E-BAKERY ORDERING SYSTEM

(E-BOS)

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ABSTRACT

This system is been develop in order to fulfill the "Project Sarjana Muda" requirement which is entitle E-Bakery Ordering System (E-BOS). This system is based on the case study from the Dislee Cake House (DCH), situated in Benteng, Kuantan. E-BOS is a system which are able the DCH customers do the online cakes, cookies and breads ordering via the internet and also the administrator of the cake house able to manage all the products ordering and customers information in more effective which, the all the information will be keep into the database. After done some survey and interviews with the owner of the DCH, Mr Sim Yeow there is no any online application had been implemented in the cake house, furthermore, all the products and customers information are kept in file based system. As these problems are concerned, E-BOS had been designed to overcome those problems whereby, this system is basically is a web based application which are able the customers to do their bakeries ordering activities just via the internet and the DCH itself able to manage their activities detail such as customers ordering, products and customers information effectively and more manageable which means most of the activities that involve in this DCH had been computerized. Last but not least, with the help of E-BOS, the ordering processes can be done easily, more manageable customers and products information and also most of the manuals activities of ordering and sales management are computerized.

ABSTRAK

Sistem ini di laksanakan untuk memenuhi keperluan "Projek Sarjana Muda" dimana, projek in bertajuk *"E-Bakery Ordering System"* (E-BOS). Sistem ini adalah bedasarkan kajian kes yang dilaksanakan di Dislee Cake House (DCH) yang terletak di Benteng, Kuantan. "E-BOS" adalah sebuah system dimana pelanggan DCH boleh membuat pesanan kek, biskut and juga roti secara *online*. Disamping itu, pihak pengurus DCH dapat menyimpan data-data yang berkaitan dengan pesanan dan data pelanggan akan di simpan di dalam pengkalan data. Setelah menjalankan kaji selidik dan temuramah bersama pemilik DCH En. Sim Yeow, tiada online aplikasi yang telah dilaksanakan di kedai kek ini. Tambahan pula, kesemua data produk and pelanggan di simpan di dalam sistem fail. Memandangkan ini adalah satu masalah yang perlu di ambil kira, E-BOS direka untuk mengatasi masalah yang dihadapi. Sistem ini adalah sebuah web aplikasi dimana pelanggan dapat membuat pesanan kek, biskut dan roti melalui internet dan pihak DCH itu sendiri dapat menguruskan aktiviti seperti pesanan dari pelanggan, data produk and data pelanggan dengan lebih efektif dan teratur. Ini kerana sebahagian dari aktiviti yang terlibat di laksanakan dengan menggunakan komputer. Akhir sekali, dengan adanya E-BOS, ianya diharapkan proses pesanan produk akan lebih mudah, teratur dan sebahagian aktiviti yang berkaitan dengan pesanan dari pelanggan dapat di komputerkan.

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E-BOS	E- Bakery Ordering System
DCH	Dislee Cake House
PSM	Projek Sarjana Muda
SDLC	System Development Life Cycle

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CHAPTER 1

INTRODUCTION

1.1 Introduction

As mentioned previously, the system that had been trying to develop is entitled the E-Bakery Ordering System (E-BOS) , with the usage of this system, the DCH customer are able to order product such as cakes, cookies and breads via the internet. This will make the ordering process which had been done manually easier, whereby with the internet access or connection, customers are able to make the purchasing of products within seconds. On the other hand, this system also helps the DCH management manage the ordering and sales information such as products and customers information in more effective and precise way. Finally all the information will be inserted into the DCS databases, which previously all the ordering details and product information of the DCH will be keep into the file based system.

1.2 Problem Statement

Generally, all the management regarding to the sales and customers of the DCH are done manually. Problems occur when the DCH administrator kept track of the previous data, extra time is needed to search the history of the sales information or the

customer's information. Besides, DCH don't have any opportunities to advertise their products to the community. Therefore, there would be some limitation to market their products. This is the problem to be solved if the DCH want to increase their sales performances.

As mentioned in the previous chapter, all the products ordering are also being done manually whereas customers have to call or walk in to the cake house and do the ordering. This will waste the customer's time if they have to walk in to the cake house and only the customers with the cake house phone number are able to make phone call for cakes delivery. These problems is minimize the sales performance and the business opportunities because only regular customers and customers near location will come to the cake house, but with E-BOS all those problems can be solved, DCH management can advertise their product into the internet so that the information will widely spread to the community and also customer can just click at the pictures and fill up a form, the ordering is done. People will prefer things that can make them feel easy to get and also save their precious time. Therefore this system can really help not only to the customer's side but also to the DCH itself.

Last but not least the information and data management itself, all are kept in file based system which it is very difficult to keep track of the history and this is not safe actually. Once the file is missing there would be a big problem because most of the time it would be no back up for the files and when catastrophe occurs the files will lost. This is the big issues and the risk that need to be concerned if all the information's are kept in file based system.

1.3 Objectives

With this system, the targets that are trying to be achieved are as follow:

(i) DCH customers able to do online products ordering which is via the internet.

(ii) All the DCH ordering information, sales and customers information will be computerized and keep the data into the database

(iii) Develop E-BOS prototype for Dislee Cake House using the web based environment.

1.4 Scopes

Basically the domain area of E-BOS can be described as the following:

(i) Developing E-BOS Prototype.

In this project, a prototyping of E-BOS will be developed for the DCH to run their daily customers ordering process.

(ii) Implemented in the DCH, Benteng Kuantan.

This system will be used by the DCH as the client and system owner of E-BOS

(iii) Accessible by DCH customers and also open for public

E-BOS is not limited to the DCH regular customers only, but also open to the public who are interested to do the online ordering of the DCH products.

(iv) Testing on the Windows environment

This system will be apply and testing by using Windows environment.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Going online is an excellent way of scaling up and spreading the customer base. Statistics show that the number of people buying online is steadily increasing and so is the volume of transactions happening online. Amazon.com web site for example, shows that it is possible to sell products online, which is considered as something that "need to touch, feel and see" before buying. The internet unable to replicate the sensory experience but it brings in lot of other benefits like ease of shopping, more choices, and safe the customers time and etc.

Besides, going online is more than scanning some pictures and putting up an online catalogue. There are various factors that involved in the successful of any online application. The E-BOS is just like the other online sales application which the only different is that the products are cakes, cookies and breads. In Malaysia itself, not many cake houses have their own web site and do the online business. This is because of the trends in Malaysia itself whereby most of Malaysian still need to touch, feel and see the products before buying. Furthermore, the customers still have the doubt feelings of their

purchasing deliverable, they keep arguing whether they can really get the product or not. All those perceptions can minimize the shop or business organization interest to practice the online sales application as well.

2.2 Comparison of Current System

Basically it can be define that the E-BOS had the similarity with the other bakery's house, web based application system that also applying the online products ordering and managing the sales information by using the capabilities of a system which mean all the processes had been computerized. This can be very helpful for a big bakery's house to manage their daily operation as well. Big bakery's house may have many customers, employees and products to be managed; therefore with the help of system such as the E-BOS it will minimize the man power in order to run the business. Furthermore all the activities and transaction can be run smoothly without an error.

On the other hand, E-BOS slightly is a small system compared to existing system in the market nowadays. E-BOS just apply a part of function or activities that always available in common online ordering application. This is because E-BOS is just a simple online ordering application without having any money or credit card transaction. E-BOS only takes the customers order and confirmation will be done via the customer's email and phone number. Regarding to the terms of payment it still being done manually whereby the DCH customers have to come to the cake house and pay for the purchasing or make the payment after get the delivery from the cake house which is only available in Kuantan area.

The reason of no online money or credit card transaction is that DCH is trying to get the feedback of the online ordering application at the first stage and trying to implement this approach to the community. As mentioned previously, not many people like to pay for the purchasing until they get the products as well. E-BOS is trying to

help the ordering process easier and faster and help busy customer to do their shopping activities. Besides, in order to develop a system with the involvement of credit card transaction, development experiences and also the security issues itself. Many issues should be considered before this technology been implemented. Therefore, to make sure that the order is not a "fraud" order, the DCH administrator will contact the person via the email and phone call. E-BOS is trying to implement the Pizza Hut Delivery application and process. Just like Pizza Hut, there is no online ordering but they get the order thru the phone calls which mean, no money transactions until the customers get the pizza. Therefore, the phone call usage can make sense if the same technique of confirmation goes to the E-BOS.

After doing some survey with the pizza hut outlets, they mentioned that after receiving the order from customers; they will call the customers to get the confirmation again. Regarding to the "fraud" ordering it somehow happened but with a very few cases, the ratio is about 1:20 which mean after get the confirmation the possibility that the ordering is not valid is 0.05 percent. But the risk is always there. On the other hand, this is not a big issue since there would be more benefits that the DCH will get by the usage of E-BOS.

2.3 Study of Related Current System

In this section, the things that will be discussed are on the technologies, software and tools being used by the Duke's Bakery House in order to develop the system.

2.3.1 Study on Duke's Bakery House Application

In the DCH itself there is no online system or application had been implemented, but if compared with the existing system it is quite a lot in market nowadays. For example Duke's Bakery which situated in London, is one example of a bakery house that is totally using the system to run and manage their sales activities. Furthermore, all the inventories, customers, employees and product information are integrated in a system. Duke's Bakery is a large, busy, and well-known neighborhood bakery with a loyal following. To continue their personalized service while scaling the business to accommodate the dozens of new customers they get every month, they need to use a system to make all the processes easier and faster.

The enhanced security architecture is concerned which this will lets Duke's safely expand the business into electronic commerce so it can reach people who do not live in the area. Beside, Duke's chose the Java platform architecture because it makes it easy and inexpensive to expand the application as their business requirements change and grow. Another example is Bobundt bakery house; they also have their own system that can manage their daily operation as well.

2.3.2 Method and Tools of Current System

Basically, most of the online sales applications have the similarities to each other but it depends to the developer, what method and tools that they are going to apply and use, and sometimes the system owner point of views were counted in making the decisions. For example the Duke's bakery house, the tools and method that they used are as the following

(i) Swing Components

Swing is ideal for creating the user interface. The components are highly configurable and use images easily. Duke's decided to display sales, customer, and vendor information using Swing components such as tables, trees, labels, text fields, and text areas. Besides, Duke's also decided to include photographs with the employee information and use images of baked goods in the user interface. For example, the delicious and proprietary cake recipes that have made them so popular over the years can be viewed by choosing a button with a cake on it.

(ii) Java 2D

The Java 2D APIs provide ways to enhance the user interface with color, graphics, and images to make it easy to understand and use. "This is because she knows the less time her employees spend learning and using the new system, the happier and more productive they are". (Rao, M 2003)
Java 2D is to help customers choose a cake's appearance. Duke's included a module in the application that uses a color chooser for selecting icings, and 2D text for demonstrating the appearance of the text on cakes for special occasions like birthdays and anniversaries.

(iii) Cryptography

Duke's is working out relationships with some of their suppliers for automated electronic ordering. The JDK 1.2 cryptography API and Java Cryptography Extension (JCE 1.2) by separate download allow Duke's, the suppliers, and their banks to use digital signatures and certificates to authorize and verify large orders with cash transfers in the thousands of dollars.

(iv) JDBC

The Java platform is ideal for this online application. The rich set of Java APIs gives a lot to work with in designing and writing the application. JDBC™ is generally to access data in their current database. If they change databases or add another database, the existing JDBC code does not need to be changed.

(v) JavaBeans

JavaBeans™ is used in order to build some of the general parts of the application. This way is how the existing code can be reused in other similar business applications running on the Java platform.

(vi) Reference Objects and Collections

The Reference Objects API is to create soft references to objects that might be left in memory so the garbage collector has the option of reclaiming the memory if need be. This situation could arise when customers choose custom cake decorations online. As they browse through and try the multitude of decorating possibilities, a number of graphical and image objects could be left in memory especially if the customer or employee does not remember to quit out of this part of the application.

Duke's Bakery House also used one of the classes in the collections API to simulate a first in first out (FIFO) queue. This way, the application can manage the floor when customers take a number and wait their turn for service.

Table 2.1: Comparison of current system with E-Bakery Ordering System

Current System	E- Bakery Ordering System
Web Based Application	Web Based Application
Able to do online ordering	Customers also able to do online ordering
Complicated, cover many elements such as inventory details, employees information and customers details	Simpler, focus only on the customers ordering and products information.
With credit card transactions and money transfer	Without credit card transactions and money transfer
Suitable for huge bakery's house	Suitable for small bakery's house
High development cost	Less development cost
For international business application	Only focus for Kuantan area

2.4 Method and Tools for E- Bakery Ordering System

Correct methods and tools will be very helpful in developing the E-BOS. Many aspects should be consider in order to make the development processes smooth and effectively. The tools and method that had been applying in the E-BOS are as the following:

2.4.1 PHP

PHP originally stood for Personal Home Page. The updated version of PHP4 incorporates the Zend engine so that PHP scripting can be used with any combination of Web Server, operating system and platform. PHP also allow web developers to write dynamically generated pages quickly. Its usefulness includes the ability to read and write files, gather and process the data, send data via email, access and manipulates database records, read and write cookies, maintain data in session variables, facilitate user authentication, provide data encryption and much more.

Meanwhile in Web programming, PHP is a script language and interpreter that is freely available and used primarily on Linux Web servers. PHP originally derived from Personal Home Page Tools, now stands for PHP: Hypertext Preprocessor, which the PHP FAQ describes as a "recursive acronym." PHP is an alternative to Microsoft's Active Server Page (ASP) technology. As with ASP, the PHP script is embedded within a Web page along with its HTML. Before the page is sent to a user that has requested it, the Web server calls PHP to interpret and perform the operations called for in the PHP script. An HTML page that includes a PHP script is typically given a file name suffix of ".php" ".php3" or ".phtml". Like ASP, PHP can be thought of as "dynamic HTML pages," since content will vary based on the results of interpreting the script. PHP is free and offered under an open source license.