Acta Electronica Malaysia (AEM)
DOI : http://doi.org/10.26480/aem.02.2018.14.19

ISSN: 2590-4043 (online)
CODEN : AEMCDV

SWEET8BAKERY BOOKING SYSTEM

Nor Farhana Basir, Shahreen Kasim[1*], Rohayanti Hassan[2], Hairulnizam Mahdin[1], Azizul Azhar Ramli[1], Mohd Farhan Md Fudzee[1], Mohamad Aizi Salamat[1]

[1]Faculty of Computer Science and Information Technology, Universiti Tun Hussein Onn Malaysia, Johor, Malaysia.
[2]Faculty of Computing, Universiti Teknologi Malaysia, Skudai, Johor, Malaysia.
****Corresponding author email: shahreen@uthm.edu.my***

ARTICLE DETAILS

Article History:

Received 12 November 2017
Accepted 12 December 2017
Available online 1 January 2018

ABSTRACT

Businesses that are promoted through social media Facebook are one of the smartest ways to increase sales of a product. Sweet8Bakery is a business operated by a private cake seller who runs a small cake business order. Sweet8Bakery seller also took this initiative as one of the ways to attract buyers. However, there are still some problems encountered such as booking information from customers still recorded through the manual method of bookkeeping. Therefore, the purpose of this project is to design a reservation system application to support the online system so that customer booking information can be managed properly. The development methodology for this system is the waterfall methodology in which it will be developed in stages and parallel to the phases found in the waterfall model. Adobe Dreamweaver CS6 is a web developer used with PHP programming language and is supported by Xampp's web server and MySQL database. The development of this system is to automate the manual system to a web-based system. In conclusion, at the end of this project a Sweet8Bakery reservation system will be built. With this system, it can help Sweet8Bakery customers to make cake reservations easier.

KEYWORDS

Reservation system, buyers, booking information, bookkeeping, programming language**.**

1. INTRODUCTION

In the era of rapid globalization building with the sophistication of today's technology, various efforts and initiatives have been taken by the entrepreneur class to promote the resulting product. Now, in-store commerce is easier than direct commerce. Parallel to it, social media such as facebook, twitter, instagram and blog into mediation between sellers and customers to make the process of buying and selling. One of them is to run a trading business.

According to the Second Edition Student Dictionary, the business or the root word of the business means to carry onbuying and selling business for profit [1]. Meanwhile, cakes are a kind of food made from flour, butter, eggs, sugar and other ingredients that are baked or steamed according to certain temperatures. Based on a reference to the Dictionary of the Fourth Edition Board, the purpose of the reservation is to describe the order or order of goods by paying the money first [2].

Businesses run by Sweet8Bakery are accepting bookings of cakes, cupcakes, muffins and chocolates for entertainment occasions such as weddings, engagement, birthdays and banquets. Mrs. Ruzila, owner of Sweet8Bakery is taking steps to promote her business online via social media Facebook. However, problems arise when the cake album is uploaded by him too much. This creates difficulties for his customers to see the entire cake at a time.

Additionally, the time constraint factor makes it difficult for him to regularly update every detail of the resulting product. Reservations can be made either via Facebook or phone calls. Data storage through manual method is still in full use to record customer booking information. To know the total profit and sale of cakes for each month, he needs to review the previous booking record. Therefore, the earnings reports for cake sales cannot be generated efficiently.

1.1 Objective

The main objective of the project is to develop a cake reservation system online. Therefore, the objectives that need to be implemented are as follows:

1. To design a reservation system application to support the online system so that customer booking information can be managed properly.

2. To develop a cake reservation system online to produce efficient reports for cake sales results.

3. To run alpha and beta testing of the cake saves system to the user.

1.2 Scope

The scope of the project for the development of this system is for Sweet8Bakery's private cake seller, Mrs. Ruzila Bte Abu Yamin and also to her customers, buyers of cakes around. Businesses run by Sweet8Bakery are accepting bookings of cakes, cupcakes, muffins and chocolates for entertainment occasions such as weddings, engagement, birthdays and banquets.

The system also includes several modules for ease of use. The modules are registration modules, login modules, category and product modules, reservation modules, sms delivery modules and graph report modules.

2. LITERATURE REVIEW

The purpose of the literature review is the analysis of the critics (developing or dropping) from the research being conducted on a specific topic or question on a part of science. The previous study was not a summary of any other study but was a scientific story about the particular problem of the study conducted by others [3]. The purpose of the literature review is to create a theoretical framework for a research topic. Additionally, it also describes the definitions, keywords and terminology

of the research. Furthermore, literature studies can also determine the study, model and research topic.

2.1 Kajian Sistem Setara

Typically, a cake business requires premises to help the business be conducted directly. However, the sophistication of the technology is now able to resolve the issue in which many sellers have taken the initiative to sell cakes online to spread their sales activities.

2.1.1 Reservation System Cake Afrina

The reservation system of cake Afrina approach through social media blog to interact with customers [4]. If customers want to make a reservation, they have to contact the seller via short messaging system (SMS), email or in person to visit Afrina Cake Shop.

2.1.2 Reservation System Anis Bakery

Anis Reservations System Bakery steal customers by making application management Flickr as a gallery to display photos and videos [5]. However, if there is interference on flickr app, customers have to wait until the repair is completed [6].

2.1.3 Reservation System CTZ Cakes

CTZ reservation system Cakes taken the initiative to promote business through business page on Facebook social media [7]. If customers are interested in making a reservation, they must send a private message to administrator CTZ Cakes business page.

2.1.4 Reservation System Sweet8Bakery

Sweet8Bakery reservation system is a system that has been developed to make it easier for customers to choose a cake online [8]. The system consists of several modules to facilitate the booking process occurs cake. Among the modules that have been used are the registration module, log module, modules and product category, booking module.

2.2 Comparison of Equivalent System

A comparative table has been developed to describe each system's use of features either in terms of advantages or disadvantages. Each of the advantages and disadvantages of the equivalent system will be reviewed so that improvements can be applied to the system that has been developed. Table 1 below shows a comparison of the equivalent systems and systems that have been developed.

Table 1: Comparison tables for equivalent systems and systems that have been developed

Ciri - ciri	Modul pendaftaran	Modul log masuk	Modul tempahan	Modul laporan graf
Sistem Penempahan Kek Afrina	Tiada pendaftaran untuk pelanggan	Tiada log masuk, blog merupakan media sosial yang umum	Tiada, pelanggan perlu menghubungi penjual melalui *sms*, email ataupun berkunjung sendiri ke kedai	Tiada penghasilan laporan
Sistem Penempahan *Anis Bakery*	Tiada pendaftaran untuk pelanggan	Tiada log masuk, blog merupakan media sosial yang umum	Ada, pelanggan boleh mengisi maklumat pada borang yang telah disediakan	Ada penghasilan laporan
Sistem Penempahan *CTz Cakes*	Ada pendaftaran untuk pelanggan	Ada log masuk, pelanggan perlu mempunyai akaun *facebook*	Tiada, pelanggan perlu menghantar *private message* kepada pentadbir *business page* tersebut	Tiada penghasilan laporan
Sistem Penempahan *Sweet8Bakery*	Ada pendaftaran untuk pelanggan	Ada log masuk untuk pelanggan dan pentadbir	Ada, pelanggan boleh membuat penempahan melalui proses *add to cart*	Ada penghasilan laporan

In conclusion, Sweet8Bakery's reservation system has become an efficient and systematic online system compared to other equivalent systems.

3. METHODOLOGY

A researcher defines methodology as a set of structured activities required to build a software system that involves processes such as specifications, designs, reasonable and evolution [9]. While the methodology model is a summary that illustrates the process in which the subject of the involved process is narrated from some point of view. Therefore, the methodology can be defined as a systematic phase sequence to solve a problem. A methodology will use a set of techniques used to carry out specific phases. Additionally, the purpose of the methodology used is to help understand in more detail the application of the method by making a description of the research process.

3.1 Waterfall Methodology

For the development and implementation of Sweet8Bakery's online booking system, the methodology used is the waterfall methodology. According to a research, this methodology is the earliest paradigm which is often used as an effective method of system development [10].

Additionally, it is also known as a classic life cycle where this methodology is the most basic life cycle approach and is still widely used in software engineering. Figure 1 below shows the phases for the development of the waterfall methodology.

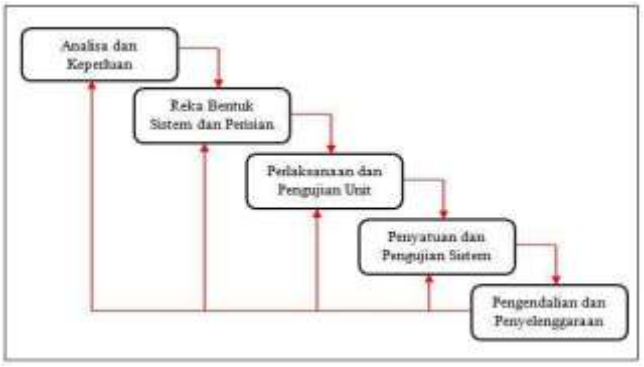

Figure 1: Waterfall methodology development phases [9]

3.1.1 Phase analysis and requirements

The analysis and needs phase is started with the process of collecting and determining the requirements to be used for project development. This is because, information needs to be carefully identified and understood so that a clear picture of the system's expectations can be analyzed.

3.1.2 Phase system and software design

The second phase, system and software design phase is a staged process that focuses on four different program features namely data structure, software architecture, interface representation and algorithmic procedures in detail. In this phase, the activities involved are designing user interfaces, designing system databases, process modeling and analysis through representation on context diagram and data flow diagram (DFD) and entity relationship diagram (ERD) produced.

3.1.3 Phase implementation and unit testing

The phase of forming code generation starts when the design system specification document is reached. In this phase, the unit functionality for this development is tested separately in order to ensure the unit meets the specified requirements. Testing for this individual unit is known as unit testing. The development of system programs was developed through the Hypertext Pre-processor (PHP) software and the system interface uses the Adobe Dreamweaver CS6.

3.1.4 Phase unification and system testing

In this phase, all units are combined and performed system tests to determine whether all units are incorporated correctly or vice versa. Overall, as stated by the system requirements document that these tests are referred to as system integration and testing. When system testing is complete tested, then the actual software will be sent to the end user.

3.1.5 Operation and maintenance phase

In this phase, the software will be subject to change after it is sent to the end user. Changes will occur to correct the errors found because the software needs to be adjusted to accommodate changes in the external environment or because the end-users are requesting to improve functionality or performance. Operation and maintenance will be reused for each phase before it is built on the existing program rather than producing a new program.

4. ANALYSIS AND DESIGN

This chapter will discuss detailed analysis and system design requirements so that at the end of the development of this system, the final result can produce statements to system users, expectations and priorities for solving the problems. Computer Dictionary defines an analytical system as an activity research, regulation, method, technique, or system work to determine the system's problems and requirements, and determine how to properly complete, improve, or implement the system [11]. While design terms mean the life cycle of a software system or computer hardware architecture when the architectural designs, components, interfaces, inputs, outputs, and data forms are created, documented, and ensured conforming to specifications.

4.1 System Requirement Analysis

System requirements analysis is the task of analyzing the built system that aims to gain a thorough understanding of the system environment. The process of analyzing the needs of the system is divided into flow charts, rajah context, tidal flow of data and rajah entity relationships.

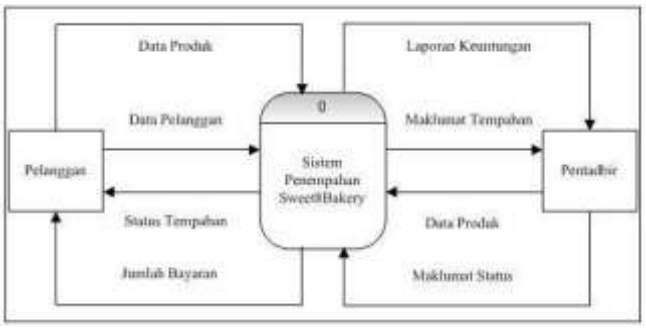

Figure 2: Context diagram of the reservation system Sweet8Bakery

The context diagram is the highest level in the data flow diagram representing the whole system to indicate the input and output of the system. In this system, there are two types of entities involved in the booking process is customers and administrators.

Based on figure 2, customers need to include customer data and product data that they wish to book. After the reservation is successful, the customer will be able to find out the amount of payment and get order status from the system. Administrators will need to include product data and status information for each order made by the customer. While the system works by providing booking information and profit reports.

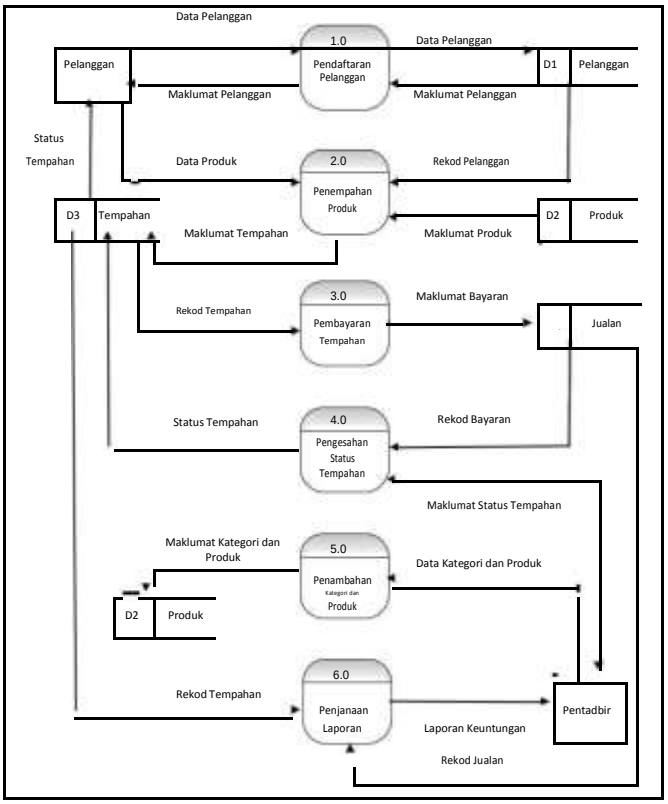

Figure 3: The zero-level data flow diagram of the system Sweet8Bakery reservation

Zero level data flow diagrams and a detailed breakdown of the figures in context. In the zero level data flow diagrams, only the key processes and the system will display all data storage will be connected so that the flow interacting data can communicate with each other.

Figure 3 above shows zero-level data flow for Sweet8Bakery's reservation system. At zero level, there are six main processes namely customer registration, product booking, booking payment, booking status confirmation, category and product additions and report generation [12-14]. The first process starts when customers enter their data during the registration process. Upon completion of the registration process, the customer is allowed to make the second process of booking a product where the customer can choose the categories and products available in the system. The third process is that the payment of the reservation occurs when the customer settles the payment amount for the reservation that has been made. Verification of reservation status occurs in the fourth process in which the customer has to wait for the order status of the administrator.

For administrators, the process involved is the process of adding categories and products that occur in the fifth process. Additionally, administrators can also know the amount of profits based on reservation records and sales records. Therefore, generating reports can be generated in the sixth process.

5. IMPLEMENTATION AND TESTING

This chapter discusses the implementation and testing phase of the developed system in which this phase will be implemented after the design of the developed system has reached a precise study [15]. Therefore, the programming language will be fully implemented in this phase to develop the planned modules [16,17]. After the implementation phase is

completed, the system testing needs to be done to determine the level of functionality of the developed system.

5.1 Implementation

Implementation is the process in which the program code implements the design. In this process, the reservation system will be built and tested Sweet8Bakery whether able to function as designed. In addition, this process is also carried out to identify the systems developed free from any error.

5.2 System Testing

System testing is conducted to assess the functionality of the planning system developed is the same as expected. In addition, this process is also carried out to determine the advantages and disadvantages of the system under test. Sweet8bakery reservation systems tested as a whole after the construction completion is done. The test is performed by administrators and customers Sweet8Bakery to ensure that the system can meet the needs of users and perform.

5.3 Booking Module Function

Figure 4: Category selection interfaces

Figure 4 shows the interface display for product category options. Customers can choose a selection of product categories that are available: cakes, cupcakes, muffins and chocolates.

Figure 5: Product selection interfaces

Figure 5 shows the interface display for product choices based on previously selected categories. In this section, customers can make a reservation by pressing on the provided booking button.

Figure 6: Booking interface interface

Figure 6 shows the display interface for order book that has been booked by the customer. In this section, customers can update quantities products booked, resume bookings, vacations or see a list of reservations.

Figure 7: Payment options method interface

Figure 7 shows the interface display for the payment options method where in this section, customers can choose whether to make payments in cash or through the internet banking line.

Here are the results of the test results for the reservation modules that have been tested by Sweet8bakery customers. The following table 2 shows the test results for the module.

Table 2: Schedule of the ordering test results

Kes Ujian	Keputusan Jangkaan	Keputusan Sebenar
Pelanggan boleh memilih kategori kek	Paparan senarai kategori akan dipaparkan	Paparan senarai kategori berjaya dipaparkan
Pelanggan boleh memilih produk berdasarkan pilihan kategori	Paparan senarai produk akan dipaparkan berdasarkan kategori yang dipilih	Paparan senarai produk berjaya dipaparkan berdasarkan kategori yang dipilih
Pelanggan boleh melihat senarai pilihan produk yang ditempah dalam raga tempahan	Paparan pilihan produk yang ditempah akan dipaparkan dalam raga tempahan	Paparan pilihan produk yang ditempah berjaya dipaparkan dalam raga tempahan
Pelanggan boleh melakukan proses pengemaskinian kuantiti bagi setiap produk	Proses pengemaskinian kuantiti bagi setiap produk akan berlaku	Proses pengemaskinian kuantiti bagi setiap produk berjaya dilakukan
Pelanggan boleh membuat penempahan	Proses penempahan akan berlaku	Proses penempahan berjaya dilakukan
Pelanggan boleh memilih kaedah pembayaran	Proses pembayaran akan memaparkan dua kaedah iaitu secara tunai dan dalam talian. Nombor rujukan diperlukan sebagai bukti pembayaran jika pelanggan memilih kaedah secara dalam talian.	Proses pembayaran berjaya memaparkan dua kaedah iaitu secara tunai dan dalam talian. Nombor rujukan diperlukan sebagai bukti pembayaran jika pelanggan memilih kaedah secara dalam talian.

6. CONCLUSION

Overall, it can be concluded that Sweet8bakery's reservation system has achieved its objective target. This is because, this system can be automated from the manual system to a web-based system. In addition, this developed system can make it easier for customers to make reservations. For administrators, it can help manage booking information from customers. In addition, the development of this system has provided a great deal of experience in applying web-based technology rather than manual methods to more systematic methods. However, in order to further strengthen this system in the future, some improvements will be proposed. Among them, Sweet8bakery's reservation system needs to provide a booking module that allows customers to book based on their wishes such as preferred cats theme, weight (kg), flavors and more.

REFERENCE

[1] Kamus Pelajar. 2nd Ed. Kuala Lumpur: Dewan Bahasa dan Pustaka.

[2] Kamus Dewan. 4th Ed. Kuala Lumpur: Dewan Bahasa dan Pustaka.

[3] Kaizen. 2012. Literature Review. Dicapai pada Oktober 18, 2013, dari http://www.slideshare.net/kaizen2012/kajian-lepas-atau-literature-review-adalah

[4] Sistem Penempahan Kek Afrina. 2011. Dicapai pada Oktober 8, 2013, dari http://www.kekafrina.com/

[5] Sistem Penempahan Anis Bakery. 2011. Dicapai pada Oktober 9, 2013, dari http://www.anisbakery.net/

[6] Flickr. Dicapai pada Oktober 9, 2013, dari http://en.wikipedia.org/wiki/Flickr

[7] Sistem Penempahan Ctz Cakes. 2013. Dicapai pada Oktober 10, 2013, dari https://www.facebook.com/CtzCakes

[8] Sistem Penempahan Sweet8Bakery. 2010. Dicapai pada September 17, 2013 dari http://zilahomemadebakery.blogspot.com/

[9] Sommerville, I. 2000. Software Engineering: Software Process. 6th Ed. Dicapai pada November 2, 2013, dari ms. 5 dari ch3.ppt

[10] Pressman, R. S. 2001. Software Engineering: A Practitioner's Approach. The Linear Sequential Model. 5th Ed. Dicapai pada November 2, 2013, dari ms. 57 di Software Engineering A Practitioner Approach by Roger S. Pressman.pdf

[11] Abu Bakar, A. Z. 1964. Kamus Komputer. Kuala Lumpur: Dewan Bahasa dan Pustaka.

[12] Awang, M. 2010. Panduan Melakukan Kajian Kejuruteraan Tahap Ijazah. Dicapai pada Oktober 17,2013, dari http://www.cheme.utm.my/reservoir/psmweb/KAJIAN%20LITERATUR.html

[13] Aplikasi Flickr. Dicapai pada Oktober 9, 2013, dari http://www.flickr.com/photos/anisbakery/sets/

[14] Mcleod, R. 2001. Landasan Teori: Pengertian Sistem. Dicapai pada Oktober 19, 2013, dari ms. 1 di http://elib.unikom.ac.id/files/disk1/497/jbptunikompp-gdl-novanzatni-24840-2-unikom_n-i.pdf

[15] Metodologi. 2011. Dicapai pada November 2, 2013, dari http://ustazkenali.wordpress.com/2013/06/30/apakah-maksud-metodologi/

[16] Pressman, R.S. 2009. Software Engineering: A Practitioner's Approach. 7th Ed. Dicapai pada November 2, 2013 dari ms. 18 dari chapter02.ppt

[17] Waterfall Model and Different Phases. 2012. Dicapai pada November 3, 2013, dari http://www.testingq.com/2012/10/waterfall-model-and-different-phases.html