

DESIGN OF POINT OF SALES (POS) APPLICATIONS AT THE TOSCA SHOP USING THE WATERFALL METHOD

Reynold P. J. Vigeleyn Nikijuluw¹ Daniel Makatita²

^{1,2}Informatic Engineering, Politeknik Negeri Ambon
Email : rvnikijuluw@gmail.com, adanwattilete@gmail.com

ABSTRACT

Kedai Tosca is a culinary business place that has quite a lot of visitors. Kedai Tosca has problems with the sales transaction system and data processing of sales transaction reports because they have not utilized the Point Of Sale (POS) system. The cashier's role is still quite simple, such as the transaction process which is still manual which is not done automatically and slows down sales transactions and transaction data processing. The POS designed and built aims to record sales transactions so as to help improve the performance of operational activities and simplify the service process. This system is capable of managing sales transaction data based on specified dates, making it easier to manage sales so as to avoid the risk of errors in financial calculations. This system can also carry out data storage processes so that report generation can run effectively and efficiently.

This system was built using the programming language PHP and MySQL as its database and uses the SDLC method with the Linear Sequential Model or what is commonly called the Waterfall Model. This system can be used by Tosca Cashiers and Shop Owners in facilitating the buying and selling process and processing of Tosca Shop data properly, starting from available Menu Data, Sales Report Data, Printing menu data reports and sales reports to processing sales transactions and printing sales receipts automatically. directly quickly and computerized. For further research it is necessary to add a payment system using DANA, OVO, GoPay; calculating menu and material stock as well as Adding Features to be able to see the menu display in the transaction process

Keywords: Cashier, Point Of Sale, PHP and MySQL, Waterfall Model

INTRODUCTION

The development of technology in today's computer-based digital era has grown so rapidly, so many technologies have been developed today with various benefits that can facilitate humans in carrying out tasks and work. As is the case with the development of information system technology which is so influential on an organization or company, where it will facilitate a job that requires a fast and short time in data processing as well as meeting the need for fast presentation of information which in this case is on processing sales transaction data using the Point Of Sale (POS) system.

POS which stands for Point of Sales means the point or time and place where the transaction is made. At the point of sales, the seller can calculate transactions, prepare invoices for consumers. The POS system makes it easier for sellers to serve transactions and is a more modern form of cash register. Through the POS system, sellers can also record orders to print receipts more easily, even accessible through applications on tablets or smartphones. Kedai Tosca is a business entity engaged in

the culinary field and has 2 branches in the Ambon city area. One of them is located in the OSM area (Indomaret Front).

The problems that occur in the process of processing sales transaction data by cashiers in Kedai Tosca who still use a manual system, namely by handwriting in the sales transaction process, therefore it is considered to hamper the duties of the cashier in the process of processing sales transaction data, especially with many buyers allowing things to happen such as errors in entering sales transaction data and losing sales transaction data. Some other obstacles include the process of making reports for daily or monthly transaction data which takes a long time, so that the impact slows down the performance of making financial data reports. Therefore, the solution that can be offered is to create a system that can facilitate the performance of cashiers to make it easier and faster and more effective in terms of managing sales transaction data and data storage that is more secure and safe.

Based on the problems and obstacles experienced above, the authors will build a system that is raised into thesis research entitled "Design of Point Of Sale (POS) Application at Kedai Tosca" which is expected to help make it easier for the cashier of Kedai Tosca in managing sales transaction data to be faster and more effective.

THEORETICAL FRAMEWORK

Website

A website is a page of information provided via the internet so that it can be accessed worldwide as long as it is connected to the internet network. Website is a component or collection of components consisting of text, images, animated sound so that it is more of an interesting information media to visit. To build a more advanced website, it is also required to provide other supporting elements, including: domain name, web hosting, programming language, website design, and website publication. Ahmad Fadel, (2018) in (Reni Haerani & Robiyanto, 2019)

System

According to Azhar Susanto (2013) in (Muhdar Abdurahman & Mudar Safi, 2018) The system is a collection / group of sub-systems / parts / components of anything physical or non-physical that are interconnected with each other and work together harmoniously to achieve a certain goal.

Information

According to Agus Mulyanto (2009) in (Muhdar Abdurahman & Mudar Safi, 2018) Information is data that is processed into a form that is more useful and more meaningful to those who receive it, while data is a source of information that describes a real event.

Data Processing

Data processing according to (Indah Lestari, 2019) is an activity carried out using input in the form of data and producing useful information as planned.

Internet

The Internet (Interconnected Network) is a computer network that connects networks globally, the internet can also be called a network in an extensive network "Sibero (2013) in (Supriyanta & Idzni Masturah, 2019)

HTML

HTML stands for Hyper Text Markup Language which is the basic programming language in website developers, HTML consists of Head, Body and inside it there are TAG and Attibute, although it is said to be a programming language, HTML cannot be said to be a programming language because HTML does not have things that are

needed by programming languages, namely logic, HTML only provides output, therefore HTML is likened to the foundation or structure of the Web and the programming languages are PHP and Javascript. (Adnyana 2019) in (Marlina & Mansur, 2021)

PHP

PHP is a script-shaped language that is placed on a new server and then processed. Then the processing results are sent to the client's web browser. This programming language is specifically designed to form a dynamic web. This means that PHP programming can form a display based on current requests, for example a page displaying a guest list. The page will always change following the amount of guest data that has filled out the guest book. (Rubiati, 2018) DI (Rahmad Kurniawan & Septedian Marhamelda, 2019)

Point Of Sales

Point of Sale (POS) is an information system that allows for transactions, which also includes the use of cash registers. In the scope of POS, a cash register does not stand alone but includes supporting software and other devices. The POS system does more than just buying and selling transactions, it can also integrate accounting calculations, goods and stock management, employee payroll modules, accounts payable calculations, and various other functions. (Pamungkas & Yuliansyah, 2017) in (Samsir & Muhammad Siddik, 2020)

CSS

CSS stands for Cascading Style Sheets. As the name implies, CSS has the properties of a style sheet language which means a programming language used for web design. CSS is a programming language that is used to design a web page. in designing web pages, CSS uses markers that we know as id and class (Hadi & Alfarabi Diki, 2017) in (Irma Kurnia Juliany et al, 2018).

Bootstrap

Bootstrap is a ready-made application package for creating the front-end of a website. That said, bootstrap is a web design template with plus features. Bootstrap was created to simplify the web design process for various levels of users, from beginner to experienced levels. Simply capitalize on basic knowledge of HTML and CSS, you are ready to use bootstrap (Rozi A. Zaenal, 2015) in (Andi Christian et al, 2018).

MySql

MySQL is an RDBMS (database server) software that can manage databases very quickly, can accommodate very large amounts of data, can be accessed by many users (multi-user) and can perform a process synchronously or simultaneously (multi-threaded). (Nugroho & Bunafit, 2012) in (Andi Christian et al, 2018)

Xampp

Xampp is one of the installer packages that contains Apache which is a web server where the files needed by the website are stored, and Phpmyadmin as an application used for MySQL database design. (Abdulloh & Rohi, 2016) in (Andi Christian et al, 2018)

Sublime Text

Sublime Text is an editor application for code and text that can run on various operating system platforms using Python API technology. The creation of this application was inspired by the Vim application, this application is very flexible and powerful. The functionality of this application can be developed using sublime-packages.(Dita Syifani & Ardiansyah Does, 2018)

METHODS

Development Process Model

This system will be built using one of the software development methods (System Development Life Cycle) with the waterfall model or better known as the linear sequential model, which is a classic systematic model, which is used as a reference in developing innovative and complex projects. The Waterfall model according to (Supiana, 2022) in (Rangga Gelar Gunata, 2022) is a sequential software development process, where progress is seen as continuing to flow downward (like a waterfall), the following are the stages:

1. *Needs Analysis*

This stage is the process of analyzing and collecting data or information needed by the User, which in this case is the Cashier or Admin of Kedai Tosca where a system is needed that can facilitate the processing of Kedai Tosca sales transaction data so that it can be managed properly and easily, and make it easier for cashiers in the sales transaction process and writing sales transaction reports more quickly and practically.

2. *System Design*

At this stage focuses on the system design process, which includes visual modeling of the system, interface design to database design which will later become the basis or concept in the process of making the Kedai Tosca Point Of Sales System.

3. *Writing Program Code*

This stage is the stage of making applications in accordance with the design documents that have been made previously, as for this WEB-based application will be built using the PHP programming language and MySQL as the database and assisted by several supporting software such as Sublime Text 3 as a text editor and also Xampp as a Web Server.

4. *Program Testing*

This stage includes system integration where the system that has been created will be verified and tested for feasibility, while the system test used is the BlacBox Testing method.

5. *Program Implementation*

This stage includes the process of implementing the application at Kedai Tosca and the maintenance process to ensure that the application always avoids bugs / errors so that it can run smoothly.

System Design

System design is made to make it easier to determine input and output in system design. The use of parts contained in the system design is expected to be able to simplify a complex system into simple parts, this is done so that the system becomes easier to understand and develop.

Usecase Diagram System POS Kedai Tosca

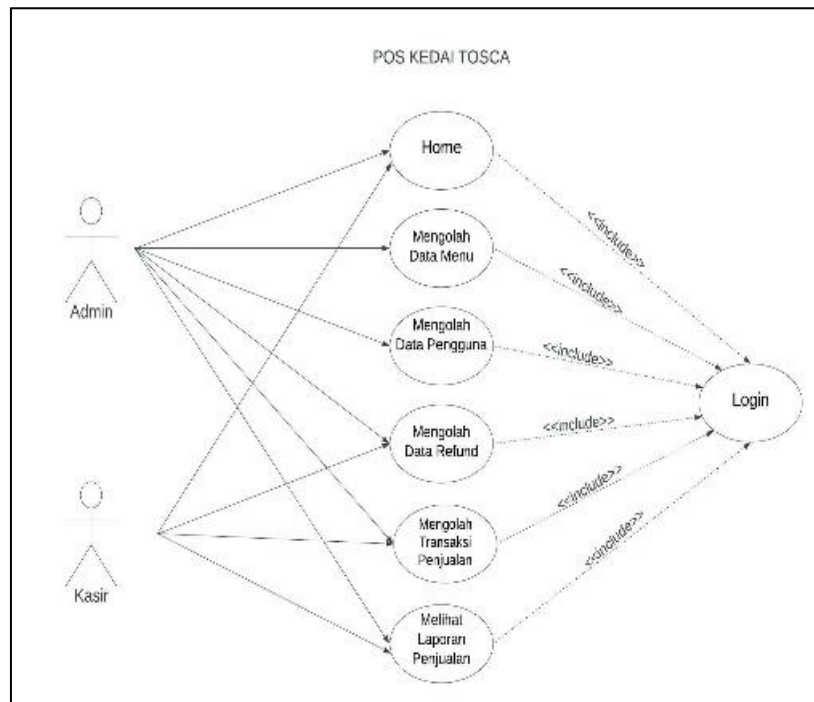


Figure 1. Usecase Diagram

Flowchart of Proposed System

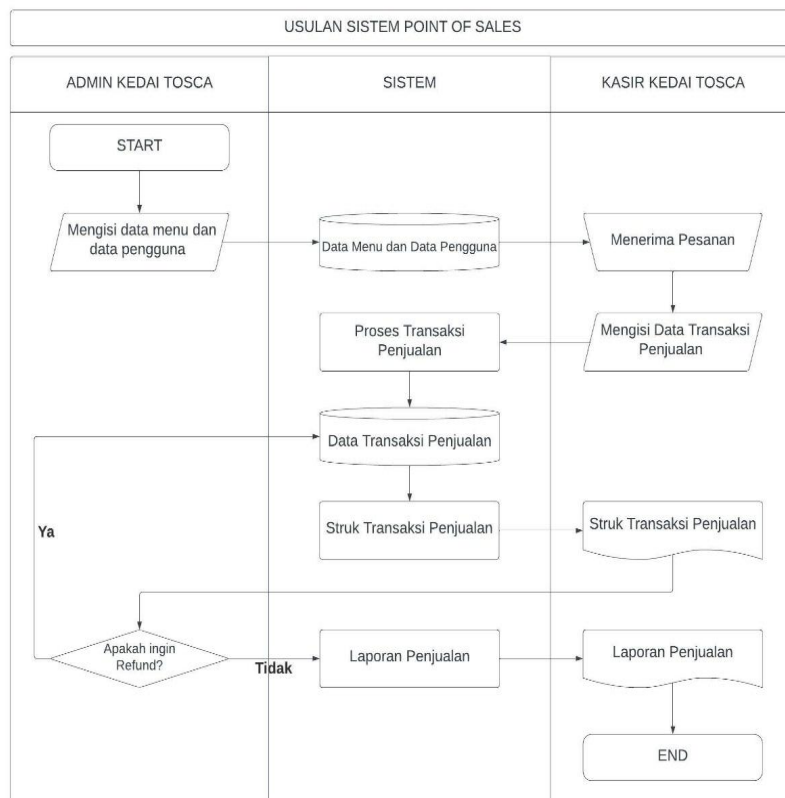


Figure 2. Flowchart Diagram

Sequence Diagram of Transaction System

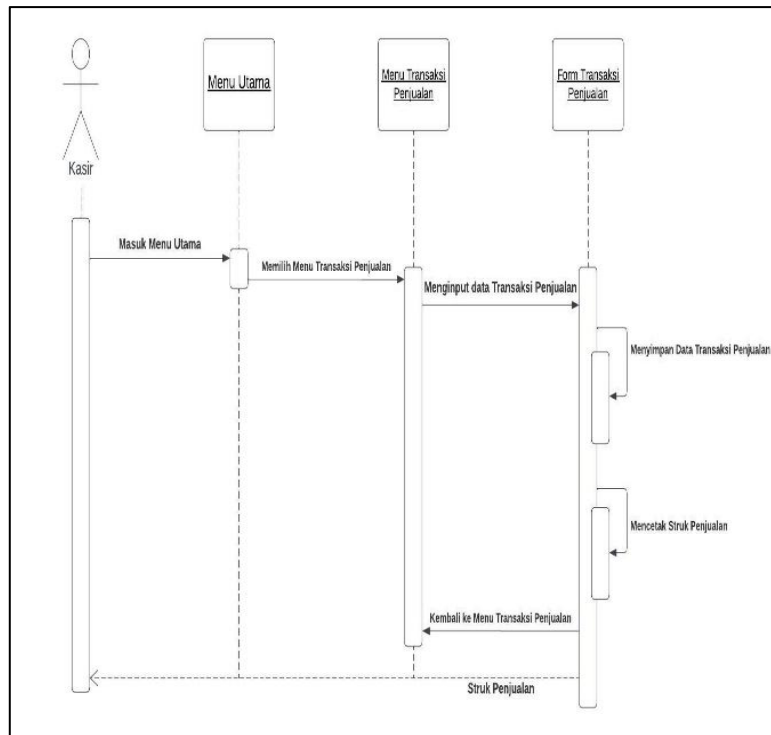


Figure 3. Sequence Diagram

RESULTS AND DISCUSSION

Interface Display

This stage is the stage of application development using the PHP programming language, Bootstrap and MySQL as a database with reference to the documents previously made in System Analysis and Design. After the system is built and operated, the System Testing Stage can then be carried out

Login Display

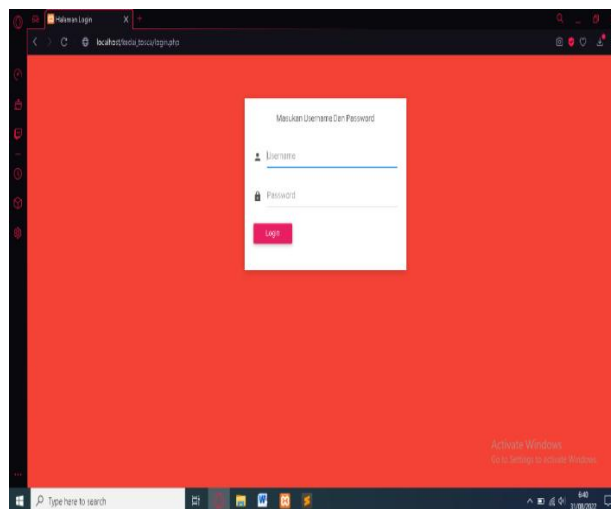


Figure 4. Login view

Admin Main Menu Display

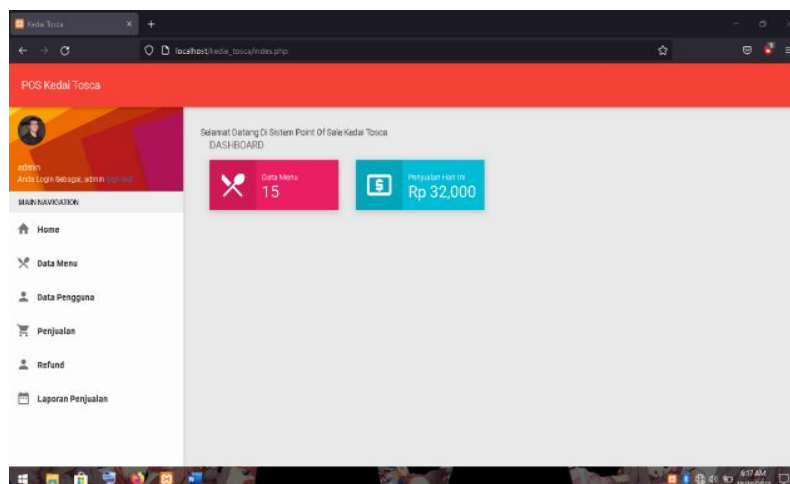


Figure 5. Admin Main Menu Display

Cashier Main Page Display

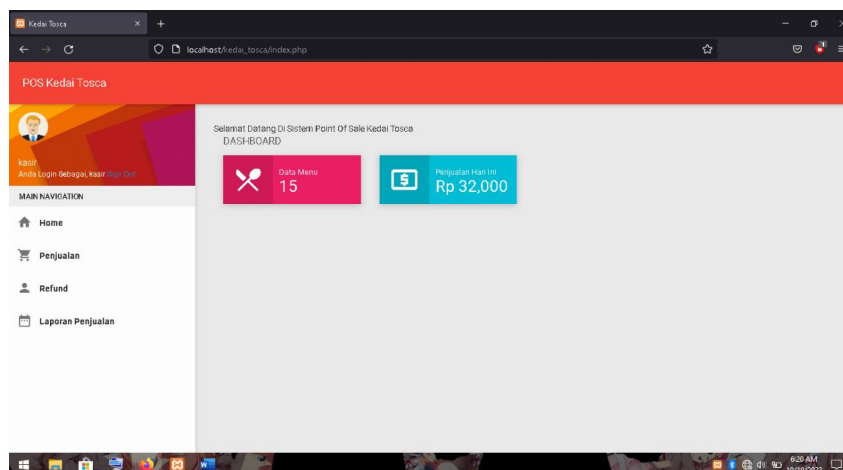


Figure 6. Cashier Main Page Display

Sales Page Display

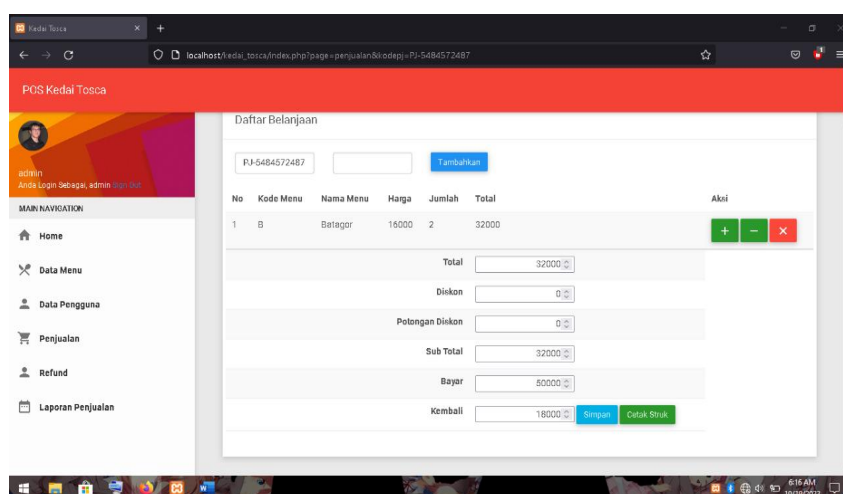


Figure 7. Sales Page Display

Blackbox Testing Results

No.	Menu	Test	Note
1	Login Menu	Login by entering username and password	Successful
2	Main Menu	Displays the Main Menu according to the specified level	Successful
3	Menu Data Menu	Displays a menu containing the Menu Data page	Successful
4	Menu Data User	Displays a menu containing the User Data page	Successful
5	Sales Menu	Displays a menu containing the Sales page	Successful
6	Refund Menu	Displays a menu containing the Refund page	Successful
7	Sales Report Menu	Displays a menu containing the Sales Report page	Successful
8	Function Add Menu Data	Display Form to add Menu Data	Successful
9	User Data Add Function	Display Form to add User Data	Successful
10	Add Sales Function	Add sales items based on the specified Menu Code	Successful
11	Add Sales Item Function	Add predefined items on the Sales page	Successful
12	Sales Item Less Function	Subtract the specified item from the Sales page	Successful
13	Menu Data Change Function	Display Form to edit Menu Data	Successful
14	User Data Change Function	Display the Form to edit User Data	Successful
15	Delete Menu Data Function	Delete the specified Menu Data from the Menu Data page	Successful
16	Delete User Data Function	Delete the specified User Data from the User Data page	Successful
17	Delete Sales Item Function	Delete the specified item from the Sales page	Successful
18	Menu Data Print Function	Print all data on the Menu Data page	Successful
19	Sales Receipt Print Function	Print Sales Receipt from Sales page	Successful
20	Sales Report Print Function	Print the entire sales data based on the specified date	Successful
21	Refund Function	Delete sales transaction data based on the selected sales transaction data	Successful
22	Pagination Function	Display a lot of data per page	Successful
23	Search Function	Search for data according to the entered keywords	Successful
24	Logout Function	Exit the System Page and return to the Login Menu	Successful

Table 1. Blackbox Testing Table

CONCLUSION

From the results of the Thesis Research entitled "DESIGNING THE POINT OF SALES (POS) APPLICATION AT THE TOSCA STORE USING THE WATERFALL METHOD" it can be concluded that with the achievement of this System can be used by Cashiers and Tosca Shop Owners in facilitating the buying and selling process and processing Tosca Shop data properly, starting from the available Menu Data, Sales Report Data, Printing menu data reports and sales reports to the sales transaction process and printing sales receipts directly with both fast and computerized.

Realizing that in the process of Research and Development the system carried out still has many shortcomings and limitations, the suggestions and input that the authors can describe as a consideration for the process of progressing research and development of the Point Of Sale (POS) System at Kedai Tosca to be better and optimal in the future are: (1) Adding features for payments using online application payments (DANA, OVO, GoPay), (2) Addition of a system for calculating menu stock and ingredients. (3) Adding Features to be able to see the menu display in the transaction process

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