FOOD ORDERING SYSTEM USING MOBILE

NUR IZZAH BINTI ZAKARIA

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ABSTRACT

Mobile computing systems can be defined as a computing environment over physical mobility. Examples are personal digital assistants (PDAs), and mobile phone. Mobile computing systems is allows a user to perform a task from everywhere using a computing device in the public, corporate, and personal information. Nowadays, many restaurant in Malaysian still use manually, paper-based in food ordering system. The problem using manually are probability of paper lost is high and misinterpret the handwriting of order. FOSUM is design to overcome this problem. With using PDA, waiter can send the order to kitchen and cashier with fast and easier. Methodology that be used in this project is a Waterfall Model. This system will develop using Macromedia Dreamweaver 8. This system make the food ordering process easier.

ABSTRAK

Mobile pengkomputeran didefinasikan sebagai pengkomputeran persekitaran lebih dari mobility fizikal. Contohnya pembantu digital peribadi dan telefon bimbit. Mobile pengkomputeran membolehkan pengguna melakukan tugas di mana-mana, menggunakan peranti pengkomputeran bagi masyarakat, syarikat korporat dan maklumat peribadi. Pada masa kini banyak restoran di Malaysia masih meggunakan secara manual, iaitu penggunaan kertas dalam sistem tempahan makanan. Penggunaan secara manual ini menyebabkan berlakunya beberapa masalah kertas pesanan hilang dan tulisan tangan disalahtafsir. Justeru itu, FOSUM direka untuk mengatasi masalah ini. Dengan menggunakan PDA, pelayan hanya menghantar pesanan kepada juruwang dan bahagian dapur dengan cepat dan mudah. Metodologi yang digunakan untuk melaksanakan projek ini ialah 'Waterfall Model' Sistem ini akan dibangunkan menggunakan Macromedia Dreamweaver 8. Sistem ini membuatkan proses tempahan makanan lebih mudah.

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LIST OF ABBREVIATIONS

LAN	-	Local Area Network
PDA	-	Personal Digital Assistant
EBOS	-	Electronic booking and ordering system
EROS	-	Executive Restaurant Orde System
RPE	-	Restaurant Pro Express
FOSUM	-	Food Ordering System Using Mobile
POS	-	Point of Sale
PHP	-	Peripheral Hypertext Preprocessor
J2ME	-	Java 2 Micro Edition
PHP	-	Hypertext Preprocessor
AP	-	Access Point
GUI	-	Graphical User Interface
PC	-	Personal Computer
HTML	-	Hypertext Markup Language
XML	-	Extensible Markup Language
RDBMS	-	Relational Database Management System
SQL	-	Structured Query Language
CSS	-	Cascading Style Sheet

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter explains about conventional food ordering process using paper-based and current ordering system by using mobile. Besides that in this chapter also explains about problem statement in using manual system for ordering process, objectives and scope of the system that are going to develop.

1.2 Mobile Computing System

Mobile computing systems can be defined as a computing environment over physical mobility. Examples are personal digital assistants (PDAs), and mobile phone. Mobile computing systems is allows a user to perform a task from everywhere using a computing device in the public, corporate, and personal information. Mobile computing environment support one or more of the following characteristics[1]:

i) User Mobility

User should be able to use the same service and move from one physical location to one location.

ii) Network Mobility

User should be able to use the same service and move from one network to another network.

iii) Device Mobility

User should be able to use the same service and move from one device to another.

1.3 Current System

There are a lot of ordering system using mobile have been developed such as Electronic booking and ordering system(EBOS). Another ordering system using mobile is Restaurant Pro Express owned by pcAmerica. Restaurant Pro Express is a Touch Screen restaurant Point of Sale (POS) system designed for easy order taking. Executive Restaurant Order System (EROS) is a prototype of taking order by using PDA simulation. The proposed system, Food Ordering System Using Mobile (FOSUM) is a system designed to enhance the current system which is manually in ordering food to computerized the ordering food. It has four modules which are Login, Order entry, Kitchen application and Billing.

1.4 Problem Statement

Food Ordering System Using Mobile (FOSUM) is designed to overcome those problems using manual system such as the possibility the paper order is high. Many restaurants use conventional system which is on paper-based, for food ordering process.

Using conventional system, the waiter must jot down the order at the paper and send to the cook. The probability to make mistake was high because sometimes the cook misinterpret hand-writing order. Therefore FOSUM was developed to enhance the efficiency and accuracy of taking order in food ordering system. Besides that, conventional system cannot see the sales history therefore FOSUM was designed to view the sales history of the restaurant.

1.5 Objectives

The objectives of developing Food Ordering System Using Mobile (FOSUM) are :

i) To computerized the food ordering system process.
ii) To display details of sales history.
iii) To calculated price of order.

1.6 Scope

The scope of Food Ordering System Using Mobile (FOSUM) are:

i) The system was using Peripheral Hypertext Preprocessor (PHP).
ii) The system is using MySQL database.
iii) The application operates within wireless.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter explains about the existing ordering system using mobile. Based on my study, there are three current systems using mobile which are Electronic Booking & Ordering System (EBOS), Executive Restaurant Order System (EROS), and Restaurant Pro Express (RPE). This chapter also explains about the overview of the proposed system Food Ordering Using Mobile (FOSUM).

2.2 Existing Ordering System Using Mobile

There are many current ordering systems using mobile application nowadays. Such as :

2.2.1 Electronic Booking & Ordering System (EBOS)

This system is design to reserved table and order food at the restaurant. There are two function in the system; booking system and ordering system . In booking system, there are two ways to register the customer via online booking and walk in. For online booking, the customer can booking through internet. The system provide the identification when the user reserves a table through the system, a unique ticket number be generated for the customer. The online booking system is develop by using ASP.net.

The ordering system need to receive the food order from a Pocket PC through the intranet by using TCP/IP protocol. The booking system will be the host on the server. A client PC will be located at the reception of the restaurant. The mobile phone application is created using J2ME for booking registration using mobile.

There are four main functions in ordering system which includes Table Order, Food Order, Pay Order and Editing Food Menu. Ordering system provide client program for waiter to enter the order and a server program to chef to receive and process the order. The client program used in a Pocket C and provide interface for entering the order, in which the menu can be updated. For the ordering system, both client and server program for the booking system created by Microsoft Visual Basic.NET and Microsoft.Net Compact Framework 1.0[2]. The functions in table orders is to display the details of the order for each table.

The chefs at the kitchen can manage the order item of each order by changing the status of Processing, Finished or Cancel. Food Orders function to display the details of the food that have been ordered and status that can be applied to the ordered food. The pry order function is to display the details of each order. The manager in the restaurant can use the system to calculate the total amount of each bill for the customer to pay it and change the status of the order to 'paid'.

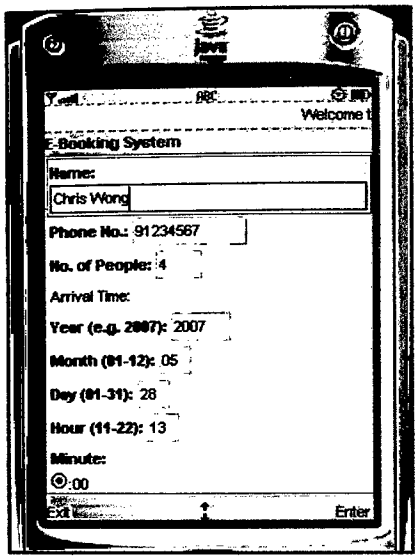

Figure 2.0 : Booking system

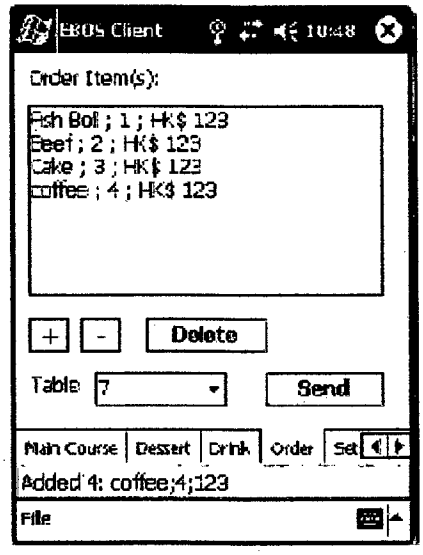

Figure 2.1 : Food Menus in Pocket PC

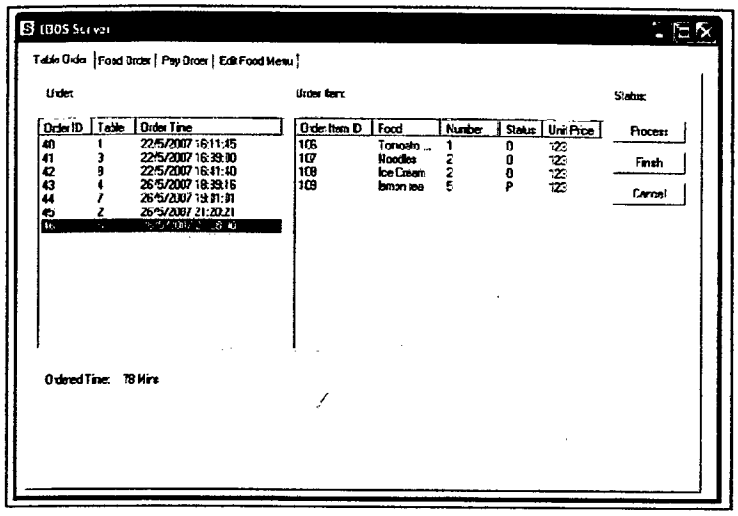

Figure 2.2 : Table Order

2.2.2 Executive Restaurant Order System (EROS)

This system is a prototype of taking order by using PDA simulation. The system is developed by using Microsoft Visual Studio.Net 2003. There are three interface in this system; PDA application, cashier application, and kitchen application. The application interfaces developed by using Visual Basic.Net. In EROS system, workstation, switch and Access Point (AP) will be going use in developing the system. All these equipment installed in lab FSK6B.

There are many disadvantages of the system. The system cannot automatically display the order in a kitchen application. It needs staff to manually click the button to get new order from customer. The kitchen application also cannot remove the order from the list after the particular order finished to deliver to the customer. It can be removed by cashier application after the customer paid their bills. Besides that, EROS system only can take one delivery order only. The waiter cannot add new order for the same person once he sent the data to the kitchen application.

The database that used in the system is only for temporary. After customers paid their bill, the record for the particular table was deleted[3].

2.2.3 Restaurant Pro Express (RPE)

Restaurant Pro Express(RPE) is a touch screen restaurant Point of Sale (POS) system designed for easy order taking[11]. RPE is a complete point of sale and management solution designed for table service restaurant. This system provides integrated tools to manage table seating, ingredients, employee time tracking, labor scheduling, deliveries, gift cards, customer loyalty and more. The built –in reporting is flexible and generates the key features needed to make smarter business decisions. RPE is ideal for both independent restaurants and chains of restaurants. RPE train the server in as little as 60 seconds to place order and close out checks and to speed up the operations in the restaurant. RPE prints orders clearly in the kitchen. Orders send to the kitchen printer include each item ordered. The other features of RPE is customize touch screen, exportable report information, user defineable menus and detailed customer history.

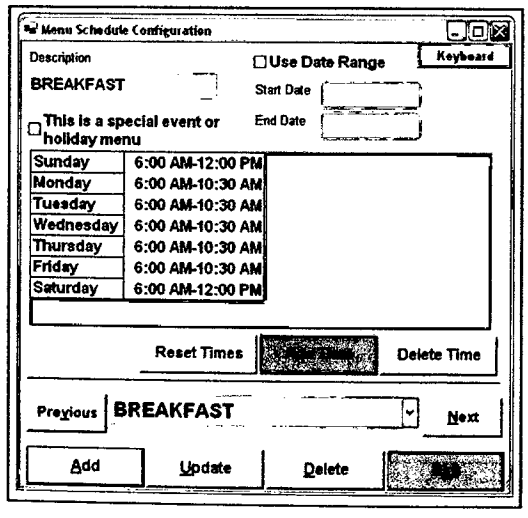

Figure 2.3 : Menu schedule configuration

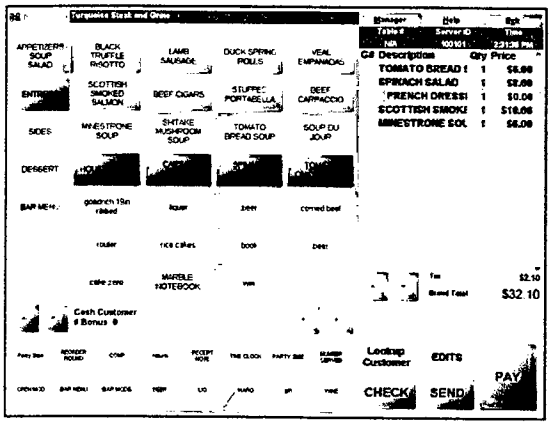

Figure 2.4 : Menu Order

2.3 Proposed System

2.3.1 Food Ordering System Using Mobile (FOSUM)

There are four modules in Food Ordering System Using Mobile; Login, Order entry, kitchen application and billing. The user for order entry is waiter, the user for kitchen application is cook, while the user of billing module is cashier. All the user must login to the system. The waiter takes order from the customer using mobile and the data will transmitted to the PC in the kitchen and PC at the cashier for billing. The function of order entry module is select order, quantity of order, and number of table. The function of kitchen application is to view the order while the function of billing module to calculate the price of order.

FOSUM is develop by using Peripheral Hypertext Preprocessor(PHP) and Macromedia Dreamweaver as a development tools. The system is using database MySQL and phpMyAdmin as development tools for database. The function for order entry module is take input order such as table number, menu order and quantity of the order. The system will display details of sales history and calculate the order.

The system operates within wireless. Wireless connect to the networks via wireless Access Point (AP).

Electronic Booking& Order System (EBOS)	**Executive Restaurant Order System (EROS)**	**Food Ordering System Using Mobile (FOSUM)**
Develop by using ASP.net and J2ME software	Developed by using Microsoft Visual Studio.Net 2003	Develop by using and Macromedia Dreamweaver and MySQL database.
Operates within WiFi and intranet	Operates within LAN and wireless	Operates within wireless
Can add order	Cannot add order for customer who has already order	Can add order
Automatically display order	Cannot automatically display the order	Automatically display order

Table 2.0 Comparison between existing system and FOSUM

2.4 Scripting Language

A scripting language allows control of one or more software applications. "Script" are distinct from the core code of the application, which is usually written in different language, and are often created of at last modified by the end-user. There are several types of scripting language that can be used to develop the system such as PHP, C++, Java Script, and Visual Basic.

2.4.1 Peripheral Hypertext Preprocessor (PHP)

Peripheral Hypertext Preprocessor is a widely used, general-purpose scripting language that was originally for web development to produce dynamic web pages. For this purpose, PHP code is embedded into the HTML source document and interpreted by a web server with a PHP processor module, which generates the web page document. PHP is available as a processor for most modern web servers and as standalone interpreter on most operating systems and computing platforms. PHP is a general-purpose scripting language that is espécially suited to server-side web development where PHP generally runs on a web server. Any PHP code in a requested file is executed by the PHP runtime, usually to create dynamic web page content. It can also be used for command-line scripting and client-side GUI applications[19]. The advantages of PHP are:

i) PHP code is inserted directly into the HTML that makes up a website. Because PHP is a server side technology, the user does not need any special browser or plug-ins to see the PHP in action.

ii) PHP is easy to understand and learn, especially for those with backgrounds in programming such C, Javascript and HTML.

iii) PHP also runs on every platform including most UNIX, Macs and Windows versions.

iv) PHP runs fast because does not use a lot of the systems resources and does not tend to slow other processes down.

v) PHP is connective abilities. PHP uses a modular system of extensions to interface with a variety of libraries such as graphics, XML, encryption, etc.

2.5 Database

A database is a collection of information that is organized so that it can be easily be accessed, managed, and updated. In one view, database can be classified according to types of content bibliographic, full-text, numeric, and images. In additional, new information and changes should also be fairly easy to input. Database systems are designed to manage large bodies of information. Management of data involves both defining structures for storage of information and providing mechanisms for the manipulation of information. The applications to develop the database are likes MySQL, Phyton and Oracle.

2.5.1 MySQL

MySQL is a freely available open source Relational Database Management System (RDBMS) that uses Structured Query Language (SQL). SQL is the most popular language for adding, accessing and managing content in a database. It is most noted for its quick processing, proven reliability, ease and flexibility of use. MySQL is an essential part of almost every open source PHP application[10]. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements.

Several other third-party proprietary and free graphical administration applications are available that integrate with MySQL and enable users to work with database structure and data visually such as phpMyAdmin; a free Web-based fronted widely installed by Web hosts worldwide, since it is developed in PHP.