Application-based sales system interface design for dumpling noodles XYZ

Ivo Andika Hasugian*, Fernando, Supriadi, Erica Luhur
Industrial Engineering Department, Universitas Sumatera Utara, Indonesia

*E-mail: ivo.andika@usu.ac.id

Abstract. The sales system at Dumpling Noodles XYZ currently uses manual sales recording methods so that sales reports made so far are not stored properly. This certainly hinders business development because it is difficult to conduct business evaluations. For business development, this company wants an application that can improve the existing business sales system. Interface design needs to be documented to make it easier to communicate, coordinate all data and information needs with system users so that the designed system can be implemented properly according to the needs of system users. In this paper, the DFD of each level will be explained to produce the desired design. This application has a view consisting of the initial view, main view, customer registration form, supplier registration form, customer purchase form and supplier purchase form. The research results are expected to assist companies in making daily and monthly reports easily so as to increase efficiency and effectiveness in existing data processing.

1. Introduction
Noodles are a staple nourishment in numerous societies produced using unleavened batter which is extended, expelled, or folded level and cut into one of an assortment of shapes. Noodles are typically cooked in bubbling water, now and then with cooking oil or salt included. Noodles are regularly presented with a going with sauce or in soup [7]. Noodles are an alternative food to replace rice that is widely consumed by the public. Noodles have become popular among the public because of their low price and simple processing and presentation. Noodles contain lots of carbohydrates, which contribute a lot of energy to the body so that the noodles can be used as a substitute for rice. The people's penchant for consuming noodles is increasing over time. Consumption of instant noodles increased by about 25% per year. In the early 2000s, this figure was estimated to continue to increase by around 15% per year [10]. This can be a development of business opportunities, so that taste and quality are needed.

Dumpling noodles XYZ is one of the businesses that sells dumpling noodles and this business is one of the producers of ingredients for Dumpling Noodles businesses in Medan Kota District. The product produced by this business is a lump of noodles that are ready to be cooked into Dumpling Noodles. Dumpling Noodles XYZ uses machines such as mixing machines, press machines, cutting machines. The main ingredients in making these noodles are wheat flour, oil and eggs. The sales system for Dumpling Noodles XYZ currently uses manual sales records. For business development, this company wants to make an application that can improve the business sales system that is made based on needs. The development of technology at this time more rapidly so as to improve the ease and facilities as support of these developments. Information technology plays an important role in conveying messages in both print and electronic media [8]. This application is expected to be a company evaluation tool for future business development.

2. Literature Review
The system can be defined as a collection of elements, components, or variables that are organized, dependent on each other, interact and are integrated. Information is data that has been clarified for use
in the decision-making process. Information can be about raw data, structured data, the capacity of a communication channel, and so on [1]. The characteristics of a system are as follows [2]:

1. System Components (Components)
   The components in the system can be in the form of a subsystem, each subsystem has its own characteristics in carrying out its function.

2. System Boundary (Boundary)
   The scope of the system is an area that borders the system with other systems.

3. Environment outside the system (Environment)
   Environment outside the system is everything that is outside the scope that affects the system.

4. System Connectors (Interface)
   System liaison connects subsystems with other subsystems.

5. System Input (Input)
   System input is the energy put into the system.

6. System Output (Output)
   Peripatetic System Output The result of energy that has been processed and classified.

7. Processor (Process)
   A system certainly has a process that converts input into output.

8. System Goals (Objective)
   A system has definite goals and is deterministic.

A data flow diagram illustrates the processes, data stores, and external entities in a business or other system and the connecting data flows [9]. Data Flow Diagrams (DFD) are graphic techniques that describe the flow of information and transformations that are applied when data moves from input data to output [3]. Data Flow Diagrams (DFD) can be defined and analyzed the data requirements required in accordance with the required information system processes [4]. The Data Flow Diagram (DFD) explains to the user how the flow of system-functions will work. The designed grooves consist of data inputs and processes on diagrams that can be viewed from the system design [11].

Visual Studio 2010 is basically a computer programming language, and is also often referred to as a means of producing windows-based application programs. Visual Basic is an object-centered programming language (Object Oriented Programming) used in making Windows applications in the form of a Graphical User Interface. The Visual Studio language is quite simple and uses commonly used English words. In addition, the visual development tools allow us to develop Windows-based, mouse-driven and highly efficient applications [5].

3. Methodology
   In conducting research, there are several stages used, namely the stage of data collection, data processing, then conclusions. Data collection was carried out through direct field observations and interviews. Data processing is done by designing an information system based on DFD diagrams and using a simple application using Netbeans software.

4. Result and Discussion
   4.1. System analysis
   In making a system design, it is necessary to know an explanation of how the system works so that the obstacles or problems faced by these Dumpling Noodles XYZ can be known. The narrative obtained based on the research is as follows.

1. Process of Purchasing Goods
   In fulfilling existing orders in the production process, raw materials are needed. In fulfilling the demand for raw materials, orders are made to the supplier. After the order or item arrives, it is checked according to the order of the goods made. After checking is complete or the request is in accordance, payment is made according to the agreed price agreement.

2. Process of Selling Goods
In the purchase process at Mie Pangsit are carried out according to customer orders. Customers order by telephone, then the order will be recorded and made by the owner according to a predetermined number of requests. After the specified order has been fulfilled, a payment process is carried out and the customer receives the goods.

The information system for the Dumpling Noodles XYZ can be seen in Figures 1 to 4.

**Figure 1. DFD Level 0**

**Figure 2. DFD Level 1**
4.2. Entity Relationship Diagram (ERD)

Entity Relationship Diagram shows the involvement relationship between entities between databases that are stored randomly [6]. Entity Relationship Diagram of the Dumpling Noodles XYZ information system can be seen in Figure 5.
4.3. Interface Design Design
The design of the interface design for Dumpling Noodles XYZ can be seen as follows.
1. Initial view. At the initial screen, the admin enters a password to log in first. This is done so that all recorded data can be gated. The initial display of the Dumpling Noodles XYZ interface can be seen in Figure 6.

2. Main view. The main view displays the choices the admin will make. The main display contains customer registration, supplier registration, customer purchases and supplier purchases. The main display of the Dumpling Noodles XYZ interface can be seen in Figure 7.
3. Customer Registration Form. The customer registration form contains information about customer personal data. Information or data required for customer registration, such as the name and complete address of the customer. The display of Dumpling Noodles XYZ customer registration can be seen in Figure 8.

4. Supplier Registration Form. The supplier registration form contains information about existing suppliers. This is done to make it easier when you want to make transactions or orders according to the required materials. The data required for supplier registration such as name, address, and products provided. The registration display for Dumpling Noodles supplier can be seen in Figure 9.
5. Customer Purchase Form. The customer purchase form contains information on the order made. The data required is the name of the customer, the address of the order, the number of orders. Based on the data that has been obtained, the total price that the customer needs to pay makes it easier to calculate the transaction. The display of customers of Dumpling Noodles can be seen in Figure 10.

6. Supplier Purchase Form. The supplier purchase form contains information on orders made to suppliers. This is done to see how much expenditure has been made and to determine the amount of material needed to carry out the production process. The data required is the transaction number, supplier name, supplier address, product purchased, purchase amount, unit price and total price to be paid. Based on the data that has been obtained, it can be done by estimating the expenditure calculation by Dumpling Noodles. The display of purchasing Dumpling Noodles SME suppliers can be seen in Figure 11.
5. Conclusion
The program application for Dumpling Noodles XYZ is made with the help of Visual Studio software. This application helps this business make the process of recording, keeping sales records and the results accurately. This application has a display consisting of the initial display, main view, customer registration form, supplier registration form, customer purchase form and supplier purchase form. This application is expected to help companies in making daily and monthly reports easily so as to increase efficiency and effectiveness in processing existing data.

Acknowledgement
The author is grateful to the Universitas Sumatera Utara for all support in publishing this paper. We also thank everyone who helped in completing this paper.

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