Desktop-Based of Outdoor Tools Buying and Sales Information System

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A B S T R A C T

System development is carried out to produce a system that can help process transactions related to purchases and sales. System development is designed to make a computerized sales and purchasing system so it will facilitate all activities quickly, easily and accurately. System development carried out in Alambara Adventure because it still uses a manual system in running the sales and purchasing system, so that the manual implementation process is still experiencing time and accuracy problems. The method used in this research is the descriptive analysis method. Information systems applied in the sale and purchase of outdoor equipment are in the form of internet and desktop-based information systems. The system is built using Borland Delphi 7 and Microsoft Access as a database and there is automation for coding, among others, item code, customer, supplier, and invoice number. System analysis starts from analyzing the running system then analyzing system weaknesses and finally making a system requirements analysis. The system design stage starts from making context diagrams, data flow diagrams, and flowcharts, then making input and output designs. The novelty of the system designed at Alambara Adventure is the testing phase carried out on the user through Acceptance testing at the system design stage and at the end of the system design.

Keywords: Sales Information Systems, Purchasing Information Systems, desktop-based systems

Introduction

Trading business is one important business process to do. Every businesses need to have a good information system and controlled with a clear flow to be able to carry out good purchasing activities. Data management and good information is needed by management to make it easier decision making and policy action necessary for business survival [1]. An information system is an organized combination of people, hardware, software, communication networks, and resources that collect, transform, and disseminate information within an organization. In addition, an information system is a combination or combination of people, software (hardware), software, and data resources capable of collecting, processing, changing and disseminating information within an organization [2]. A system is a series of two or more interconnected components that interact to achieve a goal. Most systems consist of smaller subsystems that support the larger system [3]. At this time the information system is getting faster in its development. Information systems are widely needed in various fields such as government, distribution, logistics, data management, sales, and industry. Information systems play a very important role in the field of sales, sales themselves are transactions in the form of goods carried out by a group of people in order to have ownership rights over these goods.

This fast-developing information system is in great demand by many people, so that a lot of people are learning about the world of information in this modern era. Likewise with the development of the business world, especially sales, which are increasingly advanced and complex in this millennial era leading to wider and advanced business scope. Every company will try to keep abreast of developments in the information world that is happening at this time, so that the company will manage the available resources as much as possible, especially human resources who provide energy, talent, creativity and effort to the company. The development of information systems in this millennial era has led to the emergence of many applications on the internet that we

can use, of course we must be wise in using these applications. Currently the sales industry is growing very rapidly. With the rapid growth of information systems in the field of sales, it creates very tight competition among trading companies both in the domestic and international markets. They compete to provide various facilities and offer the best quality of service. These efforts are made in order to continue to survive in the midst of intense competition and will remain the main choice of consumers.

Broadly speaking, all business processes range from purchasing, selling and reporting of business results. Sales are a common economic activity, where by selling a company will get results or profits according to what is planned or get a return on costs incurred. Purchasing is an effort made to procure goods needed by the company [4].Making or setting up a sales system has an effect on the company's level of revenue receipts, while the purchasing system has an effect on information on the receipt of goods obtained from suppliers. Therefore the company must control and supervise sales and purchasing activities by implementing an adequate system.

Sales and purchasing information systems are an important part of the operation of a company or business, both manufacturing companies and trading companies. One of the steps a company can take to be able to compete in the business world is to implement an effective accounting information system. By having an accounting information system, the company can have a strategic competitive advantage, because the accounting information system will be able to guarantee accuracy, validity, and timeliness information needed in the decision-making processfor planning, implementing and controlling [5].

The sales and purchase system is the most important part in the operation of a company or business, both manufacturing and trading companies. Making or setting up a sales system has an effect on the company's level of revenue receipts, while the purchasing system has an effect on information on the receipt of goods obtained from suppliers. Therefore the company must control and supervise sales and purchasing activities by implementing an adequate system. The sales business world that is currently in great demand by consumers is in the form of fashion, cosmetics, and outdoor equipment. Outdoor equipment itself is widely used when we are hiking, camping, or traveling for several days, so outdoor equipment is a tool that is often sought after by consumers in Indonesia.

Alambara Adventure is an outdoor equipment store that sells outdoor equipment in the form of tents, carrier bags, flashlights, stoves, and other types. Many of the customers are teenagers who often rent outdoor equipment. Sales of goods are carried out offline in stores and online on Instagram. Various information systems can be applied to sales and purchasing systems, both website-based, application-based and desktop-based systems. However, the implementation of the system has advantages and disadvantages of each. The website-based system has the advantage that it can be used anywhere and anytime as long as it has an internet network, but the disadvantage is that a stable internet connection is required to use the system. Application-based systems have the advantage of being able to be downloaded at any time and used either online or offline, but usually there are periodic updates made by system makers. Meanwhile, desktop-based systems have the advantage of being able to stand alone without the need for an internet connection, but can only be used on the computer on which the program is installed. Alambara Adventure is a business that still operates locally with limited resources, so a desktop-based system is suitable.The desktop-based information system itself is a system that can only be used by the owner or consumer of the information system, because it is desktop-based, its use is only offline-based. This is so that the owner/user can use the system without requiring internet data to access it so that it can be more easy and fast to use and minimal cost.

Several studies state that a desktop-based system is beneficial to its users, including research by Priambodo (2017) stating that a desktop-based goods data management system application allows the user to be able to know the location of each item and know the date of procurement

data and the price of each item [6]. Research by Herlina (2021) concluded that with the existence of a desktop-based sales information system design can help expedite the performance of the sales department for users [7]. Sabir (2021) states that the results of this desktop-based sales application make it easier for admins to manage goods data, supplier data, sales transaction data and purchase transactions and help admins make reports on goods data, sales data and reports on purchasing data, so that sales and management transaction processes stores become more effective and efficient [8]. From the background of this problem, a solution is needed to help manage data and transactions at the Alambara Adventure store. The system design at Alambara Adventure refers to the previous research of Zulfa (2018) that states that simplify the process of sales and purchase transactions as well as presentation of fast and accurate reports. The novelty in this research is adding a testing stage with Acceptance testing at the system design stage by interviews and at the end of the system design using questionnaires to measure the result.

Method

This study uses primary data, namely data obtained directly from interviews and secondary data, namely transaction data and transaction evidence as well as the flow of sales and purchase transactions that occurred at Alambara Adventure. The dependent variable is in the form of sales and purchase information while the independent variable is a desktop-based system. The time of the research was conducted for 6 months.The method used in this research is descriptive analysis method, namely by collecting data, analyzing data, making problem-solving solutions by making sales and purchasing systems. Data collection techniques are obtained from research objects with the following steps:

1. Field Study is carried out by conducting direct research to the Alambara Adventure Store which is the object of research by means of Observation and Interview. Observations were made to find out the daily sales and purchase transaction activities, the evidence used, the reports made and other technical matters related to sales and purchase accounting at Alambara Adventure. Interviews were conducted to find out user needs and the right system used in the Alambara Adventure business, easy to use and in accordance with user needs

2. Literature Study, namely the method of searching and collecting data through books, documents, journals, browsing the internet or literature that is closely related to the research topic

3. The system development method is carried out using the prototyping method as a software development method, which is in the form of a physical working model of the system and functions as an initial version of the system. The prototype that will be produced is in the form of a system design and an Illustrative picture is obtained, namely generating sample reports and screen displays, Simulated, namely simulating several system workflows and Functional, namely simulating several actual system flows and. Evolutionary, namely producing a model that becomes part of the operational system.

4. The system was built using Borland Delphi 7, the next generation of Turbo Pascal. Delphi programming is designed to operate under the Windows operating system and provides various facilities for creating visual applications with various advantages in productivity, quality, software development, compilation speed, attractive design patterns and a structured programming language. This can be used to create graphically attractive display control applications [9].

5. The system is also designed using Microsoft Access, which is one of the Microsoft Office program applications that can be applied in managerial work such as creating databases [10].

6. Communicating system design to users at the initial and final stages to determine the level of fulfillment of needs and the usefulness of the system at Alambara Adventure. Communication

at the initial stage was carried out through interviews, communication at the final stage was carried out by means of questionnaires.
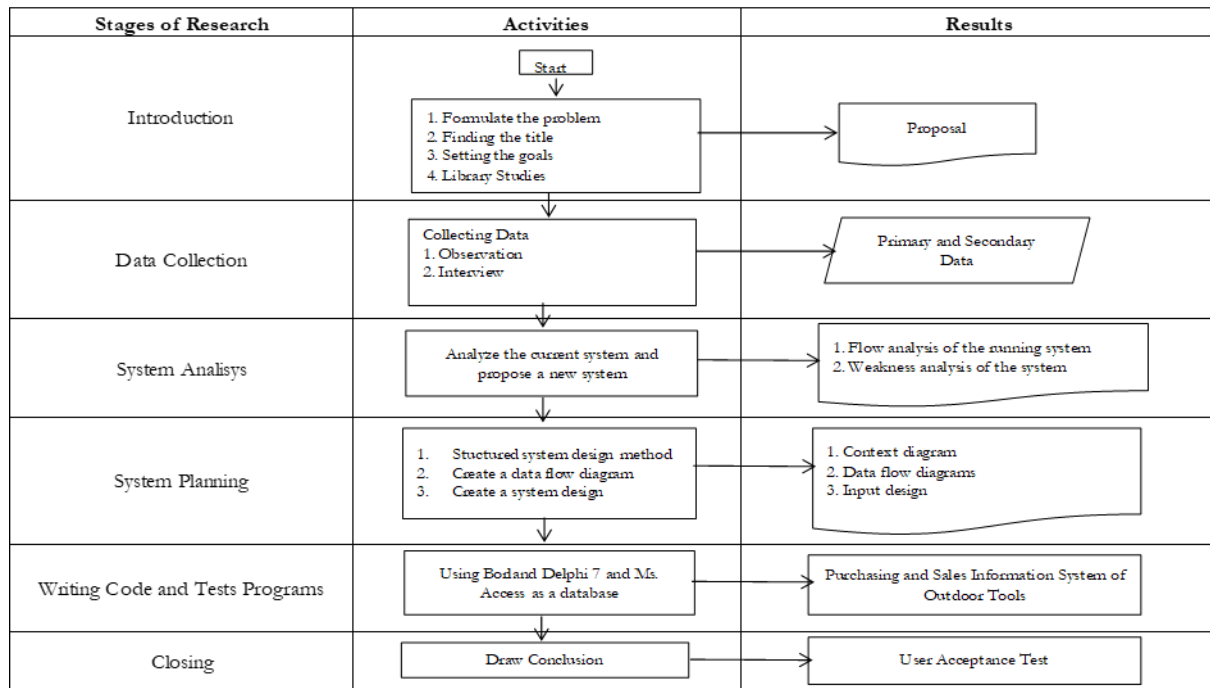
Stages of Research	Activities	Results
Introduction	Start 1. Formulate the problem 2. Finding the title 3. Setting the goals 4. Library Studies	Proposal
Data Collection	Collecting Data 1. Observation 2. Interview	Primary and Secondary Data
System Analisys	Analyze the current system and propose a new system	1. Flow analysis of the running system 2. Weakness analysis of the system
System Planning	1. Stuctured system design method 2. Create a data flow diagram 3. Create a system design	1. Context diagram 2. Data flow diagrams 3. Input design
Writing Code and Tests Programs	Using Borland Delphi 7 and Ms. Access as a database	Purchasing and Sales Information System of Outdoor Tools
Closing	Draw Conclusion	User Acceptance Test

Figure 1. Stages of Research

Results and Discussion

The stages of the system design process are carried out in several stages, namely:

1. System Analysis

System analysis is carried out by analyzing all the requirements needed to build the system based on the problems that have been described in the formulation and limitations of the problem. Needs analysis are the steps required by the user to solve the problem in terms System [11]. System analysis is carried out with the aim of improving various functions in the running system to make it more efficient, changing the goals of the running system, designing or changing the output that is being used at the Alambara Adventure Store.

2. Interviews

Interviews in the middle of designing the system design were carried out to find out the development of making the system in relation to user needs. Interviews were conducted to find out whether the system design plan fits the needs or still needs adjustments and changes before arriving at the final system design.

3. System Design

The system flow diagram of the process after implementing the new system, data flow diagrams, input design, output design, database design, and relationships between tables are made to design the system being developed. This diagram uses notations to describe the flow of system data, the use of which is very helpful for understanding the system logically, structured and clear and is a tool in describing or explaining the work process of a system [12].

The diagrams of system design shown as below:

a. Context diagrams, is an overview of a system contained within an organization that shows system boundaries, interactions between external entities and a system, and information generally flows between entities and system. There are three related entities, namely Customer, Supplier and Administration/Owner.
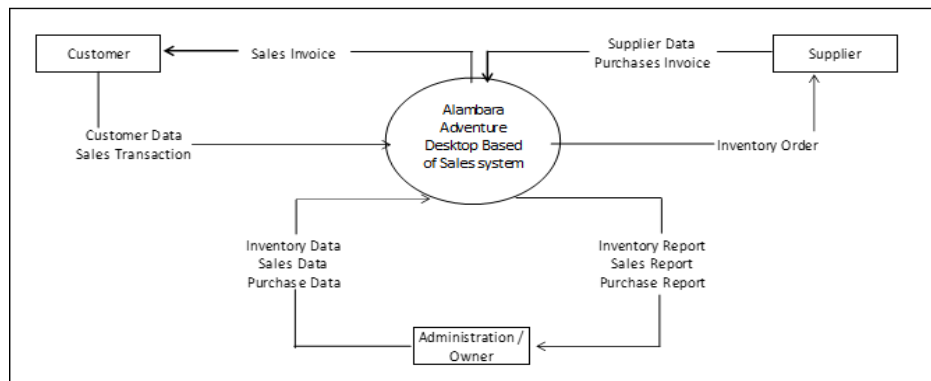
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Figure 2. Context Diagram of Alambara Adventure System

b. Data Flow Diagram (DFD), is a modeling notation, which focuses on essential, functional aspects of such early software designs [13]. Data Flow Diagram (DFD) is graphical diagrams for specifying, constructing and visualizing the model of a system. Data Flow Diagram (DFD) is used in defining the requirements in a graphical view [14]. Data Flow Diagram (DFD) levels are numbered 0, 1 or 2, and occasionally go to even Level 3 or beyond. Data flow diagrams are described in the form of symbols as follows:

Table 1. Symbol of Data Flow Diagrams

Symbol	Symbol Name	Function
	Terminator (external entity)	Terminators can be people, groups of people, companies related to the system
	Data flow	This data flow shows the activities that exist in the process and terminator in a system
	Process	A process is an activity or work performed by a person, machine or computer as a result of stream of data entering the process
	Data storage	A store of data that can be a file or database in a computer system

1) Data Flow Diagram (DFD) level 0 divided into three processes namely master data processing, transaction processing, and report. There are eight entities namely user, inventory, customer, supplier, sales, purchase, payment and data saving.
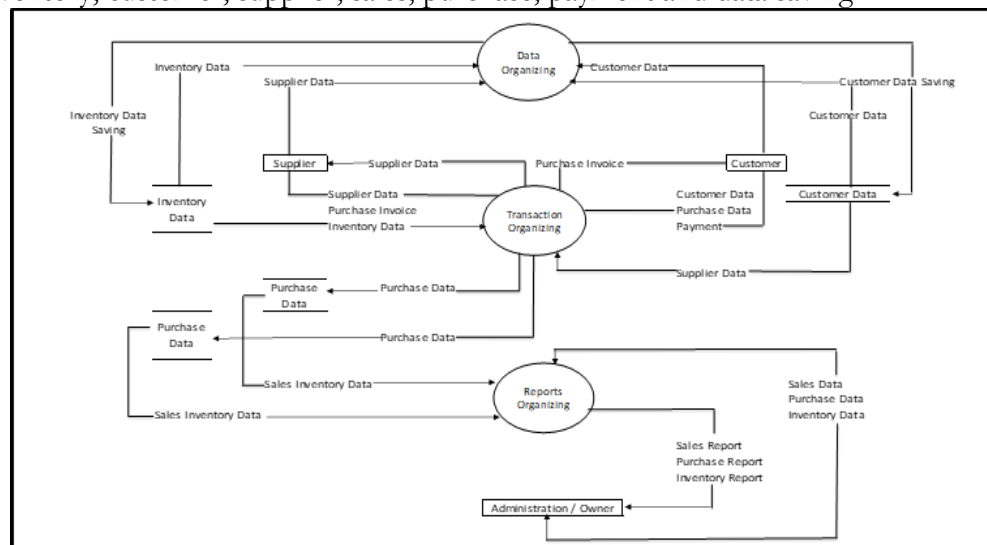

Figure 3. Data Flow Diagram Level 0

2) There are 3 processes in DFD level 1 processing data, namely processing goods data, customer data, and supplier data. All outside entities are involved in DFD level 1.

3) Data Flow Diagram Level 1 of Master data processing shows how to process the data processing three entity data in the form of goods, customer data, and supplier data.
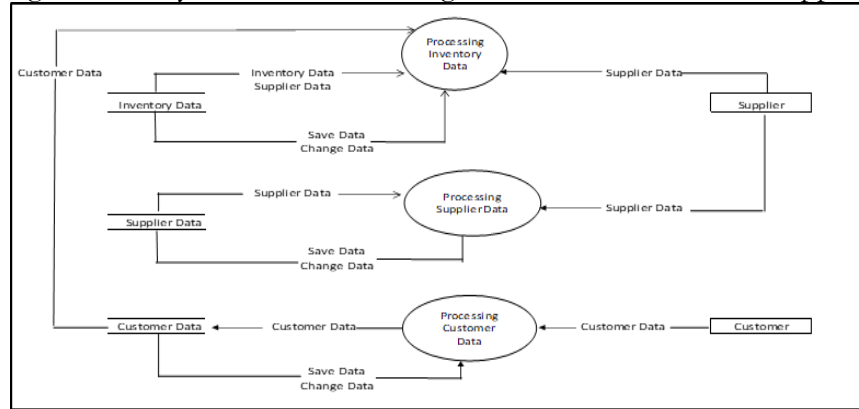

Figure 4. Data Flow Diagram Level 1 of Master data processing

4) Data Flow Diagram Level 1 of transaction processing shows transaction processing of buying and selling. There are three related entities namely Customer data, Inventory data, Customer data, Purchase data and Supplier data.
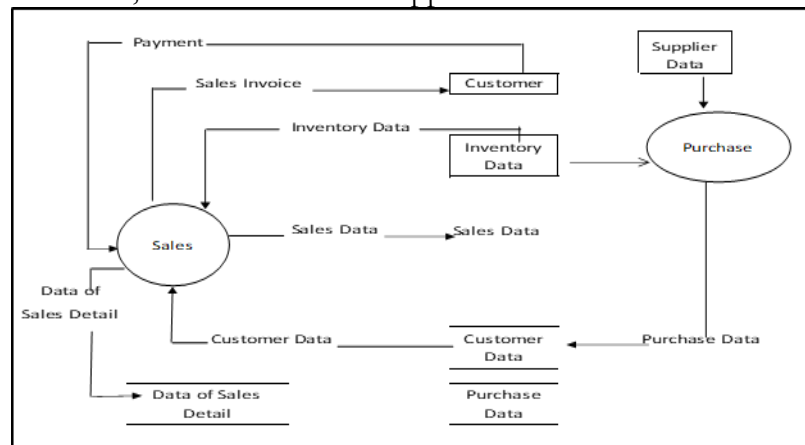

Figure 5. Data Flow Diagram Level 1 of transaction processing

5) Data Flow Diagram Level 1 of Reports processing show report processing buying and selling. There are six related entities, namely Inventory data, Sales data, Data of sales details, purchase data, supplier data and Administration/Owner.
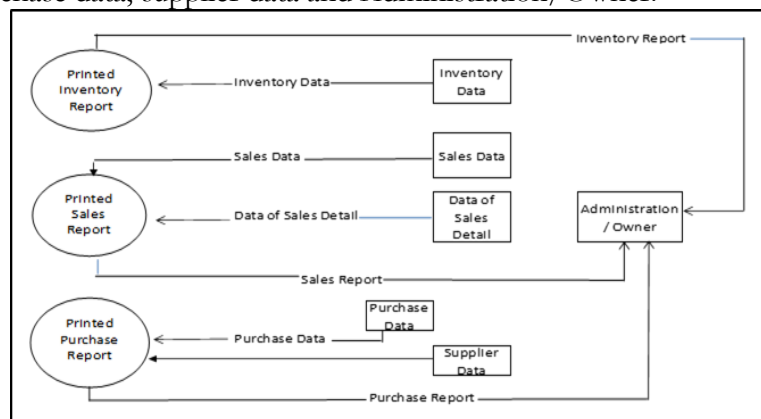

Figure 6. Data Flow Diagram Level 1 of Reports processing

c. Flowchart, is an extremely useful tool in program development. Program flowcharts act like mirrors of computer programs in terms of flowcharting symbols. They contain the steps of solving a problem unit for a specific result. System flowcharts contain the solutions of many problem units together that are closely related to each other and interact with each other to achieve a goal [15].

1) Login Flowchart shows the flow of the stages of logging into the system.
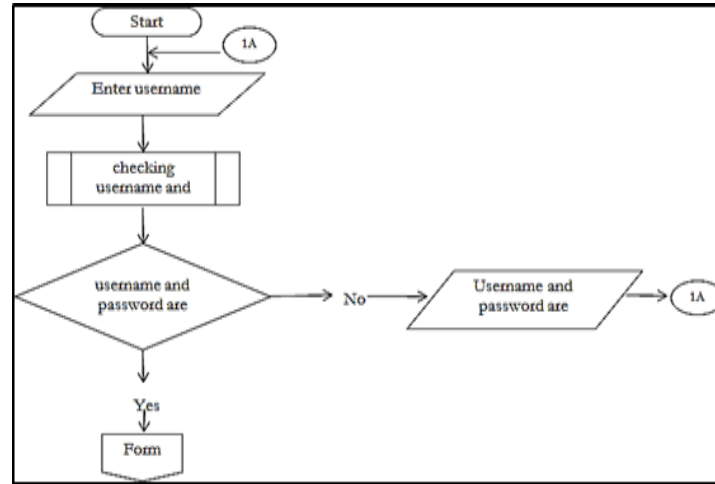

Figure 7. Login Flowchart

2) Inventory Data Flowchart shows the flow of the system stages in the movement of Inventories.
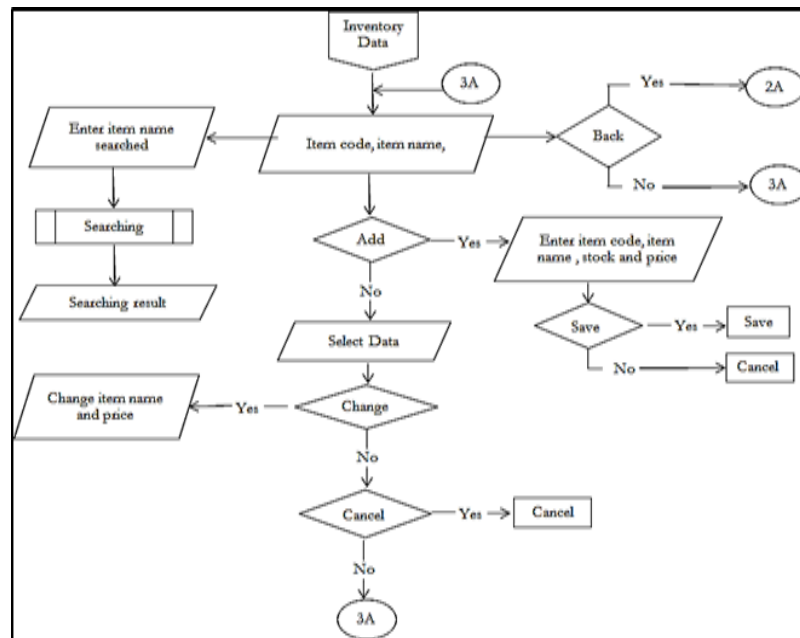

Figure 8. Inventory Data Flowchart

3) Customer Data Flowchart shows the flow of system stages in customer data.
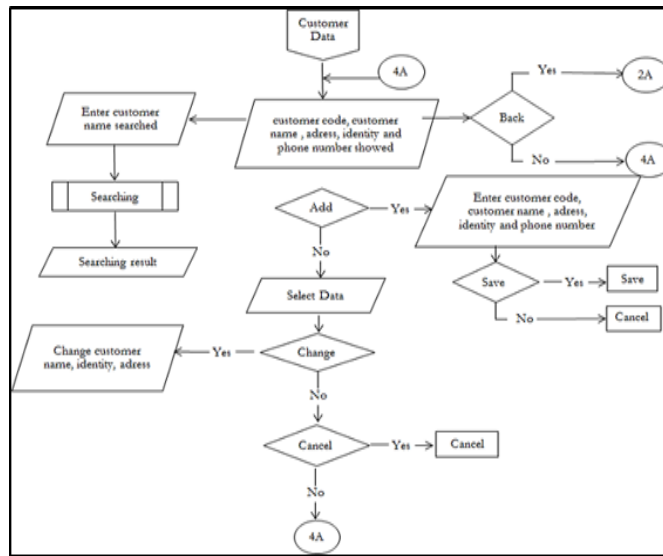
Figure 9. Customer Data Flowchart

4) Supplier Data Flowchart shows the flow of system stages in Supplier data.
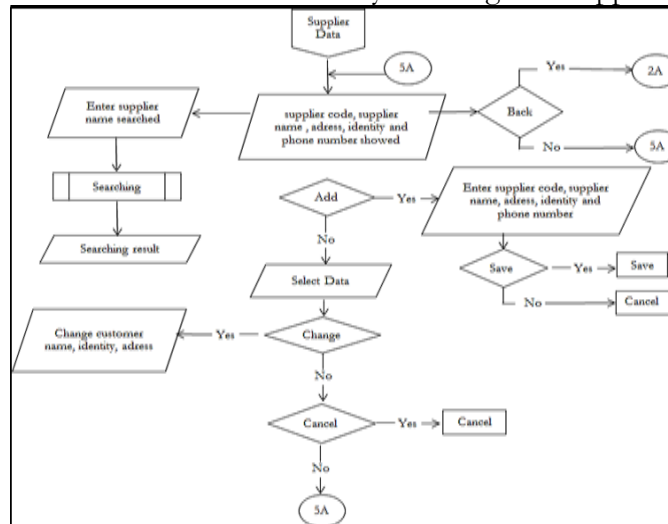

Figure 10. Supplier Data Flowchart

5) Sales Flowchart shows the flow of stages of sales transactions on the system.
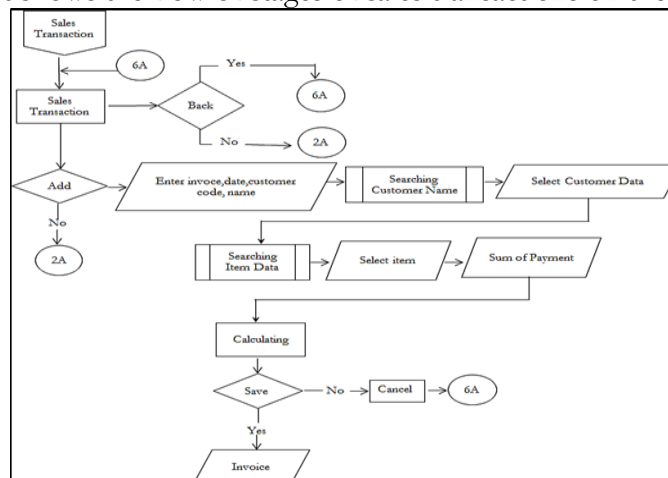

Figure 11. Sales Flowchart

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6) Purchase Flowchart shows the flow of the stages of the purchase transaction on the system.
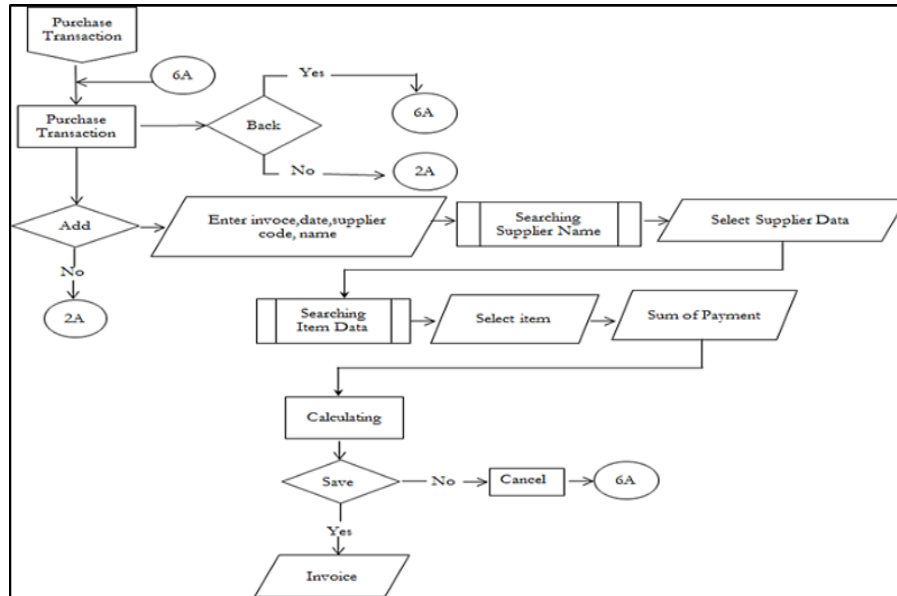

Figure 12. Purchase Flowchart

d. Input and Output Design
    Input design is the design of a system overview using the unit modeling language (UML), Microsoft access and user interface design. Output design is a design for the output display produced by the system.
e. Database design, is the process of determining the contents and settings of the data needed to support various system designs. Database Design Objectives Are To Fulfill Information That Contains Specific User Needs. This data will be connected to Microsoft Access to store the data needed by the user related to design input and output. Database design shown as follows:

Table 2. Design of Inventory Table

Field Name	Data Type	Wide	Description
Inventory _Code	Text	5	Primary Key
Inventory_ Name	Text	50	
Stock	Number	-	
Price	Number	-	

Table 3. Design of Supplier Table

Field Name	Data Type	Wide	Description
Supplier_Code	Text	5	Primary Key
Supplier_Name	Text	50	
Phone Number	Number	-	

Table 4. Design of Customer Table

Field Name	Data Type	Wide	Description
Customer_Code	Text	5	Primary Key
ID_Number	Number	-	
Customer_Name	Text	50	
Adress	Text	100	
Phone Number	Number	-	

Table 5. Design of Sales Detail Table

Field Name	Data Type	Wide	Description
ID	Autonumber	50	Primary Key
Sales_Invoice	Text	5	
Inventory_Code	Text	5	
Date	Date/Time	-	
Inventory_Name	Text	50	
Total	Number	-	
Payment	Number	-	
Change	Number	-	

Table 6. Design of Temporary Table

Field Name	Data Type	Wide	Description
ID	Autonumber	50	Primary Key
Inventory_Name	Text	50	
Date	Date/Time	-	
Total	Number	-	
Price	Currency	-	
Subtotal	Currency	-	

Table 7. Design of User Table

Field Name	Data Type	Wide	Description
ID_Name	Text	50	Primary Key
Password	Text	50	

Table 8. Design of Purchase Table

Field Name	Data Type	Wide	Description
ID	Autonumber	50	Primary Key
Purchase_Invoice	Text	5	
Date	Date/Time	-	
Supplier_Date	Text	5	
Inventory_Code	Text	5	
Inventory_Name	Text	50	
Total	Number	-	
Purchase_Price	Number	-	
Total_Price	Number	-	

Table 9. Design of Purchase Temporary Table

Field Name	Data Type	Wide	Description
ID	Text	5	Primary Key
Date	Date/Time	-	
Inventory_Code	Text	5	
Inventory_Name	Text	50	
Total	Number	-	
Price	Number	-	
Subtotal	Number	-	

Table 10. Design of Sales Master Table

Field Name	Data Type	Wide	Description
ID	Autonummber	50	Primary Key
Inventory_Name	Text	50	
Date	Date/Time	-	
Total	Number	-	
Price	Number	-	
Subtotal	Number	-	

f. Table and Relation between table

Relation on a table is a relationship or relationship between one table and another in the database. In a database, relations are connected by two tables connected via a foreign key column in the first table with the second table's primary key. Relations between tables keep all data connected to each other from input to output.
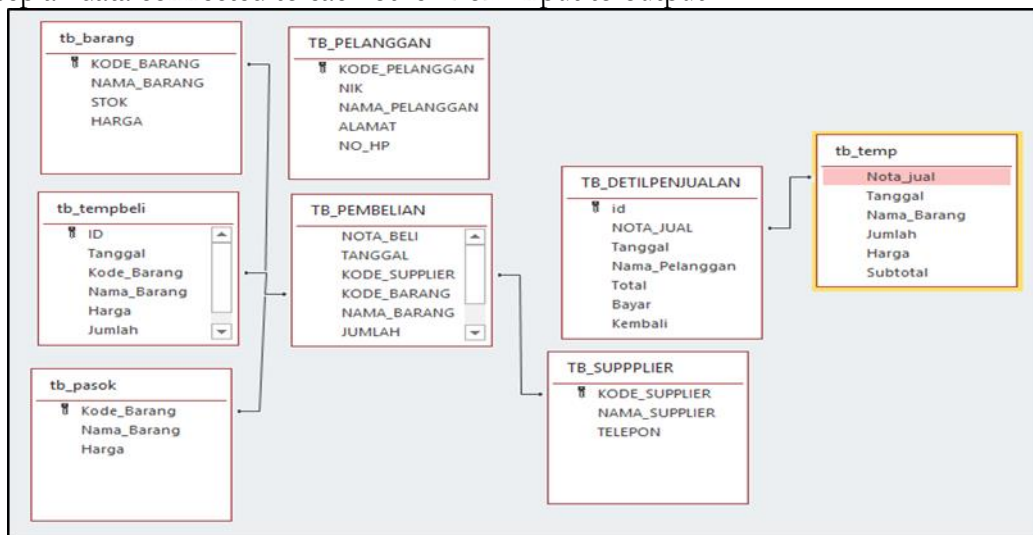

Figure 13. Table Relation Design

4. System Implementation

From the results of the analysis of the running manual system and the designs that have been made, the next stage is system implementation or the system implementation stage. This Desktop-Based Outdoor Equipment Purchasing and Sales Information System is used to collect data on goods, supplier data, customer data, and transactions that are only carried out offline at the Alambara Adventure store.

System implementation is carried out in the following stages:

a. Initial design of the system is carried out by designing the program language, design model and initial display design.

b. Interviews and confirmation of the initial design draft are carried out to find out the user's opinion, whether changes and adjustments are needed, or whether the design is approved.

c. Implementation of the final system by the user is carried out after the initial design plan is approved, and shows the final design of the system for trial use by the user.

The final form of a designed desktop-based buying and selling system looks as follows:

a. Login Form: Shows the initial stage to enter the system as a user by entering username and password. The login form is used as system security from access permissions, so that data security can be guaranteed [17].

Figure 14. Login Form

b. Main Menu Display: Shows the Main Menu available on the system consist of logout menus, item data, customer data, supplier data, sales transaction, purchase transaction, inventory reports, sales reports and purchase reports.
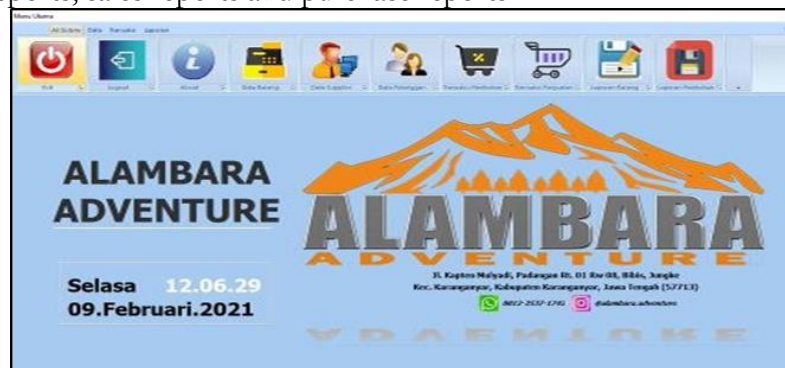

Figure 15. Main Menu

c. Inventory data Menu: Aims to display item data, add item data and change item prices if necessary. The way to add goods is to select the plus button on the item data form for automatic item code numbering. If the item name, price and stock are filled in, select the save button to store data.

Figure 16. Inventory data Menu

d. Customer and Supplier data Menu: Aims to display customer and supplier data and add data when needed. The step to add customer and supplier data is to select the add button. When the customer's name, address and phone have been filled in, select save.

Figure 17. Customer and Supplier data Menu

e. Transaction Menu: Shows the Sales and Purchase Transaction Menu, serves to enter the data of items that have been bought or sold.
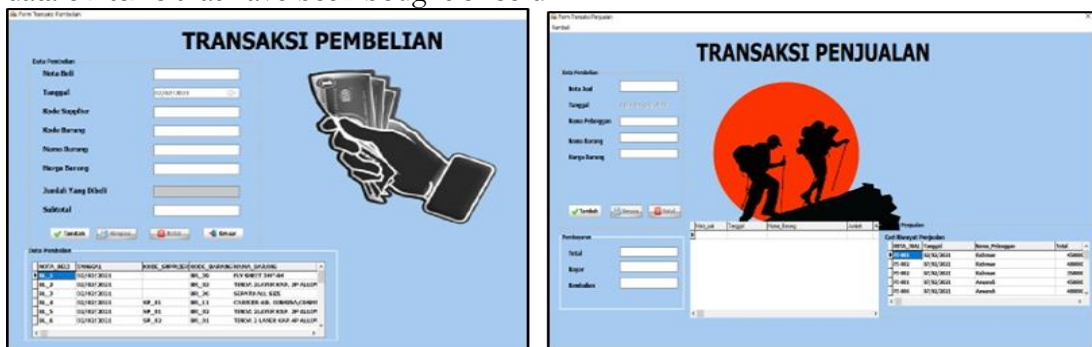

Figure 18. Transaction Menu

f. Report Menu: Shows the Menu and Display of Sales and Purchase Reports. To display reports, users must select a report filter as needed, namely reports per month or per year.
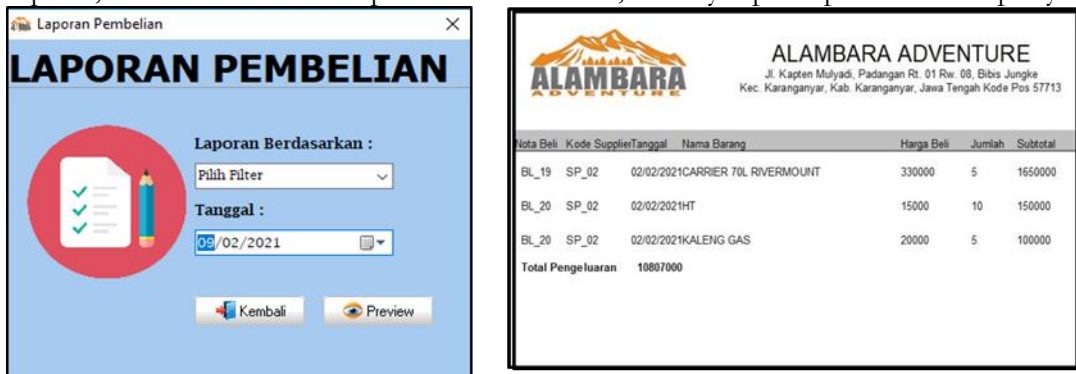

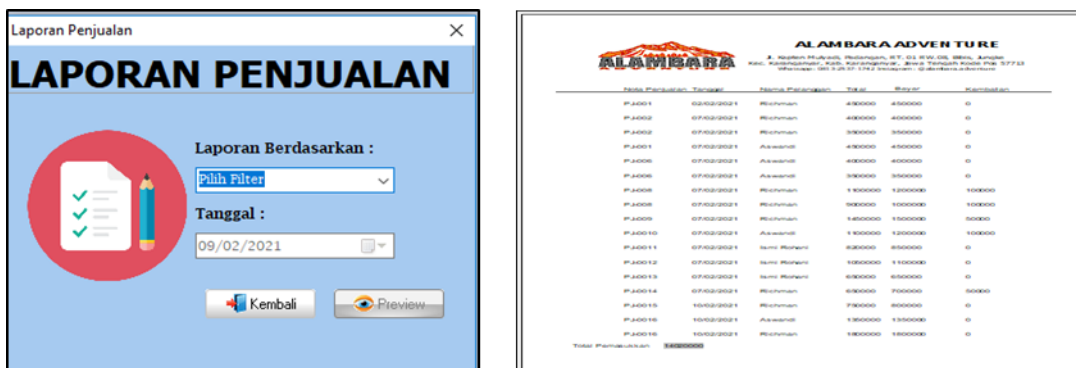
Figure 19. Purchase Report & Menu Appearances

Figure 20. Sales Report & Menu Appearances

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5. User Acceptance Test

 User Acceptance Test is a testing process carried out by the user with the output of a test result document which can be used as evidence that the software has been accepted and meets the requirements requested. The questionnaire was submitted to the owner and administration as users and managers of Alambara Adventure. The questionnaire delivered to users refers to Yusmita (2020) with a list of questions as follows [17].

Table 11. Questionairres List of User Acceptance Test

No	Questions	Test Value				
		SB	B	CB	KB	TB
Aspect of software engineering						
1	Is the application easy to use	-	2	-	-	-
2	Is the application smooth to use	-	2	-	-	-
3	Are the features of the application accessible	2	-	-	-	-
4	Is the user view is good	-	2	-	-	-
5	Is the application responsive well	-	2	-	-	-
Aspect of functionality						
6	Is the application display information properly	2	-	-	-	-
7	Is the user able to login properly	1	1	-	-	-
8	Can the admin use the menu properly	-	1	1	-	-
9	Is it easy for the admin to input data and view reports	-	2	-	-	-
Aspect of visual communication						
10	Is the interface display is good	-	2	-	-	-
11	Is the application menu display is good	-	2	-	-	-
12	Is the type and size of the font easy to read	-	2	-	-	-
13	Is the color combination on the display is good	-	2	-	-	-
14	Is the application's response to the input made good	2	-	-	-	-

Conclusion

 To overcome problems with the manual system running at the Alambara Adventure store in the form of difficulties in searching data, recording items that still use books, and requiring a long time to generate reports, a desktop-based sales and purchasing information system was designed. desktop-based systems have the advantage of being able to stand alone without the need for an internet connection. However, apart from the advantages, there are also disadvantages to this desktop-based system, including a centralized system only on a computer, it is inflexible and cannot be carried anywhere. The data has not been connected to external storage so if an error or damage occurs to the program, the data can be lost if it has not been backed up. The system or application is made using the Borland Delphi 7 (Pascal) programming language and uses Microsoft Access to manage the database. The system created includes processing goods data, customer data, supplier data, purchase transactions, sales transactions, and print reports and also can generate lists of goods, customer lists, supplier lists, goods reports, purchase reports, and sales reports. System design referred to previous studies, but provides novelty by adding a questionnaire to measure the level of user acceptance of the system. The system that was implemented at Alambara Adventure before was still manual so the design of this system aims to make work easier, especially related to the sales and purchase system. From the questionnaire it can be seen that the overall system created meets user needs and is easy to use, while what needs to be improved is the user's ability to operate the application because they are still not used to it. The designed system is actually easy and effective to use and well received by the Alambara Adventure store. This research can still be developed by adding other features of accounting information systems such as billing information systems, finance and others.

Acknowledgement

References

[1] M. Rahmawati, "Sistem Informasi Usaha Dagang Berbasis Desktop (Studi Kasus: Toko Sobana Ii)," *J. Teknol. Inform. dan Komput.*, vol. 5, no. 1, pp. 135–146, 2019, doi: 10.37012/jtik.v5i1.251.

[2] Yakub, *Pengantar Sistem Informasi*, Pertama. Graha Ilmu, 2012.

[3] S. & S. P. J. B. Romney, "Sistem Informasi Akuntansi," in *Sistem Informasi Akuntansi*, Jakarta Selatan: Salemba Empat, 2015.

[4] A. R. Zulfa and U. Rusmawan, "Sistem Informasi Penjualan Pembelian Dan Laporan Laba Rugi Berbasis Desktop," *Inf. Manag. Educ. Prof.*, vol. 3, no. 1, pp. 73–82, 2018.

[5] Ayu Aprianty, "EVALUASI SISTEM INFORMASI AKUNTANSI PENJUALAN KREDIT," *COSTINGJournal Econ. Bus. Account.*, vol. 03, no. 01, 2019.

[6] B. Priambodo, N. C. Wibowo, and A. B. Putra, "Sistem Pengelolaan Data Barang Berbasis Desktop," *J. Sist. Inf. Dan Bisnis Cerdas*, vol. 10, no. 2, p. 19, 2017, [Online]. Available: https://www.nesabamedia.com/pengertian-aplikasi/

[7] M. S. Fitriana, "Sistem Informasi Penjualan Berbasis Desktop dengan Metode Waterfall," *J. Technol. Res. Inf. Syst. Eng.*, vol. 8, no. 2, pp. 13–22, 2021.

[8] S. Herlina Ferliyanti, "Perancangan Sistem Penjualan Sparepart Berbasis Desktop," *J. AKRAB Juara*, vol. 6, no. November, p. 6, 2021.

[9] S. Supratno, I. Suciawan, and S. -, "Sistem Antarmuka Komputer Berbasis Borland Delphi 7.0 Untuk Pengaturan Lemparan Bola Pada Robot Pelatih Tenis Meja," *JREC (Journal Electr. Electron.*, vol. 9, no. 1, pp. 29–41, 2021, doi: 10.33558/jrec.v9i1.2914.

[10] H. Rohman, N. I. Rahmasari, and Y. Nurhaningrum, "Perancangan Sistem Informasi Pendaftaran Berbasis Microsoft Access di Klinik Pratama Umum Pelita Hati Banguntapan," *Semin. Nas. REKAM MEDIS Inf. Kesehat. Inov. Teknol. Inf. Untuk Mendukung Kerja PMIK Dalam Rangka Kendali Biaya Di Fasilitas Pelayanan Kesehat.*, pp. 31–38, 2019.

[11] N. P. L. Santiari and I. G. S. Rahayuda, "Perancangan Sistem Informasi Aset Perusahaan Pada CV di Bidang Properti," *is Best Account. Inf. Syst. Inf. Technol. Bus. Enterp. this is link OJS us*, vol. 7, no. 1, pp. 1–15, 2022, doi: 10.34010/aisthebest.v7i1.6127.

[12] F. Soufitri, "Perancangan Data Flow Diagram Untuk Sistem Informasi Sekolah (Studi Kasus Pada Smp Plus Terpadu)," *Ready Star*, vol. 2, no. 1, pp. 240–246, 2019.

[13] S. Seifermann, R. Heinrich, D. Werle, and R. Reussner, "Detecting violations of access control and information flow policies in data flow diagrams," *J. Syst. Softw.*, vol. 184, p. 111138, 2022, doi: 10.1016/j.jss.2021.111138.

[14] R. Ibrahim and S. Y. Yen, "Formalization of the Data Flow Diagram Rules for Consistency Check," *Int. J. Softw. Eng. Appl.*, vol. 1, no. 4, pp. 95–111, 2010, doi: 10.5121/ijsea.2010.1406.

[15] A. B. Chauduri, *Flowchart and Algorithm Basics*. 2020.

[16] R. Moerdani, "Development of Dekstop Based Customer Data Information System (Case Study: PDAM Tirta Fulawan Siemeulue Barat)," *Int. J. Softw. Eng. Comput. Sci.*, vol. 1, no. 1, p. 34, 2021, doi: 10.35870/ijsecs.v1i1.326.

[17] A. R. Yusmita, H. Anra, and H. Novriando, "Sistem Informasi Pelatihan pada Kantor Unit Pelaksana Teknis Latihan Kerja Industri (UPT LKI) Provinsi Kalimantan Barat," *J. Sist. dan Teknol. Inf.*, vol. 8, no. 2, p. 160, 2020, doi: 10.26418/justin.v8i2.36797.