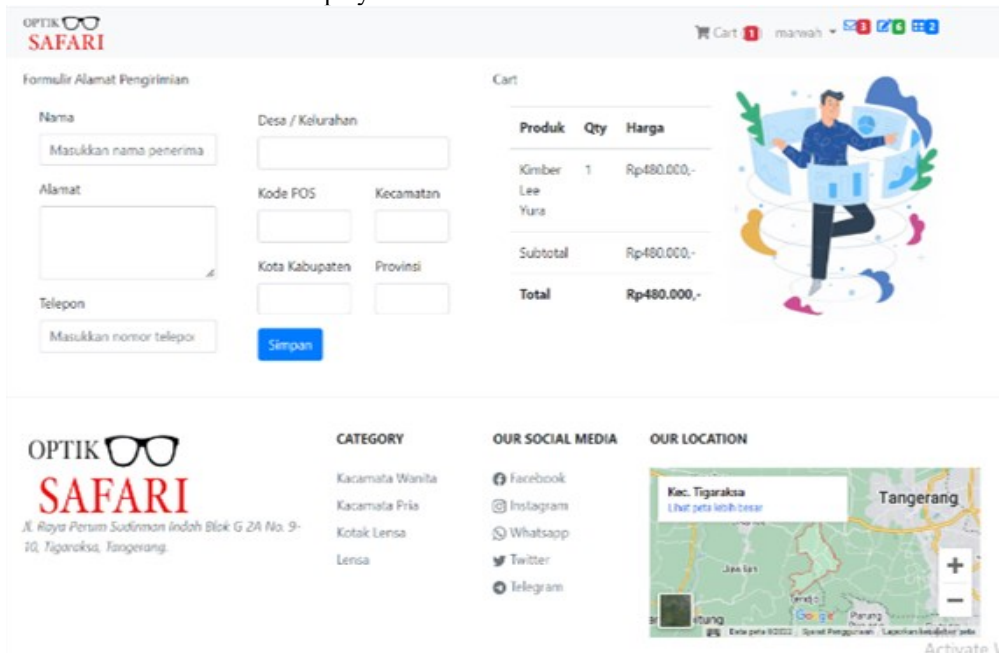


Figure 7. Customer Address Form View

The customer address form display is used for the purpose of shipping goods consisting of name, address, village, city/district, postal code and telephone number. Product, Qty, price and total payment.

5). Payment Confirmation Form Display

OPTIK SAFARI

Cart 0 marwah

Profile

Orders

Transaksi

220220704150154

Dari Rekening a/n

No Rekening

Sebesar

350000

Catatan

Bukti Transfer

Choose File No file chosen

Konfirmasi Pembayaran

Activate V Go to Setting

Figure 8. Payment Confirmation Form View

The payment confirmation form display consists of transaction features, from account a/n, account number, amount (nominal rupiah), and notes.

6). Report Menu Display

OPTIK SAFARI Manage

Cart 0 Admin

Order

Cari

No	Pengguna	Nomor	Tanggal	Total	Status
1	mukti	#320220706203245	06/07/2022	Rp350.000,-	Menunggu Pembayaran
2	mukti	#320220706202729	06/07/2022	Rp350.000,-	Menunggu Pembayaran
3	marwah	#220220704150154	04/07/2022	Rp350.000,-	Dibayar
4	marwah	#220220704195332	04/07/2022	Rp350.000,-	Lewat batas pembayaran
5	marwah	#220220703171426	03/07/2022	Rp700.000,-	Lewat batas pembayaran
6	marwah	#220220702124127	02/07/2022	Rp1.030.000,-	Dikirim
7	Admin	#120220701201819	01/07/2022	Rp520.000,-	Dibatalkan
8	mukti	#320220701202834	01/07/2022	Rp500.000,-	Dibayar
9	mukti	#320220701210322	01/07/2022	Rp300.000,-	Dibayar
10	marwah	#220220629002102	29/06/2022	Rp1.600.000,-	Dibayar

Lihat laporan per tanggal

Dari tgl: mm/dd/yyyy Sampai tgl: mm/dd/yyyy

Lihat

Cetak laporan per tanggal

Dari tgl: mm/dd/yyyy Sampai tgl: mm/dd/yyyy

Cetak

1 2 3

Activat

Figure 9. Report Menu View

The report menu display consists of features number, user, transaction number, transaction date, total, and transaction status. From this report menu, users can view and print reports in real time.

3.4. Evaluation and Improvement

Evaluation is carried out to determine to what extent the system can be used by users. [11]. System testing is carried out using the black box testing method to ensure that the features are in accordance with user needs. System testing involves prospective users until a truly valid and successful system is produced [12].

Table 1 Validation with Black Box Testing method

Input	Process	Output	Results
Click Register	Enter the registration menu	Account registration	success
Click Login	Enter Login Menu	Login to the system	success
Click Optic XYZ	Enter Main Menu	Show Main Menu	success
Click Category	Enter the Category Menu	Category Menu View	success
Click Address Costomer	Log in and input customer address	Customer Address View	success
Click Confirm payment	Enter payment confirmation	Payment has been made	success
Click on report	Enter the report view	Report printed	success

The results of testing with black box testing based on the existing features were all declared successful so that the system is ready to be used.

4. CONCLUSION

The eyeglass sales system that was initially done manually or conventionally was overcome with a website-based eyeglass sales system. The system was built based on a website using the prototype method and system testing using black box testing. With this website-based sales system, the problems that occurred at optic XYZ have been resolved. The system was developed with features that are easy to use and in accordance with user needs

REFERENCES

- [1] D. Alfiansah, S. Basuki, Riyanto, and Jumiran, "PENGEMBANGAN APLIKASI PENJUALAN BERBASIS WEBSITE DENGAN MENGGUNAKAN METODE SPIRAL PADA TOKO XYZ DEVELOPMENT," *IJIS-Indonesia J. Inf. Syst.*, vol. 4, no. April, pp. 69–76, 2019, [Online]. Available: <https://media.neliti.com/media/publications/260171-sistem-informasi-pengolahan-data-pembeli-e5ea5a2b.pdf>.
- [2] A. Fitriyoka, B. Anjeli, D. Setiawan, M. Ikhsan, R. A. Lestari, and B. Tiara, "Implementasi Metode Agile Untuk Aplikasi Penjualan Pempek Ikan Tengiri Pada Toko XYZ," no. 1, pp. 2–6, 2021.
- [3] W. Winanti, S. Basuki, N. Supiana, N. Wiyono, Sukriyah, and Jainuri, "Pembuatan Digital Marketing sebagai Upaya Peningkatan Promosi Penjualan Produk Furniture Drum Bujana Tangerang," *J. Abdimas PHP*, vol. 7, no. 1, pp. 211–217, 2024.
- [4] W. Winanti *et al.*, "Sistem E-Tugas Berbasis Prototype sebagai Manajemen Tugas dengan Metode Topsis," *Ipsikom*, vol. 12, no. 2, pp. 26–32, 2024.
- [5] N. S. Az-zahra, "Implementasi Digital Marketing Sebagai Strategi Dalam Meningkatkan Pemasaran UMKM," *NCOINS Natl. Conf. Islam. Nat. Sci.*, pp. 77–88, 2021.
- [6] F. E. Nugroho, "Perancangan Sistem Informasi Penjualan Online Studi Kasus Tokoku," *Simetris J. Tek. Mesin, Elektro dan Ilmu Komput.*, vol. 7, no. 2, p. 717, 2016, doi: 10.24176/simet.v7i2.786.
- [7] E. Fernando, S. Basuki, and B. Suseno, "E- Learning Culinary Community Berbasis Website Menggunakan Metode Prototype," *Indones. J. Inf. Syst.*, vol. 7, no. 2, pp. 1–15, 2024.
- [8] R. Presman, *Software Quality Engineering: A Practitioner's Approach*, vol. 9781118592. 2014.
- [9] D. Purnomo, "Model Prototyping Pada Pengembangan Sistem Informasi," *JIMP-Jurnal Inform. Merdeka Pasuruan*, vol. 2, no. 2, pp. 54–61, 2017.
- [10] Y. A. Singgalen, "Perkembangan Riset Desain Sistem Informasi Menggunakan Pendekatan Terstruktur : Sitematic Literature Review," *J. Inf. Syst. Informatics*, vol. 3, no. 4, pp. 557–581, 2021, doi: 10.51519/journalisi.v3i4.205.
- [11] Ruliyana, Adiyanto, and Winanti, "Analisa dan perancangan sistem informasi it helpdesk berbasis website pada departemen mis pt xyz," *Ipsikom*, vol. 5, no. 2, pp. 1–14, 2023, [Online]. Available: <https://www.ncbi.nlm.nih.gov/books/NBK558907/>.
- [12] Y. Juliyana, J. Suwita, and Winanti, "Pengembangan Aplikasi Pengelolaan Data Warga Berbasis Website Yoga," *IPS*, vol. 12, no. 1, pp. 53–60, 2024.