Published online on the page : https://ejournal.uinbukittinggi.ac.id/index.php/ijokid/

Knowbase : International Journal of Knowledge in Database

| ISSN (Print) 2798-0758 | ISSN (Online) 2797-7501 |

Designing a Bandung Perfume Shop Sales Information System Using Python

Ryan Amanda[1,], Dona Kurnia[2], Akmal[1]*

[1]AMIK Bukittinggi, Bukittinggi, Indonesia
[2]Universitas Prima Nusantara, Bukittinggi, Indonesia

Article Information

Article History:
Accepted by the Editor: June 23, 2023
Final Revision: June 20, 2023
Published Online: June 30, 2023

Key Word

Python
Sales
Information System

Correspondence

E-mail: ryanamanda90@gmail.com*

A B S T R A C T

Bandung Perfume Shop is a company that sells perfume. Based on observations, it was discovered that the Bandung Perfume Shop Information System activities maintain use the traditional way. Sales data collecting or recording operations continue to rely on paper media, specifically notebooks, which are prone to loss and damage, implying that the document preparation system is inadequate. Similarly, everything is done conventionally when it comes to data recapitulation and providing information or reports. Given this occurrence and all of its flaws, particularly low work efficiency, an information system that can replace the prior way is required in order to create efficient work. Information System Design as a solution to the above phenomenon at the Bandung Perfume Shop using the Python application (Object Oriented Programming Language), starting from March 2023. The research aims to provide an information system that can simplify and accelerate employee work processes in processing sales data at the Bandung Perfume Shop. The results of this study were collected in the form of an output Information System from the Python program that was created in outline by automating the old (traditional) system to the new system. The results of this study are projected to have a substantial impact on the sales and recapitulation processes in the future, improving work efficiency at the Bandung Perfume Shop.

1. Introduction

A computer is an electronic system for manipulating data quickly and precisely and designed and organized to automatically receive and shop input data, process it and produce output under the supervision of a program instruction steps [1]. In its use, the system facilitates human activity with a small risk of error, however, many activities that are easier to use the system are still found to be carried out manually [2]. Computers are no longer a new item that is difficult to obtain, this is evidenced by the use of computers in everyday life in all aspects of life, along with technological developments, all things or information can be found through being accessed by intermediary computers [3].

In this era, the arrangement of letters, especially reports, is very important. It is backed by advancements in the information industry, which are in step with advances in science and technology. The higher the communication technology used, the faster the information delivery process will be [4]. Each organization has a different approach for presenting information; some use computers, while others still use the manual

method. This occurs because using a computer takes expensive expenditures; in addition to these variables, brainware is an impediment, as is the lack of external influence that enters the organization [5]. One of the important developments is the increasing need for data processing tools to produce the required information. The required information system must also be accurate and flexible [6].

Meanwhile, the Bandung Perfume Shop is a company that sells perfume. Based on the author's observations, it was discovered that the Bandung Perfume Shop Information System activities continue to use conventional methods. The activity of collecting and recording perfume sales transaction data from consumers is still done on paper, specifically in the form of a notebook. likewise, everything is done manually in the process of data recapitulation and creating information or reports (incoming goods reports, outgoing goods reports, sales, and profit and loss reports) for the distribution process, so all administrative activities for perfume sales do not run efficiently.

This research was conducted to design a new system to replace conventional systems in order to achieve an effective and efficient information system. This is due to the fact that when using a traditional system, there are many human errors such as incorrect records, forgetting to record, a low degree of accuracy in checking reports, missing reports, and so on. Based on this, the solution is a new system that is made with certain applications. The application used is Python, the choice of this application is because Python is an application that is efficient, easy to learn, has a simple User Interface, can run on various operating system platforms and of course is part of the Object-Oriented Programming (OOP) section.

OOP is a programming approach that uses objects and classes and its main advantage is the ease of making programs [7]. The formulation of the problem in this research is how to build an information system that can provide convenience, what are the steps for making it and how to design an object-based program ?.

2. Method

2.1. Method of Collecting Data

The following are the data collection procedures for the types and sources utilized in writing this research :

2.1.1. Data type

This section consists of primer data and secondary data. Primary data is information received directly from the source in the field of study. In this example, the data was received directly from the Bandung Perfume Shop, and it was then observed and recorded for the first time through observation and interviews. Secondary data is information gathered indirectly. The literature is gathered in this situation to obtain a theoretical foundation in the form of views, papers, statutes, or other legal resources.

2.1.2. Data collection technique

The data collection techniques used in the writing and discussion in the research are (a) field research, it is a research conducted with the research object itself. To obtain data, the authors use several data collection techniques namely interview (communicating directly with the parties involved in the problems faced by asking relevant questions), observation (conduct direct observations with the activities carried out by the people involved with the issues discussed); (b) library research, it is a way for obtaining materials for problem-solving as well as studying theories connected to the object of research using books from the library and other media information sources related to the problem.

2.2. Method of Analysis and Design

This is an applied research project that typically results in the development of an application program module that can be used to assist the activities of service provider information systems and perfume-selling service provider information systems. The methodology that is guided to complete this research that can be used in the computer field is the System Development Life Cycle (SDLC) or system

development life cycle. SDLC is a classic methodology used to develop, maintain, and use information systems [8]. The system development life cycle contains numerous stages; as the name suggests, SDLC moves from one step to the next and then returns to the beginning, completing a cycle [9]. The following describes the activities during the research according to the SDLC stages :

2.2.1. Indentification and selection

This phase marks the start of research efforts, with direct research conducted at the research site, namely the Bandung Perfume Shop. The stages of this activity include observing the implementation of the Information System at the Bandung Perfume Shop, starting from the process of recording or collecting data, recapitulating data, generating information, and providing information to people who need it. The results of these observations are then analyzed both in terms of strengths (S), weaknesses (W), opportunities (O), and threats (T) that might exist. After identifying and concluding all information system activities in the SWOT analysis formulation, the researcher provides it to management for selection or a project to construct an information system that can be carried out. That is, the main issue of this final project research is the results of the leadership selection/assignment, particularly information system activities related to sales.

2.2.2. Initiation and planning

After selecting an Information System development project in the first phase, which is related to sales, then the next activity is more focused on the selected Information System activities. Thus the initial activity (initiation) is to start analyzing the forms of reports needed, the types of data that must be collected, the personnel involved in Information System activities, and the work procedures used. Based on the findings of this more extensive research, a plan is developed (planned) to improve the use of computers in supporting Information System activities and sales at the Bandung Perfume Shop.

2.2.3. Analysis

The third phase is divided into three sub-phases in more detail, namely: (a) requirement determination, as it is known that the design of an application program module will be very useful if the design has the appropriate specifications or meets the wishes of the users (User Oriented). In this second phase, a return visit was made to the research location, namely the Bandung Perfume Shop. This visit was carried out to obtain detailed information regarding Information System activities for perfume sales service providers, including in this case the personnel involved in Information System activities, reception systems, types of data, work procedures, and tools used, as well as information regarding constraints experienced by personnel in carrying out these Information System activities and the desire to gain convenience when later using computer. To carry out this subphase, interviews, and personal discussions were conducted with a large number of individuals, particularly those who will utilize the application program module; (b) requirement strukturing, after determining all work constraints so far, as well as the desire of prospective users to get convenience in their work if they later use the application program, after conducting interviews and direct monitoring, then for the next structuring. The structuring activity in question is to create a model using the graphical modeling tool Unified Modeling Language (UML) such as Use case Diagrams, Activity Diagrams, Object Diagrams, Class Diagrams, Sequence Diagrams, and Component Diagrams. The resulting graphical model will then serve as a guide in designing a new computer-based information system more optimally; and (c) alternative generation design, basically, every personal system designer has an obligation to submit a number of alternative designs to prospective users. There are at least three (three) categories, namely the Low-end category, namely the development of an Information System that is not much different from the Information System that is currently running, only improving several aspects of activities in a more effective direction, the Middle-den category, where development proposals are more extensive and already contain proposed changes to the technology used, and the High-end category, where development proposals are more extensive and already contain proposed changes to the technology used. While the third category is High-end, namely the development proposal is to further enhance the sophistication of the

existing Information System so that it is computer-based optimally in all aspects of activity. However, in this study, the research only provided one package of proposals for the development of a new Information System for the Bandung Perfume Shop because it was confirmed after extensive testing and analysis that the proposed application program module used an object-oriented programming language for the new Information System, which was very reliable and did not require significant funding.

2.2.4. Logical design

In this phase, the arrangement of the underlying logic for the work of the application program being built is carried out, namely by describing the flowchart and the necessary database organization.

2.2.5. Physical design

This phase is a continuation of the 4th phase, namely by converting/translating the logic design that has been formed into a specified programming language or also known as the Coding process.

2.2.6. Implementation

As the name implies, this phase involves the implementation of the application program modules that have been developed, beginning with the installation of the proper Windows operating system and continuing with application programs for information systems selling perfume written in object-oriented programming languages.

2.2.7. Maintenance

This phase is the system maintenance phase, namely the possibility of updating data, replacing the database system, or converting it to the latest programming language someday.

The development stages can be seen in the following Figure 1.

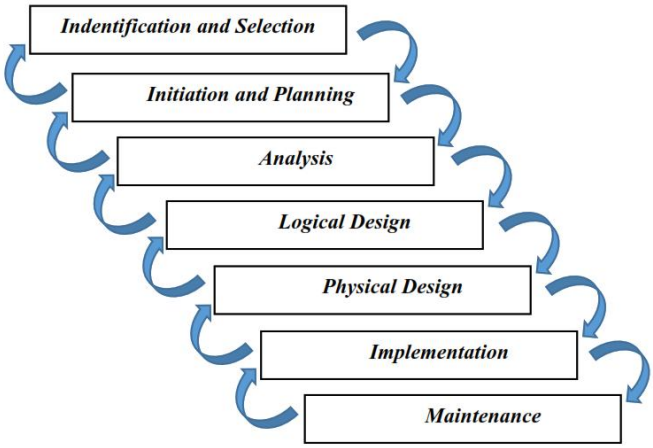

Figure 1. Diagram SDLC (System Development Life Cycle)

Besides that, we also describe the results of the analysis of research subjects so as to produce data in the form of old information system flows, use case diagrams and activity diagrams as follows:

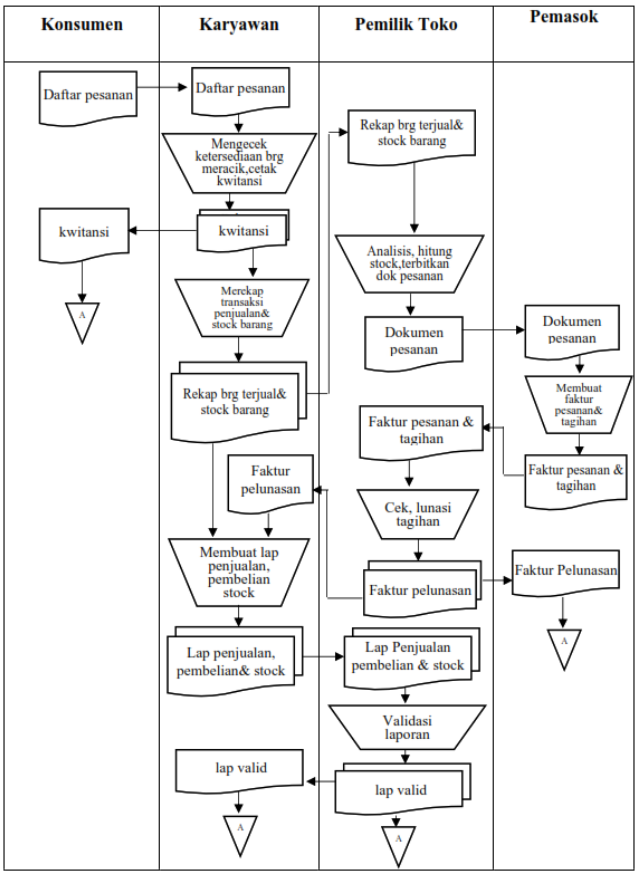

Figure 2. Previous Information System Flow

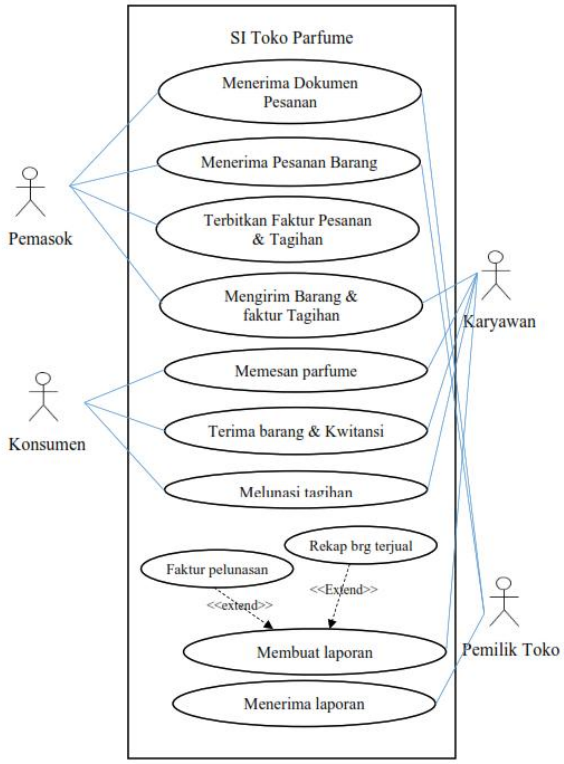

Figure 3. Previous Use Case Information System Diagram

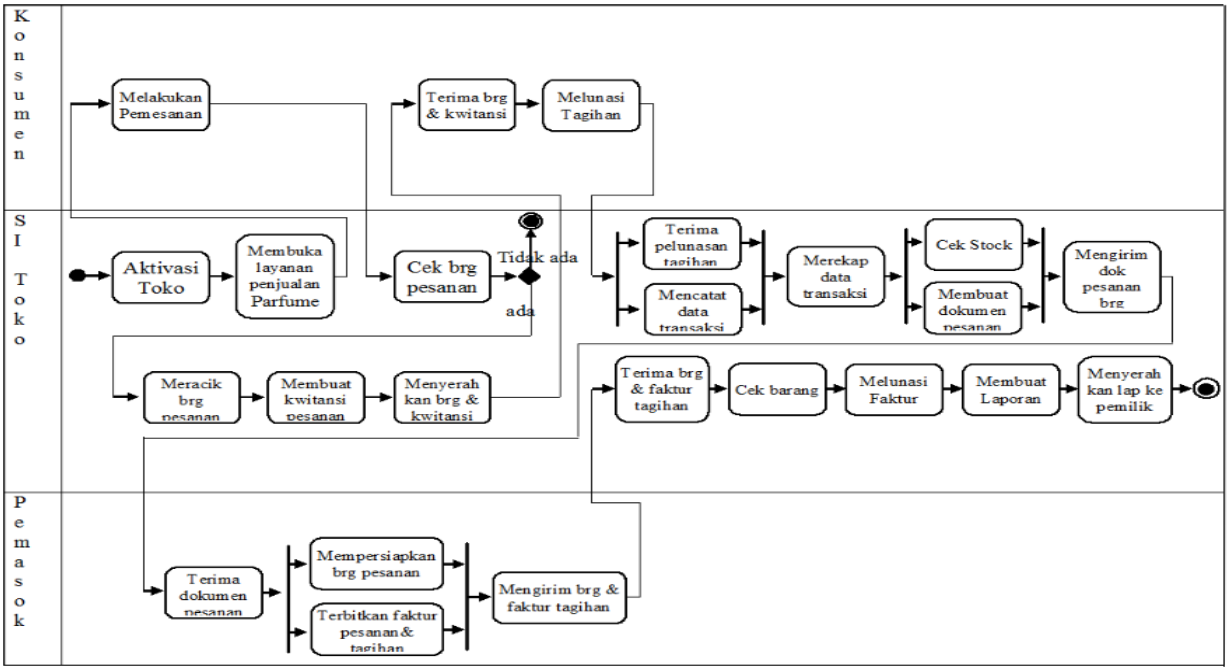

Figure 4. Previous Activity Diagram Information System

3. Results and Discussion

3.1. Research Steps

3.1.1. Initial step

The initial step in this research activity was to make direct visits and observations and discussions with the Bandung Perfume Shop related to sales activities. That is, evidence that the research was conducted in a system environment characterized by the first system characteristic, namely Bandung Perfume Shop has a physical boundary or (a) boundary place of research environment. The next characteristic of the system is existence; and (b) system components, namely employees and shop owners, who carry out information system activities include : (1) record perfume data that will be sold, and save the document; (2) compile perfume sales recapitulation; (3) make perfume sales reports and available perfume stocks; (4) employees distribute reports to the management or owners of the company.

3.1.2. SWOT analysis

SWOT analysis is a methodical assessment of numerous aspects to build firm strategy. This analysis is based on logic that may maximize strengths and opportunities while simultaneously minimizing weaknesses and threats [10]. Based on the results of direct monitoring at the Bandung Perfume Shop, an analysis of the strengths, weaknesses, opportunities and threats of information system activities that have occurred so far at research locations related to all forms of activity. The following is the result of a SWOT analysis : (a) strengths, at the Bandung perfume shop, currently what is becoming a strength is the service ethic in the shop where before the members start working they are given training on how to be a good shop assistant by taking materials on an online training platform or from experienced members, so that the customers like to shop at the store. Besides that, intensive promotions were carried out by bringing perfumes that could be tested in crowded places or events. Furthermore, the store is strategically located near a crossroads; (b) weaknesses, even if they have employed the traditional approach of book records as proof of reports, the input is still done by hand, which means that errors in writing, erroneous data, and data loss or damage are all possible; (c) opportunities, good and friendly service is the main attraction, another added advantage is the strategic location of the store which is easily accessible to consumers; and (d) threats, if innovation is not implemented in all elements of the shop's operations, the number of perfume shopssurrounding the Bandung Perfume shop will become a threat.

Based on the SWOT analysis above, the implementation of the SWOT is made in the following Table 1.

Table 1. Implementation of SWOT Analysis

Internal	**Strength**	**Weakness**
	a. Good service is one of the plus points of Bandung Perfume b. Intense promotion	Still using the conventional system in making reports
	Strategy	**Strategy**
	a. To be more stable on the strengths in point a, it is added with shop service training with a face-to-face system with interpersonal communication experts. b. The use of social media has allowed for continuous promotion.	Creating a new information system in the form of automated reporting to reduce human error
External	**Opportunity**	**Threat**
	Strategic location of the store	There are many perfume shops around the Bandung perfume shop
	Strategy	**Strategy**
	It is advisable to carry out promotions directly near the store, such as a free perfume tester.	Making a store brand bigger than other stores, if needed in the form of a large neon box so that it is beautiful to look at at night, by prioritizing a contemporary aesthetic.

3.1.3. New information system design

Use case diagram on the new system is as follows.

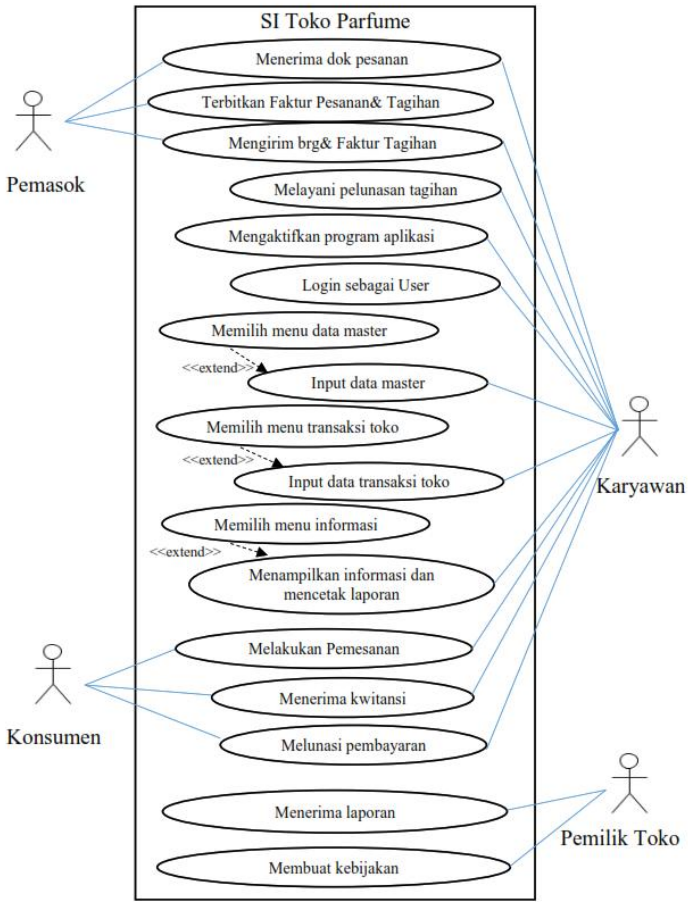

Figure 5. New Use Case Diagram

3.2. *Research Results in the Form of Information Systems*

3.2.1. *Program design*

The login page looks like the following Figure 6.

Figure 6. Login Form

This is the login screen, where we enter our username and password. Then the main menu as shown in Figure 7.

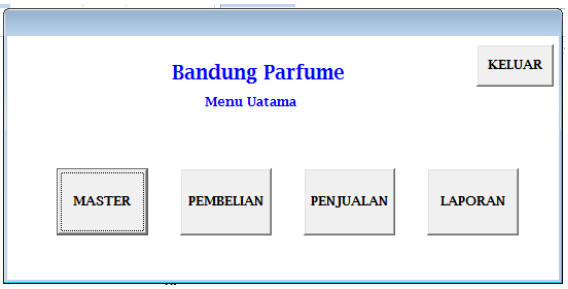

Figure 7. Main Menu Form

This menu contains four options, the contents of which correspond to the figure. Figure 8 is the display of the master form.

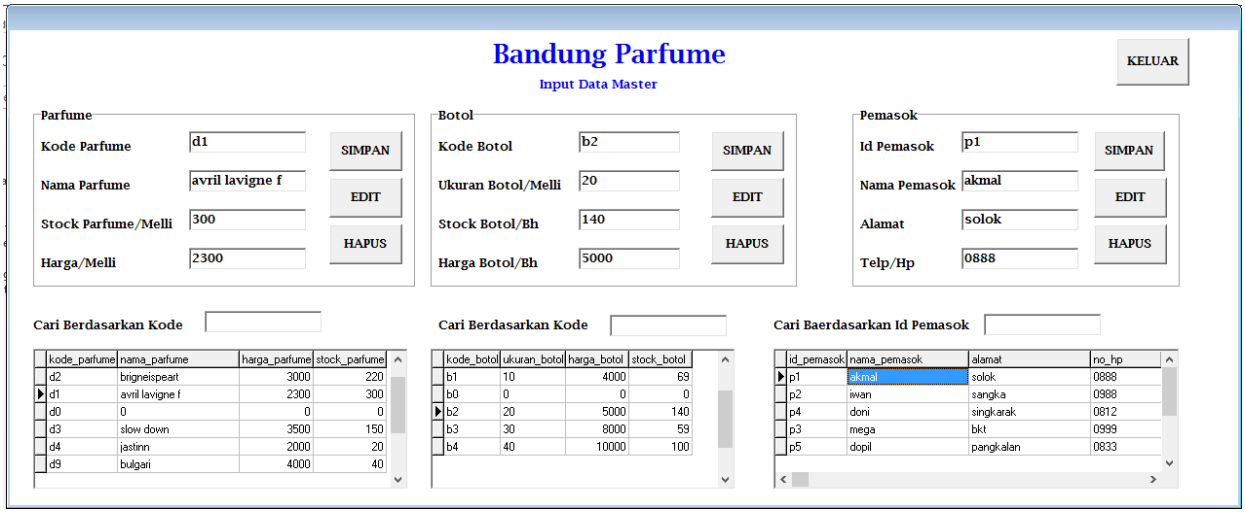

Figure 8. Master Form

In this form, user input items with all kinds of information about these items. Figure 9 is a purchase data form.

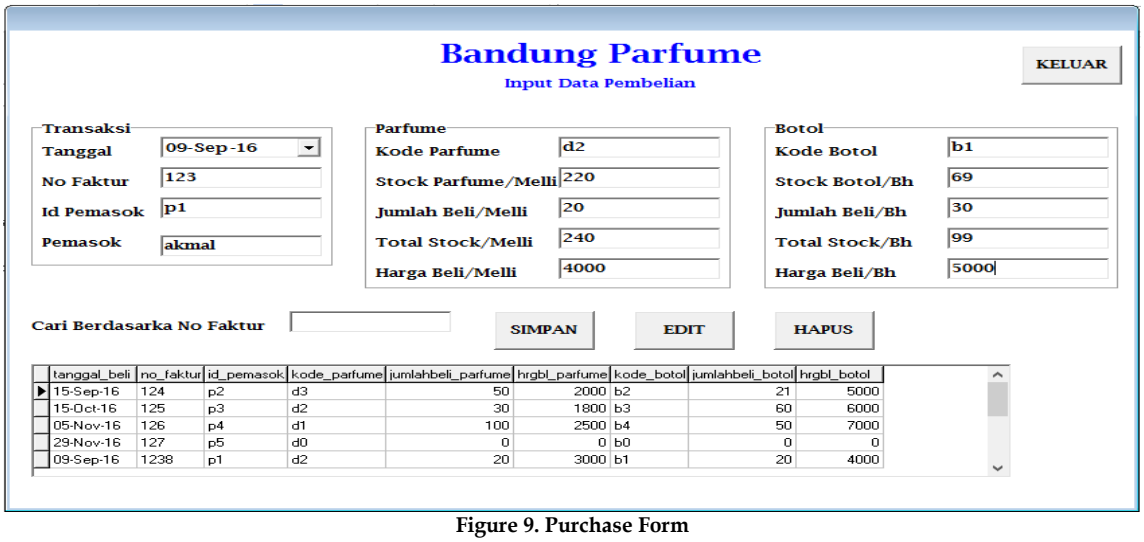

Figure 9. Purchase Form

The following is a purchase form in which there are 14 items that we must fill in and then they can be saved by clicking the save button. Next in Figure 10 is sales data.

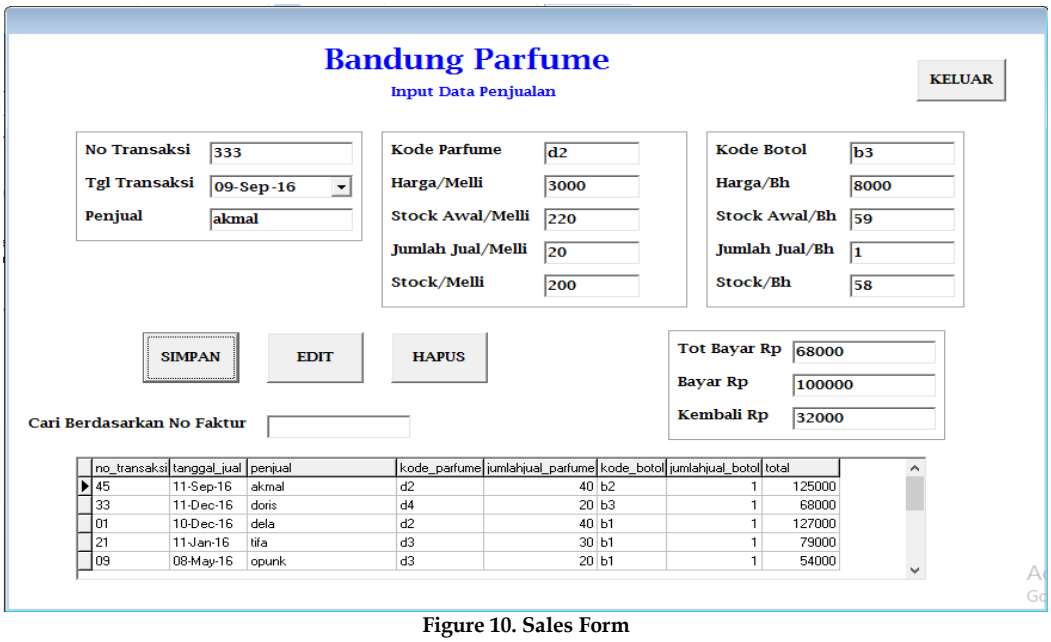

Figure 10. Sales Form

The following is a sales form with 16 items that we must fill in regarding product sales. Figure 11 is a report form.

Figure 11. Report Form

After completing the input choices in the previous part, we enter the report form, where we can print three different types of reports, as well as options for daily or monthly reports.

3.2.2. Report design

The following is an example of a perfume stock report contained in a table with 3 columns in PDF format.

Bandung Parfume
Laporan Stock Parfume
Jln. Havid Jalil km. 3 Tangah Jua Bukittinggi

Kode Parfume	Nama Parfume	Stock Parfume
d2	brigneispeart	210
d1	avril lavigne f	300
d0	0	0
d3	slow down	130
d4	jastinn	20

Bukittinggi, 24-Sep-2016

(Pemilik Toko)

Figure 12. Perfume Stock Report

The following is an example of a perfume bottle stock report contained in a table with 3 columns in PDF format.

Bandung Parfume
Laporan Stock Botol
Jln. Havid Jalil km. 3 Tangah Jua Bukittinggi

Kode Botol	Ukuran Botol	Stock Botol
b1	10	48
b0	0	0
b2	20	70
b3	30	59
b4	40	100

Bukittinggi, 24-Sep-2016

(Pemilik Toko)

Figure 13. Bottle Stock Report

The following is an example of a supplier report contained in a table with 4 columns in PDF format.

Bandung Parfume
Laporan Pemasok
Jln. Havid Jalil km. 3 Tangah Jua Bukittinggi

Id Pemasok	Nama Pemasok	Alamat	Telp/Hp
p1	akmal	solok	0888
p2	iwan	sangka	0988
p4	doni	singkarak	0812
p3	mega	bkt	0999
p5	dopil	pangkalan	0833

Bukittinggi, 24-Sep-2016

(Pemilik Toko)

Figure 14. Supplier Report

The following is an example of a purchase report per day contained in a table with 8 columns in PDF format.

Bandung Parfume
Laporan Pembelian Per Hari
Jln. Havid Jalil km. 3 Tangah Jua Bukittinggi

Tanggal 15-Oct-16

No Fak	Id Pemaso	Kd Parfume	Jml Beli P	Hrg Beli P	Kd Botol	Jml Beli Botol	Hrg Beli B
125	p3	d2	30	1,800	b3	60	6,000

Bukittinggi, 9/24/2016

(Pemilik Toko)

Figure 15. Purchase Reports Per Day

The following is an example of a purchase report per month contained in a table with 9 columns in PDF format.

Bandung Parfume
Laporan Pembelian Per Bulan
Jln. Havid Jalil km. 3 Tangah Jua Bukittinggi

Bulan November 2016

Tgl Beli	No Fak	Id Pemasok	Kd Parfume	Jml Beli P	Hrg Beli P	Kd Botol	Jml Beli Botol	Hrg Beli B
11/5/2016	126	p4	d1	100	2,500	b4	50	7,000
11/29/2016	127	p5	d0	0	0	b0	0	0

Bukittinggi, 9/24/2016

(Pemilik Toko)

Figure 16. Purchase Reports Per Month

The following is an example of a sales report per day contained in a table with 9 columns in PDF format.

Bandung Parfume
Laporan Penjualan Per Hari
Jln. Havid Jalil km. 3 Tangah Jua Bukittinggi

Tanggal 8-May-16

No Trans	Penjual	Kd Parfume	Hrg Jual P	Jml Jual P	Kd Botol	Hrg Jual B	Jml Jual B	Total
09	opunk	d3	3,500	20	b1	4,000	1	54,000
08	aku	d4	2,000	20	b3	8,000	1	48,000

Bukitinggi, 9/24/2016

(Pemilik Toko)

Figure 17. Sales Reports Per Day

The following is an example of a sales report per month contained in a table with 10 columns in PDF format.

Bandung Parfume
Laporan Penjualan Per Bulan
Jln. Havid Jalil km. 3 Tangah Jua Bukittinggi

Bulan December 2016

Tgl Jual	No Trans	Penjual	Kd Parfume	Hrg Jual P	Jml Jual P	Kd Botol	Hrg Jual B	Jml Jual B	Total
12/10/2016	01	dela	d2	3,000	40	b1	4,000	1	127,000
12/11/2016	33	doris	d4	2,000	20	b3	8,000	1	68,000

Bukitinggi, 9/24/2016

(Pemilik Toko)

Figure 18. Sales Reports Per Month

4. Conclusion

Following the research, analysis of problems, and design of information systems outlined in previous chapters, the author will provide conclusions and suggestions in this chapter that are expected to aid in the progress of the information system at the Bandung Perfume Shop, including (a) the existence of a sales information system at the Bandung Perfume Shop is believed to have ramifications for the process of capturing transaction data more easily and efficiently; (b) the use of a sales information system at Bandung Perfume Shop is intended to reduce human errors; (c) the existence of a sales information system application at Bandung Perfume Shop has implications for the process of making reports more quickly and precisely; and (d) the existence of a sales information system application at Bandung Perfume Shop, data will be saved in the database without the buildup of archives.

References

[1] M. Mustaridi, "Upaya Meningkatan Kemampuan Guru Dalam Menggunakan Komputer Pada Pembelajaran Melalui Pelatihan Tik Di Smk Negeri 1 Mesuji Raya," *J. Edukasi Kaji. Ilmu Pendidik.*, vol. 6, no. 2, pp. 199–210, 2020, doi: 10.51836/je.v6i2.156.

[2] M. Attanggo, S. Andryana, and E. Mardiani, "Perancangan Sistem Informasi Manajemen (Sim) Penjualan Pakaian," *JIPI (Jurnal Ilm. Penelit. dan Pembelajaran Inform.*, vol. 6, no. 1, pp. 106–113, 2021, doi: 10.29100/jipi.v6i1.1920.

[3] M. Ahmadar, P. Perwito, and C. Taufik, "Perancangan Sistem Informasi Penjualan Berbasis Web Pada Rahayu Photo Copy Dengan Database MySQL," *Dharmakarya*, vol. 10, no. 4, p. 284, 2021, doi: 10.24198/dharmakarya.v10i4.35873.

[4] S. Hidayatuloh and S. Nursofiana, "Analisis dan Perancangan Sistem Informasi Pengelolaan Surat Diskominfo Payakumbuh," *J. Esensi Infokom J. Esensi Sist. Inf. dan Sist. Komput.*, vol. 5, no. 2, pp. 14–22, 2022, doi: 10.55886/infokom.v5i2.276.

[5] R. Mahmud and H. J. Suripatty, "Aplikasi Pemesanan Kamar Hotel Menggunakan Visual Basic 6.0 (Studi Kasus Hotel Getz Nabire)," *Teknol. dan Rekayasa*, vol. 4, no. 1, pp. 1–9, 2019.

[6] A. Dharmawati *et al.*, "Sistem informasi pelayanan speed boat pada baihaqi service," 2015.

[7] R. Endang, S. Jafar, and O. Dony, "Pembelajaran Pemrograman Berorientasi Objek (Object Oriented Programming) Berbasis Project Based Learning," *Informatics Educ. Prof.*, vol. 2, no. 1, pp. 95 – 104, 2017.

[8] D. Sukrianto and S. Agustina, "Pemanfaatan Sms Gateway Pada Sistem Informasi Berbasis Web.," *J. Intra Tech*, vol. 2, no. 2, pp. 78–90, 2018.

[9] Fatimah and Samsudin, "Perancangan Sistem Informasi E-Jurnal Pada Prodi Sistem Informasi Diuniversitas Islam Indragiri," *J. Perangkat Lunak*, vol. 1, no. 1, pp. 33–49, 2019, doi: 10.32520/jupel.v1i1.782.

[10] A. M. I. Astuti and S. Ratnawati, "Analisis SWOT Dalam Menentukan Strategi Pemasaran," *J. Ilmu Manaj.*, vol. 17, no. 2, pp. 58–70, 2020.