Journal of Social Research

P-ISSN: 2827-9832
E-ISSN: 2828-335x
http://ijsr.internationaljournallabs.com/index.php/ijsr

# DESIGN OF A WEBSITE-BASED POINT-OF-SALE INFORMATION SYSTEM AT "VAPEBOSS" VAPE SHOP USING THE WATERFALL METHOD

**Hamid Maulana Hasbi[1*], Muhammad Rozahi Istabul[2**]**
[1,2]*Universitas Widyatama Bandung*
[*] *hasbi.maulana@widyatama.ac.id* [**] *rozahi.istambul@widyatama.ac.id*

## ABSTRACT

Vapebos is a one-stop vape shop catering to vaping enthusiasts, offering a wide array of products essential for vapers or electronic cigarette users. Their inventory spans devices like Mods, Atomizers (RDA), a diverse range of flavored liquids, and various accessories. Presently, Vapebos employs a manual transaction system where each sale is noted in a physical ledger. However, this approach poses potential issues, such as the loss of transaction records or damage due to exposure to water. To tackle these challenges and ensure smoother operations, the store is transitioning to a modernized Point of Sale (POS) system. The chosen methodology for this transformation is the waterfall-based approach. By employing the waterfall model, the authors are developing a POS application that streamlines Vapebos' transaction processes. This system promises enhanced efficiency and accuracy, reducing the likelihood of data loss or errors that might occur with the manual method. This endeavor not only aims to simplify day-to-day transactions but also contributes to maintaining a secure and organized record-keeping system. The adoption of a POS system aligns with Vapebos' objective of providing seamless service to its customers and safeguarding its business operations against potential setbacks. Through this systematic upgrade, Vapebos is poised to offer a more reliable and efficient shopping experience for vape enthusiasts while ensuring the integrity of their transaction records.

***Keywords:*** *point of sale, website, PHP*



## INTRODUCTION

Every business actor definitely needs a tool or a system to be able to help and expedite the running of his business, the rise of business actors with many buyers will definitely find it difficult to run their business operations without tools, the author makes a solution for the smooth running of business actors, especially at vape stores "VapeBoss", the form of the system that the author will build at the VapeBoss vape store is the Point of Sale System or it can also be called the "POS Application", this system is designed to facilitate sales, because, in this Point of Sale system, there are cashier features and sales transactions buy, other than that in designing this system the author embeds a transaction history feature in order to prevent misunderstandings in transactions (Hartati & Santoso, 2023).

Over time, with the many technological developments that are so rapid in their development, it is felt to be very useful for every industry, or company, which at any time processes very important data and many, with today's technology making it efficient and effective in doing everything that is done in any field of business, for example, the vape shop Vapeboss, where every sales operation requires a transaction tool such as a Point of Sale System(Maulana et al., 2023).

The Point of Sale system is a cashier tool that is commonly applied by business actors such as minimarkets to help process sales transaction data, with this system it can provide the best and most efficient service to customers at vape store vape-boss stores (Sugihartono, et al.

2015). The author takes an example as activities in calculating prices purchased by customers will be faster and more effective.(Herdiansyah, Pratama, 2021)

For now, many Point of Sale System service providers are the same as the system that the author will design, but these service providers set very high prices to be able to use the services they provide, for example, the Moka POS application, designed by Haryanto Tanjo and Grady Laksmono in late 2014, the naming of Moka was an acronym taken from the word "Mobile Cashier" (Liliyah, 2018).

## METHOD

In making this point of sale system, the author designed the waterfall method.

Waterfall is the simplest SDLC model. This model is well suited for software development, with fixed or unchanging specifications (Ismai, 2021; Shalahuddin & Rosa, 2006).


Figure 1. Waterfall Model

### Definition of Information Systems

Information System is a mechanism within an organization that connects various needs in daily transaction processing, supports operations, has a managerial dimension, and supports the strategic activities of the organization. In addition, this system also provides the necessary reports for related external parties (Jurnal et al., 2018).

### POS (Point of Sale) Application

The POS (point of sale) system is an application used in minimarkets or shops to manage data processing such as purchases, retail sales transactions, and return transactions. All of these aspects have important significance in the operation of the business (Gerung, 2022; Sains dan Teknologi et al., n.d.).

### XAMPP

XAMPP is an AMP installation package (Apache, MySQL, and PHP) that can be easily applied to computer devices that don't have a server yet. This application allows users to try the server programming language and database server that is in it (Yolan & Mansuri, n.d.).

### PHP

"PHP (PHP: hypertext preprocessor) is a programming language used to change the basic code of a program into a machine that can be run by a computer that is on the server side and connected to HTML." (Supono & Putratama, 2016).

Hypertext Preprocessor (PHP) is a programming language that functions to create dynamic websites that allow interaction with visitors or users (Wardana, 2016).

### MySQL

MySQL is a database server for accessing data that has been entered into a table consisting of several rows and each row contains several columns (Suehring, 2002).

**Website**

Web or website is software that has the function of displaying data or documents so that it can be accessed by users who are connected to the internet (Destiningrum & Q. J, 2017).

**Research Type**

In carrying out data collection used in Point of Sale Information System Design, the authors use this type of research using the waterfall method, which will be applied to the design of a Web-based POS or Point Of Sale Information System, which will be applied to Vapebos Vape Shops.

## RESULTS AND DISCUSSION

**Use Case Diagrams**

Reported on the Dicoding.com page, a use case diagram is one of the various types of UML (Unified Modeling Language) diagrams that describe the interaction relationship between the system and actors. Use Case can describe the type of interaction between the system user and the system (Dicoding Intern, 2021).

***Login***

The admin or cashier must log in first so they can enter the Transaction page.

***Transaction page***

On the transaction page, there is a behavior where sales occur, between the cashier and the buyer.

***Product page***

The product page is a page for adding product data which will later be stored in data in MySQL so that it can be processed for transactions.

***Report page***

On the report page, there is a display of transaction data information

***Settings page***

Admin can manage the POS application on the settings page

***Exit button***

The admin or cashier on duty can Log Out or exit the Point of Sale Information System after the transaction is complete.

**Entity Relationship Diagram (ERD)**

ERD or Entity Relationship Diagram, is a diagram that interprets data structures and relationships between existing data in the MySQL database.

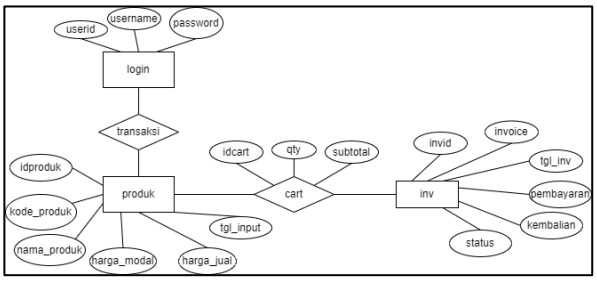



Figure 2. Entity Relationship Diagram

## System Implementation

### *Login Page*

The login page is intended for the admin or cashier on duty, so that you can enter the point of sale or cashier transaction page.

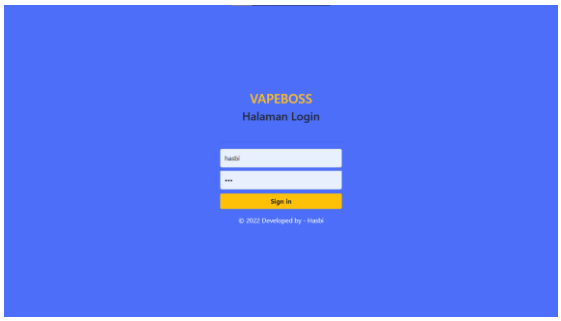



Figure 3. Main page

### *Transaction Main Page*

On the transaction page, the admin or cashier on duty can enter the product purchased by the customer to get it, where the cashier must enter the product code so that later the system will automatically display the name and price for each product.

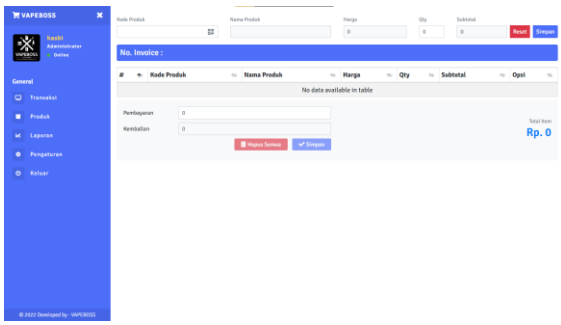



Figure 4. Transaction page

### *Product Pages*

Product pages are product data sold at vapebos shops, each product has attributes such as product code, product name, product capital price, product selling price, and product input date.

Admin can also change or delete product data if there is an error.

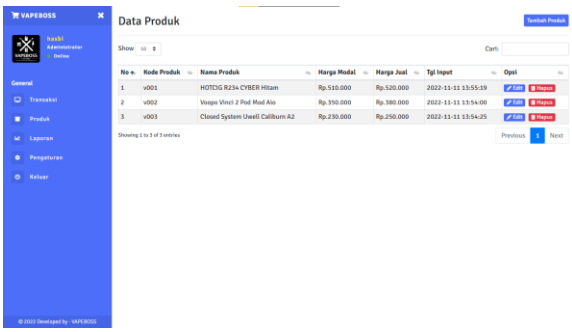



Figure 5. Product Data Page

### *Report Page*

The report data page displays products that have been sold and displays revenue or profit data obtained by the Vapebos vape shop.

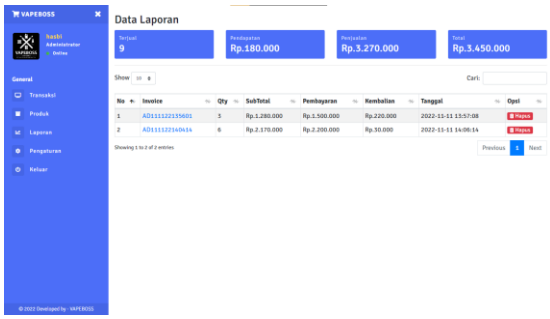



Figure 6. Sales Report Data Page

***Settings Page***

On this page the admin can change the shop profile as well as the user or cashier on duty so that he can enter the application page.

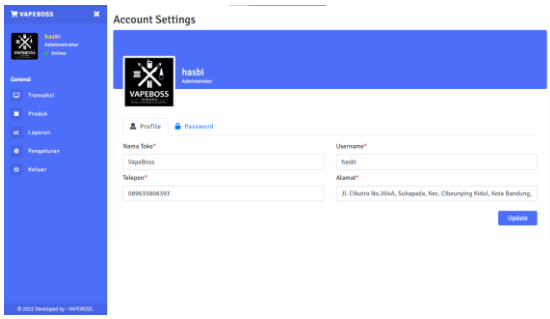



Figure 7. Settings Page

***Exit button***

Is a button that functions to exit the application after its use is complete.

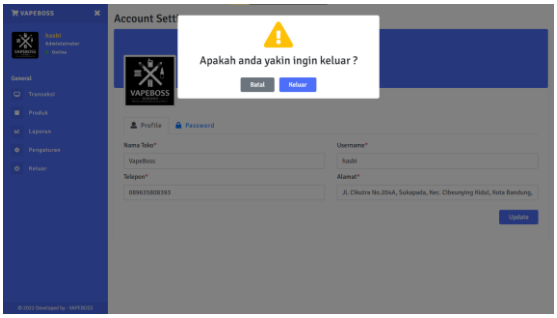
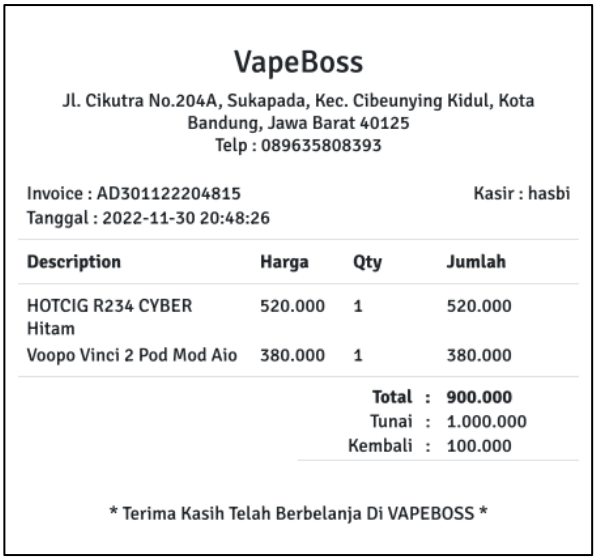



Figure 8. Exit button

***Output of the point of sale system***

The output of the system that the author built is a note or proof of transaction between the seller and the buyer, the note is valid proof that a transaction has occurred which will later be automatically stored in the MySQL database, for storing data purposes which will be useful in the future.



VapeBoss

Jl. Cikutra No.204A, Sukapada, Kec. Cibeunying Kidul, Kota Bandung, Jawa Barat 40125
Telp : 089635808393

Invoice : AD301122204815 Kasir : hasbi
Tanggal : 2022-11-30 20:48:26

| Description | Harga | Qty | Jumlah |
|---|---|---|---|
| HOTCIG R234 CYBER Hitam | 520.000 | 1 | 520.000 |
| Voopo Vinci 2 Pod Mod Aio | 380.000 | 1 | 380.000 |

Total : 900.000
Tunai : 1.000.000
Kembali : 100.000

* Terima Kasih Telah Berbelanja Di VAPEBOSS *

Figure 9. Transaction note

## CONCLUSION

The development of a web-based point of sale system using the BlackBox method allows the completion of all processes, regardless of whether the process runs successfully as expected or not. Testing is done by entering null data into each field or only the last field, followed by entering empty data.

According to the results of tests conducted on point-of-sale systems, every available feature now operates safely, legally, and fit for its intended purpose. And if there are empty fields, the system will respond with "Please fill out this field". This shows that the point-of-sale system is ready to use and any problems can serve as a guide for further research.

## REFERENCES

Destiningrum, M., & Q. J, A. (2017). Sistem Informasi Penjadwalan Dokter Berbassis Web Dengan Menggunakan Framework Codeigniter (Studi Kasus: Rumah Sakit Yukum Medical Centre). *Jurnal Teknoinfo*, 30–37.

Dicoding Intern. (2021). *Contoh Use Case Diagram Lengkap dengan Penjelasannya*. Https://Www.Dicoding.Com/Blog/Contoh-Use-Case-Diagram/.

Gerung, D. A. J. (2022). Perancangan Sistem Informasi Point of Sales Berbasis Website pada Toko Arpan Electric. *Blend Sains Jurnal Teknik*, *1*(2). https://doi.org/10.56211/blendsains.v1i2.137

Hartati, & Santoso, T. (2023). Perancangan Sistem Informasi Penjualan Frozen Food Berbasis Web Pada Toko Mentari Store Jakarta Timur. *Jurnal Riset Sistem Informasi Dan Teknik Informatika (JURASIK)*, *8*.

Herdiansyah, Pratama, O. (2021). Perancangan Sistem Informasi Point of Sale Berbasis Website pada Toko Azam Grosir dengan Metode Waterfall. *Jurnal Informatika Universitas Pamulang*, *6*(2).

Ismai. (2021). Perancangan Sistem Informasi Point of Sale Berbasis Website pada Toko Azam Grosir dengan Metode Waterfall. In *Jurnal Informatika Universitas Pamulang* (Vol. 6, Issue 2).

Jurnal, H., Hasbiyalloh, M., & Jakaria, D. A. (2018). Aplikasi Penjualan Barang Perlengkapan Hand Phone Di Zildan Cell Singaparna Kabupaten Tasikmalaya. *JUMANTAKA*, *1*(1).

Liliyah, A. (2018, September 17). *Kisah Haryanto dan Grady Bangun Moka*. Https://Swa.Co.Id/Swa/Trends/Kisah-Haryanto-Dan-Grady-Bangun-Moka.

Maulana, Y., Rosalina, V., & Siswanto. (2023). Implementasi Customer Relationship Management Berbasis Web Pada Toko Usaha Digital Printing. *ProTekInfo(Pengembangan Riset Dan Observasi Teknik Informatika)*, *10*(1). https://doi.org/10.30656/protekinfo.v10i1.6546

Sains dan Teknologi, J., Gede Surya Cipta Nugraha, P., Wayan Wardani, N., & Wayan Sukarmayasa, I. (n.d.). *RANCANG BANGUN SISTEM INFORMASI SOFTWARE POINT OF SALE (POS) DENGAN METODE WATERFALL BERBASIS WEB*.

Shalahuddin, M., & Rosa, A. S. (2006). Pemrograman J2ME belajar cepat pemrograman perangkat telekomunikasi mobile. *Informatika*.

Suehring, Steve. (2002). *MySQL bible*. Wiley Pub.

*Sugihartono, J., Satoto, K. I., & Widianto, E. D. (2015). Pembuatan Aplikasi Point of Sale Toko Cabang Perusahaan Torani Menggunakan Framework CodeIgniter. Jurnal Teknologi dan Sistem Komputer, 3(4), 445*-. (n.d.).

Supono, & Putratama, V. (2016). *Pemrograman WEB dengan menggunakan PHP dan framework codeigniter / Supono, Vidiandry Putratama*. 203–204.

Wardana. (2016). Aplikasi Website Profesional dengan PHP dan jQuery. *PT. Elex Media Komputindo*.

Yolan, & Mansuri. (n.d.). *Sistem Informasi Pariwisata Propinsi Nangroe Aceh Darussalam Berbasis Web*. *3(4), 445*-.

***Book***

Setiadi, Elly M., dan Usman Kolip, *Pengantar Sosiologi Pemahaman Fakta dan Gejala Permasalahan Sosial; Teori, Aplikasi dan Pemecahannya* (Jakarta: Kencana Prenada Media Group, 2011)

***Journal***

Masruri, Ulin, 'Pelestarian Lingkungan dalam Perspektif Sunnah', *At-Taqaddum*, 6.2 (2014),411http://journal.walisongo.ac.id/index.php/attaqaddum/issue/view/ 2014

***Thesis and Disertation***

Ingram, R. J., 'Historical Drama in Great Britain from 1935 to the Present' {unpublished doctoral thesis, University of London, Birkbeck College, 1988}

***Articles in Nespapers and Magazines***

Schmidt, Michael, 'Tragedy of Three Star-Crossed Lovers', *Daily Telegraph*, 1 February 1990

***Online database***

Bach, Kent, 'Performatives', in *Routledge Encyclopedia of Philosophy* <http://www.rep.routledge.com> {accessed 3 October 2001}

***Digital and social media***

Dominato, Gabriel, *Morceaux de conversation avec Jean-Luc Godard*, online video recording, YouTube, 10 January 2013, <https://www.youtube.com/watch?v=_XcuHub-S8o> {accessed 10 October 2017}

***Interview***

Sinangguli, Sinaga (Leader community), *Interview***,** {Sunday, 16 Februari 2017}