

ONLINE FAST FOOD RESTAURANT

ORDERING SYSTEM

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UNIVERSITI UTARA MALAYSIA

ONLINE FAST FOOD RESTAURANT

ORDERING SYSTEM

A thesis submitted to the Graduate School in partial fulfillment to the requirements

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by

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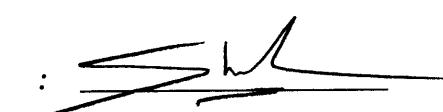
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## **ABSTRAK**

Tujuan utama projek ini diadakan adalah untuk membangunkan sistem penempahan makanan segera restoran secara atas talian. Sistem ini membolehkan pelanggan membuat tempahan makanan segera secara atas talian pada masa dan tempat yang diingini. Antara sebab utama membangunkan sistem ini adalah berikutan daripada isu-isu yang dihadapi oleh industri restoran makanan segera. Isu-isu ini adalah seperti isu tempoh masa puncak-beratur panjang, peningkatan dalam pengambilan makanan keluar dari restoran berbanding pelawat, kelajuan penyediaan makanan segera yang diperlukan, strategi promosi and pengiklanan semasa yang terhad, dan isu pengurusan kawalan kualiti ke atas makanan segera. Oleh demikian, sistem ini mepertingkatkan kelajuan dan piawaian pelanggan membuat tempahan dan mempaparkannya kepada pekerja restoran di dapur. Selain itu, sistem ini menyediakan muka rangkaian yang mudah diguna serta media pengiklanan yang berkesan untuk memperkenalkan produk restoran makanan segera dengan kos yang rendah. Lantaran itu, ia meningkatkan dan membawa kepuasan terutamanya kepada pelanggan yang sibuk dan juga pelanggan yang dihalang oleh kekurangan pengangkutan ke tempat restoran makanan segera. Pada masa yang sama, sistem ini dapat membantu meluaskan pasaran saham restoran makanan segera dan meningkatkan pulangan atas pelaburan kepada pelabur. Methodologi berstruktur telah digunakan untuk membangunkan sistem penempahan makanan segera restoran atas talian ini. Methodologi rekabentuk berstruktur ini telah mengambil pendekatan langkah demi langkah daripada kitaran hayat pembangunan sistem dan bergerak secara logikal peringkat demi peringkat. Methodologi ini melibatkan sistem analisis, sistem rekabentuk, sistem pembangunan dan sistem pengujian.

## **ABSTRACT**

The purpose of this project is to develop an Online Fast Food Restaurant Ordering System. It is a system that enable customer of fast food restaurant to place their order online at any time and any place. The reason to develop the system is due to the issues facing by the fast food restaurant industry. These issues are such as peak hour-long queue issues, increase of take away foods than visitors, speed major requisite of fast food preparation, limited promotion and advertising on current strategy, and quality control of fast food management issues. Therefore, this system enhances the speed and standardization of taking the order from the customer and displays it to the staff in the kitchen accordingly. Beside that, it provide a user-friendly web pages and effective advertising medium to the new product of the fast food restaurant to the customer with cheaper cost. Further more, it also extend and deliver customer satisfactions especially to the hectic customer or reaching the customer who are constrain of transport to be in fast food restaurant. At the same time boost up market share for fast food restaurant and increase return on investment for the investor. The structured methodologies have been chosen to develop the Online Fast Food Restaurant Ordering System. The structured design methodology adopts a formal step-by-step approach to the System Development Life Cycle that moves logically from one phase to the next. The methodology used involved system analysis, system design, system development, and system testing.

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# **CHAPTER ONE:**

## **INTRODUCTION**

## 1.1 Background

As we enter the second millennium we experience one of the most important changes in our lives that is the move to an Internet based society. Almost everything will be changed at home, in school, at work, in the government sector even in our leisure activities. Some changes are already here and they are spreading around the globe. Others are just beginning. One of the most significant changes is in the manner we conduct business especially in how we manage the marketplace and commerce. Perspectives of doing business have been evolving tremendously since the day Internet been introduced to the world.

Electronic commerce describes the manner in which transactions take place over the networks, mostly the Internet. It is the process of electronically buying and selling goods, services and information. Certain E-commerce applications, such as buying and selling stocks or books on the Internet, are growing at a rate of several hundred percent every year. E-commerce could have an impact on a significant portion of the world businesses and professions.

Electronic Commerce has brought a greater revolution to the companies in doing their businesses. Therefore, companies need to be well prepared and equip in order to stay competitive in the global market. Food industry business such as Fast Food Restaurants need to be considered and plan with more seriously to use the technology like E-commerce to expand their business.

The contents of  
the thesis is for  
internal user  
only

Ambler, S. W. (October 26, 2000). *User Interface Design: Tips and Techniques*. United Kingdom. Cambridge University Press

Ashworth, C. and Slater, L. (1992). *An Introduction To SSADM Version 4*. London: McGraw Hill International Publisher.

Ball, S. (1992). *Fast Food Operations And Their Management*. Great Britain: Stanley Thornes Publishing.

Brooks, S. (Jan 1, 2000). *A Mouse By The Tail*. Restaurant Business. 99 (1), p50.

Connor, D. (March 6, 2000). *QuikOrder Brings Domino's Pizza To You In 30 Minutes Or Less*. Network World. 17 (10), p20.

Cebrzynski, G. (January 15, 2001). *Founder Of Online Ordering Service Calls Marketing Key To Competitive Edge*. Nation's Restaurant News. 35 (3), p20.

Dorothy, J. T. and Ian, J. T. (1995). *Systems Analysis and Design: A Comparison of Structured Methods*. United Kingdom: Blackwell Publishers.

Emerson, R. L. (1990). *The New Economics of fast Food*. New York: Van Nostrand Reinhold.

Freedman, A. (1996). *The Computer Desktop Encyclopedia*. New York: American Management Association.

Horovitz, J. (2000). *The Seven Secrets of Service Strategy*. Great Britain: Prentice Hall.

Kemp, T. (May 29, 2000). *When It Has To Be There Now—E-retailers Tune Systems For Same Day Delivery*. Internetweek. p1.

Kroll, K. M. (July, 1999). *Food.com Beefs Up Campaign For On-line Restaurant Ordering*. Stores. 81 (7), p105-107.

Liddle, A. J. (January 8, 2001). *Pizza Time Chain Explores Online Ordering At New Prototype*. Nation's Restaurant News. 35 (2), p22.

Longman, G. (1995). *Dictionary of Contemporary English*. Great Britain: British National Corpus.

Mumford, A. (1999). *Beginning Web Development with Visual InterDev 6*. United Kingdom: Wrox Press.

Nedergaard, S. and Munday, D. (March, 2001). *The Benefits of E-Commerce*. Food Processing. 70 (3), p34-36.

Pei, J. F. (June 15, 2000). *Cards, Online Ordering Streamline Purchasing Purchasing*. 128 (10), p46.

Revzin, P. (November 23, 2000). *E-Business*. Far Eastern Economic Review. 163 (47), p52-62.

Reynold, M. (2000). *Beginning E-Commerce with Visual Basic, ASP, SQL 7.0 and MTS*. United Kingdom: Wrox Press.

Siler, B. and Spotts, J. (1998). *Using Visual Basic 6: The One Source For Comprehensive Solution*. Special Edition. United State: QUE Publisher.

Turban, E; Lee, J.; King, D. and Chung, H. M. (2000). *Electronic Commerce: A Managerial Perspective*. Upper Saddle River: Prentice Hall.

Ullman, C. (1999). *Beginning ASP 3.0*. United Kingdom: Wrox Press.

Waters, C. D. (October 30, 2000). *Online Ordering, Delivery Going Smooth So Far For Jamba Juice*. Nation's Restaurant News. 34 (44), p22.

Waymire, R. and Sawtell, R. (1998). *SAMS: Teach Yourself Microsoft SQL Server 7.0 In 21 Days*. Indiana: SAMS Publisher.

Whitten, J. L. and Bentley, L. D. (1998). *System Analysis and Design Methods*. 4<sup>th</sup> Edition. United State: McGraw-Hill

Yourdon, E. (1992). *Modern Structured Analysis*. New Jersey: Prentice-Hall.