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^ Tesis dimaksudkan sebagai Laporan Projek Sarjana Muda (PSM)

# **MINI MART MANAGEMENT SYSTEM**

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This report is submitted in partial fulfillment of the requirements for the  
Bachelor of Information and Communication Technology (Software Development)


**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY  
NATIONAL TECHNICAL UNIVERSITY COLLEGE OF MALAYSIA  
2004**

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## DEDICATION

*To my beloved parents who have  
encouraged, guided and inspired me throughout my journey of education*

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*I would like to take this opportunity to personally express my deepest appreciation and gratitude. The completion of this report would be impossible without the help of these people. It gives me a great pleasure in accomplishing this project.*

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## ABSTRACT

Mini Mart Management System (MMS) is a standalone system that helps the owners of mini mart to manage the data and information of their mini mart. It provides the solution for replacing the manual work done to manage the daily records of mini marts. A full-featured management system is needed for mini marts to manage all the stored data and information systematically and efficiently. MMS application is developed for mini marts to manage inventory, staff, supplier and finance records. In the MMS application, monthly profit can be calculated and therefore monthly or yearly sales analysis can be performed. The purpose of research, particularly literature review is to collect data. Through this literature review, scope of project and user requirements can be retrieved whether how big the project is. The use of a methodology helps to produce a better quality product, in terms of documentation standards, acceptability to the user, maintainability and consistency of software. Waterfall Model has been chosen as a methodology for this project and will be implemented along the system development process to ensure the user requirements are met completely. The system design is requires adherence to internal technical design standards that ensure completeness, usability, reliability, performance and quality of MMS. A fully functional MMS application that featured with user friendly is provided at the end of the development process. With the developed application, users can manage the business of mini mart systematically.

## ABSTRAK

*Mini Mart Management System* merupakan sebuah sistem *standalone* yang membantu pemilik untuk menguruskan data dan maklumat. Sistem ini dapat menyelesaikan masalah kaedah manual dalam menguruskan rekod perniagaan harian *mini mart*. Sistem pengurusan berbantuan komputer amat diperlukan oleh *mini mart* untuk menguruskan semua data dan maklumat *mini mart* dengan sistematik dan berkesan. Aplikasi MMS dibangunkan bertujuan menyelenggarakan rekod inventori, pekerja, pemborong dan kewangan *mini mart*. Aplikasi MMS dapat mengira untung bersih bulanan atau tahunan bagi *mini mart* dan analisis jualan setiap bulan atau setiap tahun dapat dipersembahkan. Kajian literatur telah dilaksanakan bertujuan untuk mengumpulkan semua data yang berkenaan dengan projek ini. Melalui kajian literatur, skop projek dan keperluan pengguna dapat dijangkakan. Selain itu, dengan penggunaan metodologi kejuruteraan perisian, ia dapat menyediakan produk yang lebih berkualiti, iaitu dari segi piawaian dokumen, kepuasan pengguna, penyelenggaraan dan konsistensi perisian. *Waterfall Model* telah dipilih sebagai metodologi projek ini dan akan diimplementasikan di sepanjang proses pembangunan sistem untuk memastikan semua keperluan pengguna dapat dipenuhi. Rekabentuk sistem perlu dipatuhi berdasarkan piawaian rekabentuk teknikal dalaman untuk mengenalpastikan kelengkapan, kebolehgunaan, konsistensi, persembahan dan kualiti MMS. Di akhir proses pembangunan, sebuah aplikasi MMS yang bercirikan kepelbagaian fungsi dan mesra pengguna dapat diperolehi. Dengan itu, para pengguna dapat menguruskan perniagaan *mini mart* dengan penuh sistematik.

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**LIST OF ABBREVIATIONS****ACRONYMS**

KUTKM

PSM I

MMS

HCI

DBA

PC

PSM II

IDE

RDBMS

LAN

WAN

DBMS

MIS

**WORDS***Kolej Universiti Teknikal Kebangsaan Malaysia**Projek Sarjana Muda I*

Mini Mart Management System

Human Computer Interaction

Database Administrator

Personal Computer

*Projek Sarjana Muda II*

Integrated Development Environment

Relational Database Management System

Local Area Network

Wide Area Network

Database Management System

Management Information System



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## CHAPTER I

### INTRODUCTION

#### 1.1 Overview

A system using the Microsoft Visual Basic.Net and Microsoft SQL Server 2000 called Mini mart Management System (MMS), will be developed to aid mini mart owners to manage their mini mart information and data.

From observation, most of the mini marts today are still using record books to keep data about their mini marts. Some mini marts used Microsoft Access to store their data. However, due to the lack of experience of dealing with computer, Microsoft Access is used only to store data. Basically, it has no difference by using a record book. Thus, this brings me an idea to develop MMS with user-friendliness featured.

MMS is created to aid mini mart owners in their usual tasks, which are recording sales, products, staff records, supplier's contact, and generate sales analysis. Apart from helping mini marts owners in these tasks, the system also enable them to view the sales by generating a graph and reports for their mini marts. This allows the owners to compare the sales for each month.

Therefore, the MMS application will be developed with the Waterfall Model or Sequential model as system development methodology.

## 1.2 Problem Statements

Most of the mini marts are still using the traditional methods to manage and keep their records and data. Storing data into record books is wasting lots of time and energy. During the day-business work, the mini mart owners and their staff seldom update the files. In fact, they waited until the shop is closed to update their record book or their ledger book.

Mini mart owners seldom know the true or exact profit of their business. This statement is true by the confessions of two mini mart owners because traditional methods are prone to errors and mistakes. Human can never be as reliable as computer when involving in computing tasks. Besides, staff might create some minor errors in the finance tasks. Mini marts owners also might forget to add-in the new sales for certain products. These are the examples that might lead to errors and mistakes using the traditional methods.

The availability of stocks is very important for a mini mart to avoid the business running out of stocks. However, mini mart owners don't seem to have enough time or energy to calculate and inspect all products by using this traditional method. The true quantities of each of the products are unclear. The problem is they have to check the products physically. The products available in a mini mart might reach up to hundreds. It is impossible for the mini mart owners or staff to calculate all the available products one by one.

## 1.3 Objectives

The Mini mart Management System is specially designed to meet the needs of the target mini marts in today highly competitive market. Therefore, MMS is developed to achieve the below objectives:

### **1) Better Business Solution**

For my target mini mart, it is hoped that the system will offer a better business solution to help mini marts in capitalize on ICT opportunities. The solution is likely to centralize all the data and maintaining all the information in one system to achieve lower costs and faster time recording.

### **2) Persistent and Stable**

The MMS will provide a persistent and stable storage of data. Equipped with a well designed database, it will help the owners of mini marts to manage the constantly changing data, especially data of stocks. The support for data maintenance enable the data is stored systematically and updated efficiency.

### **3) Improve Stock Recording and Search Mechanism**

Mistakes and inaccuracies that caused by the staffs during the recording process can be minimized, and subsequently the automated stored information after the data entered by the staffs will be more efficient for searching mechanism. This may save the time of the staffs to refer back the stored information as they just need to press a button to search the needed data instead of looking around the records one by one in each record book.

### **4) Efficiency**

MMS is an efficient controller for the flow of stocks as it provides a special feature which can remind the users by popup message automatically when running out of stocks. Besides, the system may generate graph that indicate the sales in particular month. This automatic analysis tools will help a lots the owners of in their mini mart business.

## 5) Increase Security Feature

MMS is a protected system which password is required for each user to log in and the level of accessible is limited for different type of users. This may ensure the data of mini marts is reliable without a large space to keep all the data.

### 1.4 Scopes

For MMS, the application areas that the system is concentrating are on the products information, the sales of the products in the mini marts and tasks management to the staffs. Form observations made, most mini marts have four to six staffs working at a same time. The application areas on this system are:

#### 1) Inventory management

The MMS will be able to handle stock in, stock returned and stock left. Besides, it can indicate and remind the users by popup message which item needs to be added. Then the owner can update the information when new stock arrived.

#### 2) Staff management

The MMS will be able to manage the information of staffs in the mini marts, including their personal details, tasks and salary payment.

#### 3) Finance management

The system will be able to help the owners to calculate all the sales and all the payments made. Payments deduct from the sales profit will bring clean profit to the mini marts.

#### **4) Sales analysis**

This system will be able to calculate sales and accounts on monthly basis. Therefore, sales of the mini marts can be analyzed and generate graph for the owners. This is an easier and faster way for the owners to understand their business condition.

For user groups, MMS is designed for the usage of the owners of the mini mart or administrators and the staffs of the mini mart that are given permission. They can only log in the system with the given username and password. The highest access level only can be accessed by owners or administrator. The staffs will have strict rules to be imposed on them due to the security reasons. Unlike the owners or administrators, staffs unable to view and perform certain functions in the MMS application.

#### **1.5 Contributions**

The target users for this system are the owners or administrators and the staffs of the mini mart that are given permission. They can only log in the system with the given username and password.

The MMS will provide a persistent and stable storage of data. Equipped with a well designed database, it will help the owners of mini marts to manage the constantly changing data, especially data of stocks. Mistakes and inaccuracies that caused by the staffs during the recording process can be minimized, and subsequently the automated stored information after the data entered by the staffs will be more efficient for searching mechanism. This may save the time of the staffs to refer back the stored information.

MMS is an efficient controller for the flow of stocks as it provides a special feature which can remind the users by popup message automatically when running

out of stocks. Besides, the system may generate graph that indicate the sales in particular month. This automatic analysis tools will help a lots the owners of in their mini mart business.

## **1.6 Expected Output**

At the end of the testing phase, the MMS application, that runs on the .NET platform and uses the Microsoft SQL Server 2000 for it database application, is expected to be produced. In addition, the documentation that states the requirements and development process of the MMS application will be produced, together with the User Manual for the MMS application.

The MMS application is a very useful application that helps the owner of mini marts to manage their data and information of their mini mart. MMS can be used to record sales, products, staffs, supplier's contact, and generates sales analysis in report and graph form. The sales analysis generated can be used by the owners to improve sales and to expand their mini mart business.

## **CHAPTER II**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Literature research has been carry out before begin to develop MMS. To gather the related information for developing MMS, Internet search engine in [www.google.com](http://www.google.com) has been used to find out the similar systems as study case, methodologies, technologies and others related information. All these information will be used as the guides to develop the system. Literature research can identify the advantages and disadvantages of the existing systems, problem solutions and system designs. It also ensure the system that is going to be developed will enhancing the good features from existing system and better solution for those worst features.

There are few ways to collect information as a step of preliminary investigation in the system development process. For developing MMS, the ways used to collect information are:

##### **1) Interview**

Questionnaires are prepared to gain information and data from the mini marts. Interviews are done with two owners of mini marts. When the database system has been completed, interview method also used to get the feedback from the users.