

Design of Purchase and Sales Information Systems at Bima Citra Stores

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Abstract

Bima Citra shop is a place of business in Tanjung Jabung Barat Regency, which is located on Jl. Imam Bonjol, Kuala Tungkal. Bima Citra shop is engaged in the sale of office stationery, school stationery, and so on whose data collection process is still using the manual method, namely still using handwritten notes for sales. With this system there are frequent recording and calculation errors that make the owners not know for sure whether they are experiencing profits or losses every day, besides that there are obstacles between physical stock data that are not recorded so that there is a difference in stock in the warehouse. This problem causes losses so that an information system is needed that provides convenience in providing information. This causes the owner to be overwhelmed in handling incoming and outgoing stock of goods because it is not recorded and does not recap so it is not known for sure how much stock is still available. Therefore, this study aims to design a purchasing and sales information system using the PHP programming language, MySQL DBMS as a database, waterfall system development method and system modeling in the form of use case diagrams, activity diagrams, and class diagrams. The result of this research is a system that helps manage business processes, such as processing data on purchases, sales, stock and is able to streamline time in reporting reports.

Keywords: Design, Systems, Information, Purchasing, Sales

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INTRODUCTION

Computer and information technology can no longer be separated from human activities. Current technological developments have entered the era of artificial intelligence (He et al., 2019) (Zhang, n.d.), bigdata (Maryanto, 2017), data mining (Wulandari, F., Jusia, P. A., & Jasmir, 2020), (Jasmir et al., 2018) and the newest is deep learning technology (Jasmir et al., 2021) which is part of artificial intelligence. Humans are very dependent on the existence of information systems in many activities, including business. The Bima Citra Shop is one of the businesses that operates in the business of selling office stationery, school stationery, etc. where the data collection process still uses manual methods, that is, handwritten sales notes are still used. With this system, recording and calculation errors often occur which means that owners do not know for sure whether they are experiencing profits or losses every day, besides that there are problems between physical stock that is not recorded, resulting in stock differences in the warehouse. This problem causes losses to the Bima Citra Store, so an information system is needed that makes it easy to provide information to the Bima Citra Store.

The Bima Citra shop is run by the owner himself, the system currently running is still manual, the owner currently does not keep monthly records because he serves many customers, so the shop only keeps purchase receipts and sales receipts. This causes the owner to be overwhelmed with handling incoming and outgoing stock of goods because they are not recorded and do not record them so it is not known for certain how much stock is still available.

Several studies discuss purchasing and sales information systems, namely; Purchase and Sales Data Processing Information System at the Koloncucu Ternate Store (Abdurahman, 2017), The problem is that the data collection process for purchasing and selling goods at the Koloncucu Shop is still manual, where data on purchasing and selling goods is still recorded manually, creating a system using the Waterfall method with PHP and MySQL. This system simplifies and speeds up the employee work process in obtaining information about suppliers, roasters, product data information, and creating purchase and sales transaction records as well as reports and invoices.

Information System for Purchasing and Selling Clothing at Galoenk Distro Pematangsiantar (Siregar, 2018), In carrying out transactions, this distro still records transactions manually and reports are still done manually, namely by recording transactions on sales invoices and cash books, so that controlling clothing stock and the process of making reports is less efficient. To create a system using the Waterfall method. The system

created helps the shop, especially in the process of storing purchase and sales transaction data, this has improved the shop's performance in making purchase and sales reports.

Analysis and Design of a GRC Purchasing Information System Using the Waterfall Method (Larasati et al., 2017), the process of purchasing goods still uses the manual method, because there are more and more requests to purchase goods for making GRC and the recording still uses Microsoft Excel, resulting in the process of inputting purchasing data being delayed, taking quite a long time, and data ranges being lost, making it impossible to record using the manual method. . System creation using the Waterfall method. This purchasing information system makes it easier to process purchasing data to purchase reports. Inputting purchase data makes it easier to input data on purchasing goods, because previously data creation was still done manually by searching for data one by one from piles of paper documents.

Designing an Information System Application for Purchasing and Selling Office Stationery (Fauziah, 2019), In running the system for purchasing and selling office stationery, there are problems that often occur, such as errors in calculating the total amount of purchase and sales costs, in addition to the slow process of recording and searching for data because the data still uses archives and paper. System creation using Waterfall and SQLServer methods. With this system, it can help and improve service to consumers and suppliers in the process of purchasing and selling office stationery, as well as facilitating the process of filling in and searching for information regarding goods data, supplier data, user data, order transactions, goods receipt transactions, sales transactions, which can produce reports more quickly and accurately to handle buying and selling office stationery problems more quickly and efficiently.

Therefore, this research aims to design a purchasing and sales information system using the PHP programming language, MySQL DBMS as a database, waterfall system development method and system modeling in the form of use case diagrams, activity diagrams and class diagrams. The result of this research is a system that helps manage business processes, such as processing data on purchases, sales, stock and is able to streamline time in preparing reports.

RESEARCH METHOD

The research method that the author uses in this research is a qualitative method. Qualitative research is collecting data in a natural setting with the aim of interpreting phenomena that occur where the researcher is the key instrument. The object of this research is the Bima Citra Shop. In order for this research to produce the desired purchasing and sales information system, it is necessary to have a framework with clear stages as a guide in preparing the research. The research framework used is as follows:

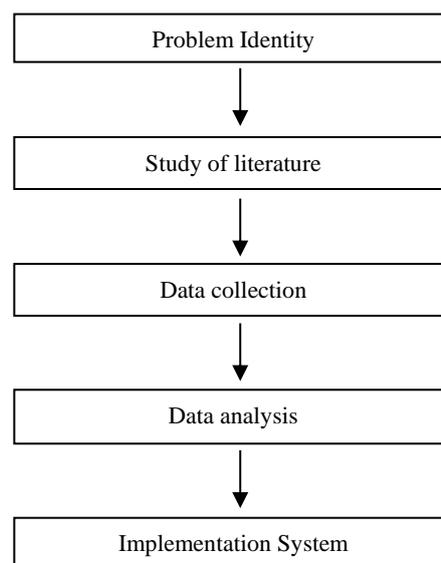


Figure 1. Research Frame work

Based on the research framework described above, the discussion of each stage in the research can be described as follows:

1. Identify the Problem

At this stage the author identified existing problems through observation and interviews and looked for solutions needed to solve the problem, namely by designing a purchasing and sales information system at the Bima Citra Store.

2. Literature Study

At this stage the author searches for, studies and understands the theories and concepts surrounding purchasing and sales information systems sourced from books, journals and other references related to research in order to strengthen the theoretical basis and concepts used.

3. Data Collection

At this stage, data was collected using interview and observation methods to obtain data and information regarding the purchasing and sales information system at the Bima Citra Store.

4. Data Analysis

At this stage the researcher carried out a system analysis by designing a system to solve problems that occurred at the Bima Citra Store by creating a new system design, including use case diagrams, activity diagrams, class diagrams and data structures.

5. System Design

At this stage the author carried out system development using the waterfall method, because this method is applied more systematically and more effectively in creating information systems.

To obtain the data needed in this research, researchers used 4 data collection methods, namely:

1. Direct Observation

Observation is a complex process, a process composed of various biological and psychological processes. Two of the most important are the processes of observation and memory. This data collection technique is carried out by observing or observing the research object, namely the Bima Citra Shop.

2. Interview

Interviews are one of several techniques for collecting information or data. This technique is carried out by conducting Q&A at the Bima Citra Shop.

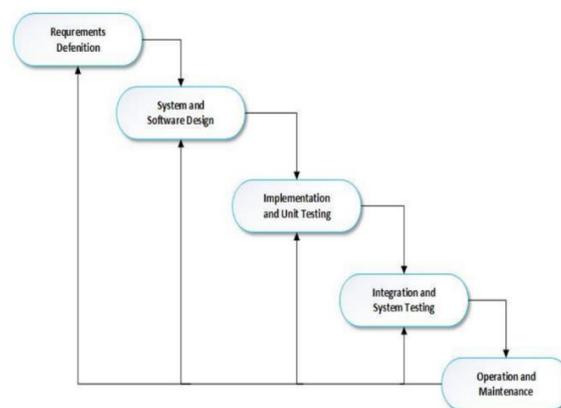
3. Documentation

Documentation is a data collection technique by looking for evidence from non-human sources related to the object being studied in the form of someone's writing, drawings or monumental works.

4. Literature Study

Literature study is a series of activities related to methods of collecting library data, reading and taking notes and processing research materials. This is related to information system design

System Development Methods



Gambar 2. Model *Waterfall*(Larasati et al., 2017)

The method used in developing this system is the waterfall method. The author uses the waterfall model because its application is more systematic and effective in creating information systems. The explanation and system development methods used are:

a. Needs Analysis

At this stage, an analysis of the system requirements will be carried out by conducting interviews and direct observation of the running system so that the author can understand what kind of software is needed by the user.

b. System Design

At this stage the author designs the system so that it can be implemented into a program at the next stage. The author designs an object-oriented system using use case diagrams, activity diagrams, class diagrams, according to the software design to be built.

c. Implementation and Unit Testing

At this stage the author implements a purchasing and sales information system at the Bima Citra Store which has been designed using the PHP programming language, MySQL DBMS.

d. System Testing

After the author implements the system, the next stage is the author testing the system to find out whether the system that has been built meets the requested needs and whether the system runs well. Testing is carried out to find out whether there are errors or deficiencies in the system so that they can be corrected before the system is implemented at the Bima Citra Store.

e. Operation and Maintenance

At this stage, software maintenance is carried out, such as making repairs to errors found in the running system or adding features and functions according to the requests of the Bima Citra Store.

RESULT AND DISCUSSION

The system that runs at the Bima Citra Store no longer records manually, for greater clarity the author explains the buying and selling process that occurs at the Bima Citra Store as follows:

A. Data search and storage

The data search process becomes slow because you have to search for notes one by one manually, and the owner experiences difficulties because he doesn't know the exact amount of stock available.

B. Making Reports

Making reports is still done manually so it feels very slow if there are buyers who purchase goods in large quantities, so the process of calculating the amount of money that buyers have to pay also becomes slow.

C. Purchase

The purchasing process occurs from the owner ordering the product to the supplier via telephone or sales person coming to the shop, then recording the product order data, then sending the product according to the product order, when the owner receives the order he will calculate the number of products according to the order based on the note recorded and make a receipt for the travel letter, if appropriate then the note will create a purchase report and become an archive.

D. Sales

The sales process occurs when customers come to the shop by telling the owner what they want to buy or order a product, then the owner collects the products the customer wants to buy and provides information on the sale of goods, if it is correct then the owner informs the amount of the price that needs to be paid without a note, if The customer needs a note, so the owner records the data on the goods the customer purchased on the note, then the customer pays according to the sales note that has been made and saves the copy of the note as an archive.

Based on the ongoing system analysis, several obstacles were found at the Bima Citra Store, including:

- a. The process of processing data and searching for information takes a long time because there is no manual recording anymore.
- b. Reports are not made monthly so we do not know the profits and losses experienced.
- c. The process of searching for goods takes time because you don't know the exact number of shocks in the shop.

In order to provide solutions for solving problems that occur at the Bima Citra Store, the author designed a purchasing and sales information system using PHP where the system has the following functions:

- a. Designing a purchasing and sales information system at the Bima Citra Store to help facilitate computerized business processes using the PHP programming language and MySQL DBMS.
- b. Produces a system that is coordinated and well connected, making it easier for users to search for data.
- c. Provides convenience in processing required reports such as inventory reports, purchase reports and sales reports which can be printed according to the date selected by the system user.

Use Case Diagram

Use Case Diagram describes the purchasing and sales system at the Bima Citra Store. In the system there is a main actor, namely the owner and the system also has 12 main processes, namely logging in, managing user data, managing supplier data, managing customer data, managing customer category data, managing brand data, managing item type data, managing item data, managing purchase data, manage sales data, print reports, and log out. For more details, see the following:

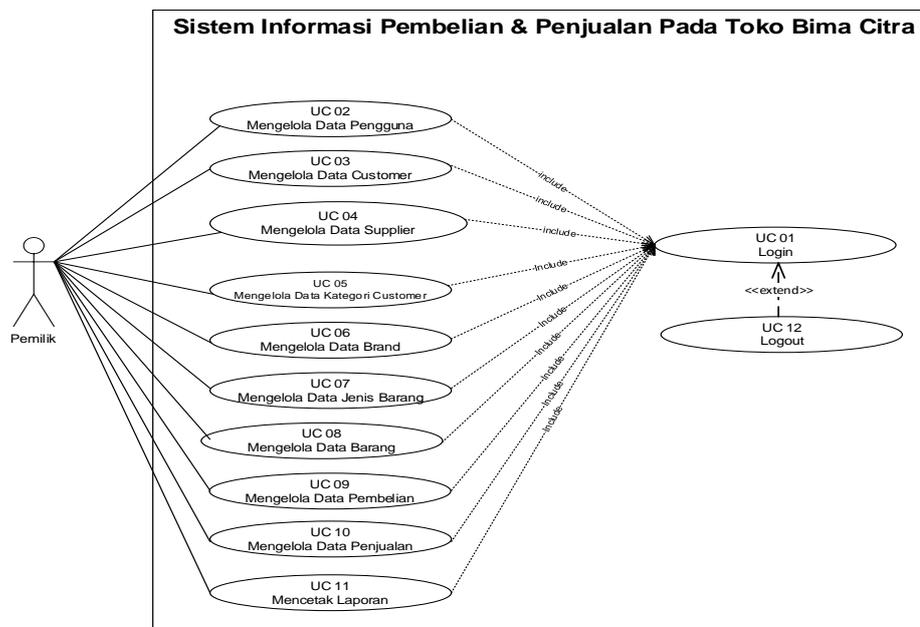


Figure 2. Use Case Diagram

Class Diagrams

Class Diagrams are used to describe the system structure in terms of defining the classes that will be created and relate to each other to build a system and carry out the relationship between design documentation and synchronous software. The following is a depiction of the Class Diagram which can be seen below:

User Table Page

No.	Nama Pengguna	Username	Password	Aksi
1	pemilik	pemilik	58399557dae3c50a23c78606771dfa3d	Edit Hapus

Figure 5. User Table Page

Customer Table Page

No.	Kode Customer	Nama Customer	Telp Customer	Alamat Customer	Aksi
1	CS-001	- NON MEMBER	-	-	Edit Hapus
2	CS-002	Nedya	085215063931	Jl ANDALAS	Edit Hapus
3	CS-003	AGNES	085315899868	PARIT GOMPONG	Edit Hapus
4	CS-004	SUPARTMAN	082315664523	PARIT 3	Edit Hapus
5	CS-005	RICKY-KANTOR KEJAKSAAN	-	KUALA TUNGKAL	Edit Hapus
6	CS-006	ARDI-KANTOR KEJAKSAAN	-	KUALA TUNGKAL	Edit Hapus
7	CS-007	PUTRI-KANTOR KEJAKSAAN	-	KUALATUNGKAL	Edit Hapus
8	CS-008	RIVANLI AZIS-KANTOR KEJAKSAAN	-	KUALATUNGKAL	Edit Hapus
9	CS-009	WAWAN-KANTOR KEJAKSAAN	-	KUALATUNGKAL	Edit Hapus
10	CS-010	PAK BUSMAN	08531568496	-	Edit Hapus

Figure 6. Customer Table Page

Stock Report Page

No.	Kode Barang	Nama Barang	Brand	Jenis Barang	Stock	Satuan	Harga Beli	Harga Jual
1	BR-001	JOYKO BP-251 FRODO BALL PEN 0.7MM	GILLETTE	CORRECTOR	14	PCS	556.00	1.500.00
2	BR-002	JOYKO HL-1-16 HIGHLIGHTER PASTEL COLORS	JOYKO	PENA	366	PCS	3.325.00	6.800.00
3	BR-003	JOYKO CT-522 TP EX CORRECTION 12M	JOYKO	CORRECTOR	222	PCS	4.690.00	10.000.00
4	BR-004	JOYKO ER-110 ERASER PENGHAPUS PENSIL WARNA WARNI	JOYKO	CORRECTOR	196	PCS	674.00	2.500.00
5	BR-005	KENKO KE-01 TIP EX CORRECTOR FLUID BOTOL MERAH	KENKO	CORRECTOR	98	PCS	3.945.00	5.000.00
6	BR-006	JOYKO JK-100 GEL PEN (PENA JEL) 0.5MM	JOYKO	PENA	452	PCS	1.600.00	5.000.00
7	BR-007	JOYKO SP-362 RAUTAN SHARPPENER SERUTAN PENSIL	JOYKO	CORRECTOR	485	PCS	342.00	2.500.00
8	BR-008	JOYKO ERASER PENGHAPUS PENSIL 526 B40BL	JOYKO	CORRECTOR	844	PCS	655.00	3.000.00
9	BR-009	JOYKO GS-09 LEM GLUE STICK BATANGAN 8GR	JOYKO	LEM	83	PCS	1.950.00	6.000.00
10	BR-010	JOYKO GP-265 Q GEL - GEL PEN (PENA JEL)	JOYKO	PENA	850	PCS	2.020.00	5.000.00
11	BR-011	JOYKO JK-101 CORRECTION FLUID TIP EX	JOYKO	CORRECTOR	456	PCS	2.850.00	5.000.00
12	BR-012	JOYKO MMS-11 MEMO STICKY NOTE KERTAS TEMPEL 20SXSC	JOYKO	KERTAS	51	RIM	4.608.00	10.000.00
13	BR-013	JOYKO P-88 PENSIL KOMPUTER 2B HIJAU	JOYKO	PENSIL	158	PCS	629.00	3.000.00
14	BR-014	JOYKO BP-327 BALL PEN 0.7MM	JOYKO	PENA	536	PCS	405.00	1.000.00
15	BR-015	JOYKO MP-15 MECHANICAL PENCIL LEAD PENSIL MEKANIK	JOYKO	PENSIL	51	PCS	1.840.00	4.000.00

Figure 7 Stock Report Page

Halaman Login page

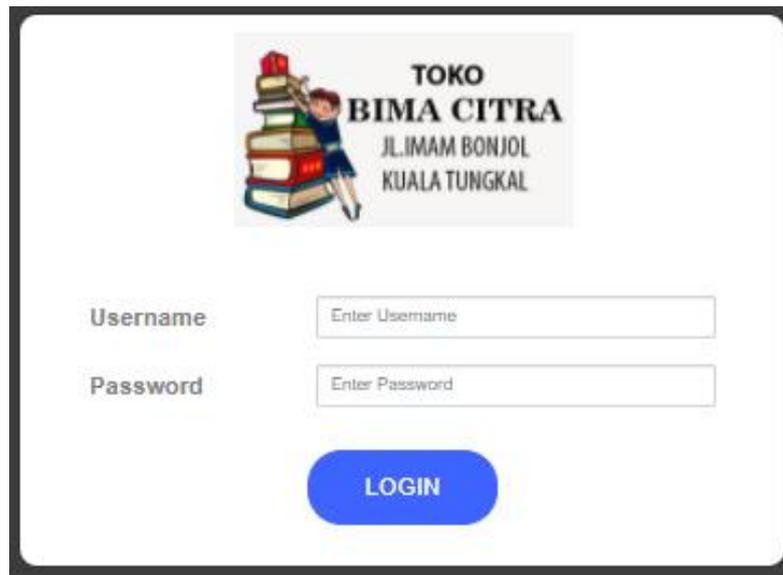


Figure 8 Login page

CONCLUSION

Based on the research that has been carried out in designing the purchasing and sales information system at the Bima Citra Store, the following conclusions can be drawn: The data processing system at the Bima Citra Store when it was first opened, recording and recording reports was still done manually, as time went by until now The owner no longer keeps records, the shop owner only keeps purchase receipts and makes sales receipts at the customer's request. This makes it difficult for the owner to know whether stock is still in stock or not and also the owner does not know exactly how much loss he has experienced and what profit he has made. The design of the purchasing and sales information system at the Bima Citra Store is designed using the PHP programming language and MySQL DBMS as the main storage media to accommodate data which is then processed into information that can be accessed by system users. The resulting purchasing and sales information system design can be used to support business process activities at the Bima Citra Store, in order to improve the quality of customer service and support the quality of work. Saran

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