FAST ORDERING SYSTEM

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This report is submitted in partial fulfillment of the requirements for the award of Bachelor of Electronic Engineering (Computer Engineering) With Honours

Faculty of Electronic and Computer Engineering

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UNIVERSTI TEKNIKAL MALAYSIA MELAKA
FAKULTI KEJURUTERAAN ELEKTRONIK DAN KEJURUTERAAN KOMPUTER

BORANG PENGESAHAN STATUS LAPORAN
PROJEK SARJANA MUDA II

Tajuk Projek : FAST ORDERING SYSTEM

Sesi Pengajian :

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Saya : NOOR ASYRAN BINTI ISHAK

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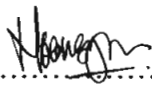(TANDATANGAN PENULIS)   (COP DAN TANDATANGAN PENYELIA)

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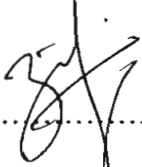Tarikh: 30/4/2010   Tarikh: 30/4/2010

DECLARATION

"I hereby declare that this report is the result of my own work except for quotes as cited in the references."

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"I hereby declare that I have read this report and in my opinion this report is sufficient in terms of the scope and quality for the award of Bachelor of Electronic Engineering (Computer Engineering) With Honours."

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DEDICATION

In the name of ALLAH the Most Graceful and Merciful.

Special dedication for my father, mother,lecturers, family and friends.

Thank you very much.

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ABSTRACT

Smart Ordering System at the restaurant by using Bluetooth system and microcontroller (PIC) which implements a faster system of ordering. It consists of a keypad at the customer's table as a remote control electronic ordering system and monitor to display the ordering information at the kitchen or counter. It allows customers to submit orders directly to the kitchen and cashier by using the distribution of data by Bluetooth system. The ordering information that uses specific code on the keypad will be successfully transmitted to the receiver base station of the personal computer (PC) in the kitchen and cashier. The list of the menus that matches with the received code will be displayed on the monitor. The application of this system provides customer easy to make orders. This can save the time and reduce workforce (waiter). Besides that, the restaurants or hotels will be good in management and user friendly.

ABSTRAK

Pesanan Pintar di restoran dengan menggunakan sistem 'Bluetooth' dan mikropengawal (PIC) ini merupakan sistem pesanan cepat. Terdiri daripada papan kekunci kecil di meja pelanggan sebagai sistem alat kawalan tempahan elektronik dan antara muka untuk memaparkan maklumat tempahan di dapur atau kaunter. Keadaan ini membenarkan pelanggan untuk menghantar arahan berbentuk elektronik terus ke dapur dan kaunter pembayaran dengan menggunakan kaedah penghantaran data melalui sistem Bluetooth. Maklumat tempahan yang menggunakan kod khas pada papan kekunci kecil akan dihantar kepada penerima komputer peribadi di dapur dan kaunter pembayaran. Senarai menu yang sepadan dengan kod yang diterima akan dipaparkan pada antara muka. Aplikasi sistem ini membolehkan pelanggan membuat pesanan dengan pantas. Keadaan ini dapat menjimatkan masa dan mengurangkan tenaga kerja. Disamping itu, restoran atau hotel dapat meningkatkan pengurusan kerja dan melayan pelanggan dengan lebih mesra.

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CHAPTER 1

INTRODUCTION

1.1   Project Background

Smart ordering device is a small tool which is used to make an order. It is created to solve the problem which is faced by the restaurant's entrepreneur in the attempt to organize the restaurant more efficiently skilled and capable. So, there are no more complaints about the services that are provided by the servers who are not customer friendly.

The system uses a small keyboard which is placed on each table for the customer to make orders. Order is made by inserting the menu code on the small keyboard. This code comes together with the menu. A signal will be sent to the order section by Bluetooth system, and automatically will be displayed on a screen in the kitchen. This reduces the time spent on making the orders and paying the bills, where can reduce the cost and also energy.
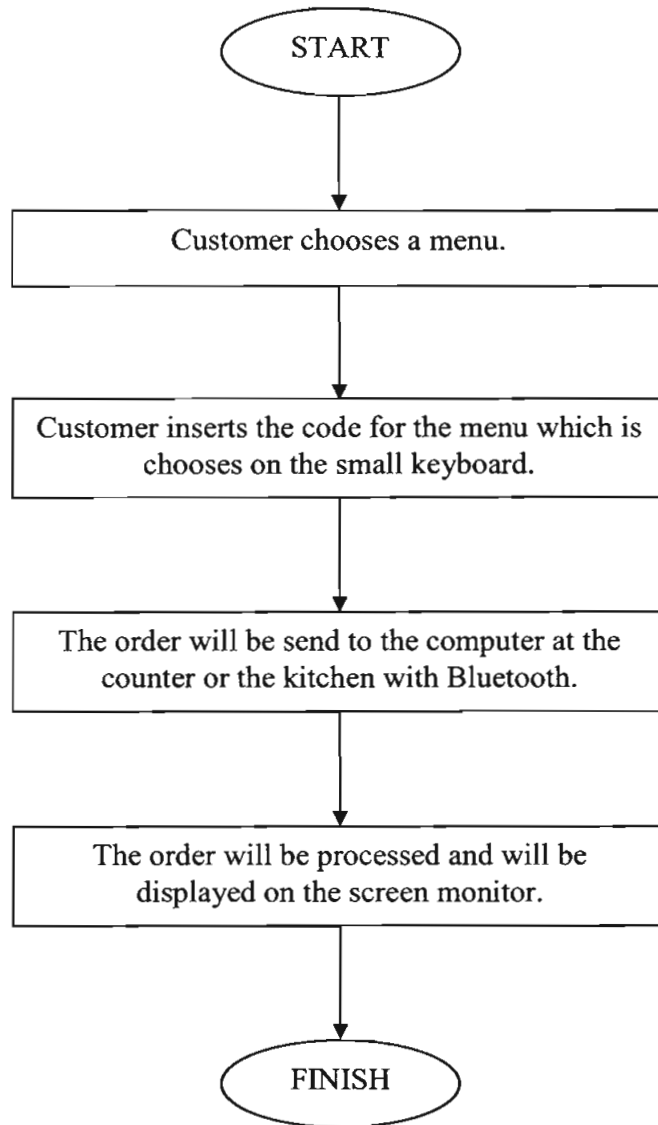
Figure 1.1: Flow chart for overall ordering system using the Bluetooth.

The Figure 1.1 explains the sending order processes which are:

    i.   The process starts when the customers select the menu to make an order. The menus are listed together with their own codes.

    ii.   To make an order, customers will enter the code (menu) by using the keypad.

    iii.   Then, the information (code) will be transmitted to the Central Processing Unit (CPU) at the kitchen. This data can be encoded and send out to the transmitter unit through the Bluetooth.

    iv.   After receiving the information, the CPU will process the commands and display the information on the monitor.

1.2   Objectives of the Project

The following are the objective of the project:

    i.   To build one ordering and delivering system at restaurants using keypad, display screen and Bluetooth. By using this system, the ordering and serving can be more quickly.

    ii.   To make ordering service easy in the restaurant without using waitress service. It will make customer satisfied with the service from the restaurant.

    iii.   To match the software with the system in this project.

iv.   To design a circuit of microcontroller (PIC) to control instructions the system.

1.3   Scope of the Project

The following are the scope of the project:

i.   To design a delivering system and to receive information that works around 100 m away.

ii.   To transmit information (menu) using Bluetooth system.

iii. Using a small keypad as a source to insert information and will be displayed on the display screen which has been processed by the microcontroller (PIC).

1.4   Problem Statement

The conventional method that is usually been used by the restaurant's in taking the customer's orders is by writing it down on a piece of paper. Then, the order's sent to the kitchen part. The problems listed below are normally faced by the restaurant during peak hours when there are many customers. The problems which often occurred due to this method are:

i.   Not taking the customer's orders on time. A lot of time will be wasted and the customers need to wait for a long time to make their orders.

ii.   The order might be mistaken while the waiter or waitress jotted it down. This causes, customer cannot get what they have ordered.

iii.   Looses the list of the orders when jotted down in a piece of paper. This matter, to difficult for the chef or workers to prepare the food (order).

iv.   At peak hours, the workers or waiters are not enough to take all the order. This situation will make the customer spend several times to make an order and service from the restaurant.

This project is invented to solve all the problems stated above without having to face any risks. Each of the customers could make their own orders, according to the menu's that is provided by the restaurant without waiting for the workers.

There are codes for each menu that is served in the restaurant, so that the customer can make their orders easily. A certain menu code has to be inserted into the small keyboard which is situated on the customer's tables and the orders will be sent by using Bluetooth system after the customer's have finished making their orders.

Signals will be processed and viewed directly at the kitchen and counter part. Since the entire menu's and the table's number where the customer is sitting are displayed on the screen, everything will be done smoothly without facing any problems.

In this way, it can save time, energy and the cost spent. This will also give some time for the worker's to deal with the food deliveries or to tidy up the table's which has been used by the customers.

1.5   Benefits of the Project

By use this system, the user will get more benefit. So, customer can get their ordering fast and the worker can do the serve as soon as possible. As example of that benefits are:

i.   Save time, energy and cost. It can make the management improves the quality of services at restaurants.

ii.   Gives amenity to the management, workers and customers. It easy for waiter or waitress to make service order. While customer can fast to get their orders.

iii.   Obtain new ideas to increase the quality in a products manufacturer. Indirectly, this idea can be applied for a new technology in the implementation of daily tasks.

CHAPTER 2

LITERATURE REVIEW

This chapter discusses a literature review of the recent application designed by the previous researchers. A discussion covers previous similar system developed.

The first case study based on the thesis by Siti Athirah Binti Rosle on title 'Smart Ordering System at Restaurants by Using Cable and Microcontroller PIC (Hardware)'. Second, it will be discussed about 'The SMART System' by company GeneralSoft Ltd, Silwood Business Centre. 'LRS Restaurant Server Pager Starter Kit' by company of Advanced Analytical, Inc is third case study. The last case study will be discussed about 'Application of Ordering System Using Bluetooth Technology' by MGI Multimedia Sdn Bhd's Malaysian Delights.

2.1 Case Study 1

Referred to thesis by Siti Athirah Binti Rosle on title "Smart Ordering System at Restaurants by Using Cable and Microcontroller PIC (Hardware)", it also had the same idea on developing this ordering system. The used of electronic order keypad with transmitter and receiver circuit has been materialized, although not total worked.

The project was not successfully because the keypad designed is mismatching with the transmitter and receiver circuit. She had simulated the use of keypad with other serial port device as an alternative. In the future, the keypad will have to be modified for a better solution.

2.2 Case Study 2 (The SMART System)

The company of GeneralSoft Ltd, Silwood Business Centre had done the system, namely as "The SMART System". Their proves that by using this SMART system, it will guarantee not only improve of customer efficiency, but also time management and order accuracy, but to make a real difference to restaurant bottom line profits. By using the SMART system and its technologies restaurant will improve their company speed and accuracy.

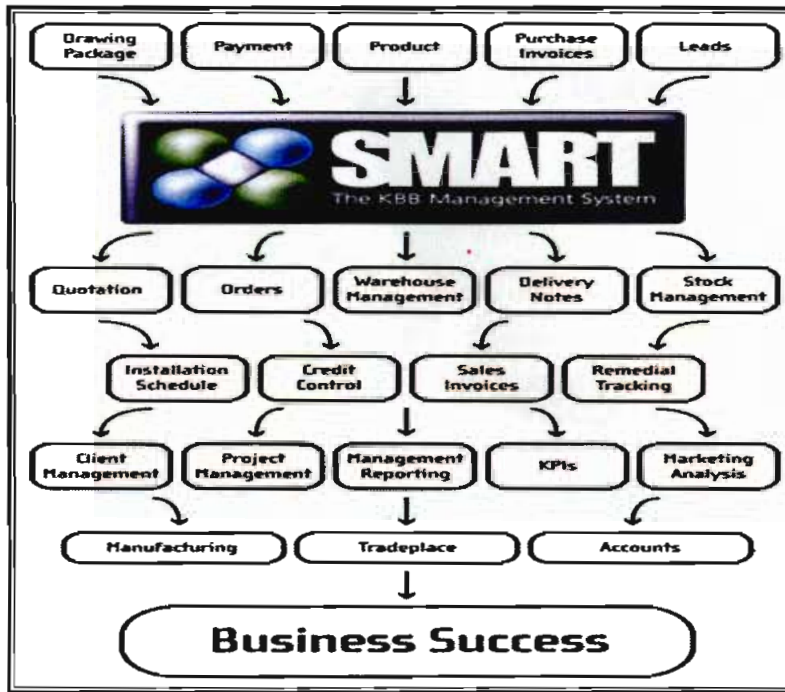Figure 2.2.1: Interface of smart System

Figure 2.2.2: The Flow of SMART

2.3   Case Study 3 (LRS Restaurant Server Pager Starter Kit)

At 18 October 2004, the company of Advanced Analytical, Inc which is located at Westlake village had introduced one system can eliminated application in Restaurant in acquaint as LRS Restaurant Server Pager Starter Kit. The objective is to make sure that the present foods still burning and two give more space for waiter to serve other customers.

This system easy in use, when foods are prepared in the kitchen the chef will press a button that there were at transmitter. Then, server pager will send their signal to waiter by vibrant, which is indicate the foods are prepared. Through this method also, the sweating time can be use by waiter to carry out other task. This system necessitated battery, transmitter, pager and server pager to enable all function. Transmitters are placed at wall in the restaurant to enable the signal to pager. There systems use WHF frequency 467MHz.