

SERVICE MANAGEMENT SYSTEM

ROHIMAH HANAH BINTI MOHD ZAIN

**This report is submitted in partial fulfillment of the requirements for the
Bachelor of Computer Science (Database Management)**

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2010**

DECLARATION

I hereby declare that this project report entitled
SERVICE MANAGEMENT SYSTEM

is written by me and is my own effort and that no part has been plagiarized
without citations.

STUDENT :  Date: 25/06/2010
(ROHIMAH HANAH BINTI MOHD ZAIN)

SUPERVISOR: _____ Date: _____
(PM NORHAZIAH MD.SALLEH)

DEDICATION

To my beloved parents who have been giving me moral support and motivation throughout my project until successfully.

ACKNOWLEDGEMENTS

I would like to gratefully acknowledge the contribution of several people who helped me to complete this project. First, I would to convey my grateful thanks to PM. Norhaziah Md. Salleh, my current supervisor at Faculty of Information and Communication Technology, Universiti Teknikal Malaysia, Melaka (UTeM) for their valuable contribution and assistance in the preparation of this project and development service management system (SMS)

A note of thanks is dedicated to few En. Jamel from the company Malcomm Enterprise Sdn. Bhd in giving me some idea, information and also for spending their valuable time and effort. Their generosity can only be expressed by me by being thankful for having such kind staff Malcomm Enterprise who is supportive.

Last but not least, to all might have involved directly or indirectly in developing this system is much appreciated and a note of thanks from me.

ABSTRACT

Nowadays, Malcomm Enterprise Sdn Bhd still manages service management division to customer or company with manually. Development system this is aim to smooth company management process and overcome problems faced company' management. In company said present lack a system which involves service record management to customer or company. This cause they face some problem about customer record or company which made report on damage or new assembly. Accordingly any data possible loss was high. System this also actually focused to recorded data from clients which requested service carried out upper company them. Programming language applies in develop project this is PHP language while data base used is MySQL. Several studies was being conducted during undertaking the project this and among them is by conduct research in Malcomm Enterprise Sdn Bhd Company one myself with Mr Jamel. Mr.Jamel great help from opinion aspect and idea how need system this required currently. A result of project this is created it a system can help the company on manage information they.

ABSTRAK

Pada masa kini, Malcomm Enterprise Sdn Bhd masih menguruskan bahagian pengurusan perkhidmatan kepada pelanggan atau syarikat dengan secara manual. Pembangunan system ini adalah bertujuan untuk melicinkan proses pengurusan syarikat dan mengatasi masalah-masalah yang dihadapi pihak pengurusan syarikat. Pada masa sekarang syarikat tersebut tidak mempunyai satu sistem yang melibatkan pengurusan rekod perkhidmatan kepada pelanggan atau syarikat. Ini menyebabkan mereka menghadapi beberapa masalah berkaitan dengan rekod pelanggan atau syarikat yang membuat laporan mengenai kerosakan atau pemasangan baru. Oleh sebab itu sebarang kemungkinan kehilangan data adalah tinggi. System ini juga sebenarnya tertumpu kepada merekod data-data daripada pelanggan yang meminta perkhidmatan dilakukan keatas syarikat mereka. Bahasa pengaturcaraan yang digunakan dalam membangunkan projek ini ialah bahasa PHP manakala pangkalan data yang digunakan adalah MySQL. Beberapa kajian telah dijalankan semasa menjalankan projek ini dan antaranya adalah dengan membuat kajian di syarikat Malcomm Enterprise Sdn Bhd itu sendiri dengan bantuan En. Jamel. En. Jamel banyak membantu dari segi pendapat dan idea bagaimana keperluan system ini dikehendaki pada masa ini. Hasil daripada projek ini, adalah terciptanya suatu system yang dapat membantu syarikat berkenaan menguruskan maklumat mereka.

TABLE OF CONTENTS

CHAPTER	SUBJECT	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGMENTS	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xi
	LIST OF FIGURES	xiii
	LIST OF ABBREVIATIONS	xv
 CHAPTER I	 INTRODUCTION	
	1.1 Project Background	1
	1.2 Problem Statements	2
	1.3 Objective	3
	1.4 Scope	3
	1.5 Project Significance	5
	1.6 Expected Output	5
	1.7 Conclusion	5

CHAPTER II	LITERATURE REVIEW AND PROJECT METHODOLOGY	
2.1	Introduction	6
2.2	Facts and findings	7
	2.2.1 Domain	7
	2.2.2 Existing Systems	7
2.3	Project Methodology	10
2.4	Project Requirements	12
	2.4.1 Software Requirements	12
	2.4.2 Hardware Requirements	13
2.5	Project Schedule and Milestones	14
2.6	Conclusion	16
CHAPTER III	ANALYSIS	
3.1	Introduction	17
3.2	Problem Analysis	18
3.3	Requirement Analysis	19
	3.3.1 Data Requirement	20
	3.3.2 Functional Requirements	23
	3.3.3 Non-Functional Requirement	25
	3.3.4 Other Requirement	26
3.4	Conclusion	29
CHAPTER IV	DESIGN	
4.1	Introduction	30
4.2	High-Level Design	31
	4.2.1 System Architecture	31
	4.2.2 User Interface Design	31
	4.2.2.1 Navigation Design	40
	4.2.2.2 Input Design	40
	4.2.2.3 Output Design	42
	4.2.3 Conceptual and Logical database design	43

4.3	Detail Design	48
	4.3.1 Software Design	49
	4.3.2 Physical Database Design	50
4.4	Conclusion	54

CHAPTER V IMPLEMENTATION

5.1	Introduction	55
5.2	Software Development Environment Setup	56
5.3	Database Implementation Setup	58
5.4	Software Configuration Management	60
	5.4.1 Configuration Environment Setup	60
	5.4.2 Version Control Procedure	60
5.5	Implementation Status	61
5.6	Conclusion	63

CHAPTER VI TESTING

6.1	Introduction	64
6.2	Test Plan	65
	6.2.1 Test organization	65
	6.2.2 Test Environment	66
	6.2.3 Test Schedule	67
6.3	Test Strategy	68
	6.3.1 Classes of test	69
6.4	Test Design	70
	6.4.1 Test description	71
	6.4.2 Test data	75
6.5	Test result and analysis	77
6.6	Conclusion	77

CHAPTER VII	CONCLUSION	
7.1	Observation on Weaknesses and Strength	78
7.2	Propositions for Improvement	79
7.3	Contribution	79
7.4	Conclusion	80
	REFERENCES	81
	BIBLIOGRAPHY	83
	APPENDENCIES	84

LIST OF TABLES

TABLE	TITLE	PAGE
2.2	Software Requirement	14
2.3	Hardware Requirement	15
2.4	Project Schedule and Milestone	15
3.1	Data Requirement for Staff	21
3.2	Data Requirement for Daily	21
3.3	Data Requirement for Request	22
3.4	Data Requirement for Customer	22
3.5	Data Requirement for Problem	23
3.6	Data Requirement for Solution	23
3.7	Data Requirement for Transfer	23
3.8	Software Requirement for SMS application	27
3.9	Hardware Specification	29
3.10	Network Requirement	30
4.1	Input Design Table	42
4.2	Output Design Table	44

4.3	Data Dictionary for table STAFF	47
4.4	Data Dictionary for table DAILY	47
4.5	Data Dictionary for table REQUEST	48
4.6	Data Dictionary for table CUSTOMER	48
4.7	Data Dictionary for table PROBLEM	49
4.8	Data Dictionary for table SOLUTION	49
4.9	Data Dictionary for table TRANSFER	49
5.1	The Environment Setup	58
5.2	The Server Configuration	58
5.3	The Database Environment Setup	59
5.4	Implementation Status Schedule	63
6.1	Developer Machine Configuration	67
6.2	Environment Setup	68
6.3	Test Schedule of SMS	68
6.4	Test Cases for Login Module	73
6.5	Test Cases for Transaction Module	73
6.6	Test Cases for Insert Job Sheet	74
6.7	Test Cases for Invoice	74
6.8	Test Cases for Staff module	75
6.9	Test Cases for Report module	75
6.10	Test Cases for Backup module	76
6.11	Test Cases for Recovery	76
6.12	Test Data for System Authentication's Module	77
6.13	Test Result and Analysis	78

LIST OF FIGURES

DIAGRAM	TITLE	PAGE
2.1	Managing for Service Oriented	9
2.2	Above Ground Storage Tanks	10
2.3	Database Life Cycle (DBLC)	11
3.1	Flow Chart for Current SMS	19
3.2	Context diagram for SMS	24
3.3	Data flow Diagram for SMS	25
4.1	Log In interface	32
4.2	Change Password Interface	33
4.3	Service Request Form Interface	34
4.4	Service Request Assign Task Form Interface	35
4.5	Transfer Service Request Form Interface	36
4.6	Service Request Completed Task Form Interface	37
4.7	Invoicing Job Sheet Task Form Interface	38
4.8	Staff Daily Report Interface	39
4.9	Service Revenue per Duration Interface	39
4.10	Service Check up Interface	40
4.11	Navigation Design for SMS	41
4.12	Entity Relationship Diagram (ERD)	46
4.13	DDL Statement to Create Table Staff	52

LIST OF FIGURES

DIAGRAM	TITLE	PAGE
2.1	Managing for Service Oriented	9
2.2	Above Ground Storage Tanks	10
2.3	Database Life Cycle (DBLC)	11
3.1	Flow Chart for Current SMS	19
3.2	Context diagram for SMS	24
3.3	Data flow Diagram for SMS	25
4.1	Log In interface	32
4.2	Change Password Interface	33
4.3	Service Request Form Interface	34
4.4	Service Request Assign Task Form Interface	35
4.5	Transfer Service Request Form Interface	36
4.6	Service Request Completed Task Form Interface	37
4.7	Invoicing Job Sheet Task Form Interface	38
4.8	Staff Daily Report Interface	39
4.9	Service Revenue per Duration Interface	39
4.10	Service Check up Interface	40
4.11	Navigation Design for SMS	41
4.12	Entity Relationship Diagram (ERD)	46
4.13	DDL Statement to Create Table Staff	52

4.14	DDL Statement to Create Table Daily	52
4.15	DDL Statement to Create Table Request	52
4.16	DDL Statement to Create Table Customer	53
4.17	DDL Statement to Create Table Problem	53
4.18	DDL Statement to Create Table Solution	53
4.19	DDL Statement to Create Table Transfer	54
5.1	Software Environment Development Setup	57
5.2	Tracking of Source Code Version	62

LIST OF ABBREVIATIONS

SMS	-	Service Management System
DBLC	-	Database Life Cycle
DDL	-	Data Definition Language
DFD	-	Data Flow Diagram
DML	-	Data Manipulation Language
ERD	-	Entity Relationship Diagram
PK	-	Primary Key
FK	-	Foreign Key

CHAPTER I

INTRODUCTION

1.1 Project Background

Malcomm Enterprise Sdn. Bhd. is a good company that tries to explore the enhancement in ICT (Information and Communication Technology) field. His business also provides communication device, safety and office automate accommodate with high technology. Malcomm Enterprise Sdn. Bhd. was established on 29th July 2006 as a continuation from Malcomm Enterprise to cater its services and customer base expansion. As the new company, Malcomm Enterprise Sdn Bhd tries to together with other company in global technology. From time to time Malcomm Enterprise Sdn Bhd tries to raise use technology within the company. Malcomm Enterprise Sdn Bhd Company was a involving wills industry, communication and automation.

However, in this company still using the manual system for arrange them business. The manual system in mean is all data about service and staff for report.

Beside that also use the manual system is period adopted to solve problem and involved cost per month. The manual system not just makes the problem about the record data customer also for management side. Malcomm Enterprise Sdn Bhd want to develop one system will to solve the problem such as the information equipment tool in provision to client; report about the cost, about the service within transaction can assign service, update service transfer service and etc.

Service Management System (SMS) is design for the purpose of maintaining and managing database of Malcomm Enterprise Sdn. Bhd. Kemaman, Terengganu. This system was developed for company Malcomm Enterprise Sdn. Bhd and will be used by company system administrator.

Function Service Management System (SMS) is want to update record yang already have done manually made a system. Flow system is involving customer and company, where customer will make call and request or make complain any problem. Then clerk will take the information about the customer and take complain.

1.2 Problem statement

1.2.1 Lost data

- i. Before this, each received call, information about customer just note at whiteboard. Sometime other staff accidentally erased request info and in the same time only remembers further to know to technician.

1.2.2 Company can't monitor their staff

- ii. In job sheet, staff will check one by one for technician activity. It makes state so unwieldy.

1.2.3 Missing job from client

- iii. Missing job from client because sometime other customer just inform to technician and then technician just remember and will forgot about the client complain.

1.3 Objective

The objective of this system is:

- i. To produce one system which able to store the customer data
- ii. To provide the schedule for technician that can be easy to monitor
- iii. To enable recording problem.

1.4 Scope

The scope of this system consists of two parts. The first part is the target user and second part is the module.

- i. Record request
- ii. Assign technician
- iii. Record service

1.4.1 Target User

- i. The target user for this system will be the staff and administrator

1.4.2 Module

The modules included in this system are:

1.4.2.1 User access control

User access control module will help the system administrator in controlling the system. Using this module, the system administrator is capable to create level for staff and control the user access.

1.4.2.2 Backup and Recovery

Backup and recovery module will help the system administrator to make copies of data and can restore the original data.

1.4.2.3 Dynamic Report

Report will help the system administrator in generating a report of service management application based on request form customer.

1.5 Project Significance

This system is important in helping the system administrator in managing and maintaining the database. From this system, can to make backup and recovery for the database. Using this system, the backup and recovery process become easier. Therefore, this system may help the record service for each request correctly. Finally, the system will print the report for every service record.

1.6 Expected Output

The expected output of this system is that the system will have ability in management. Besides that, will also record how the technician solve the problem and the important is how to make upgrade the service. The expected output of this research will help in developing the system.

1.7 Conclusion

In this chapter, covers about background of this project, problems statements, objective, scope, project significance and expected output. This will solve problems faced by the. This chapter also states the detail objective, what are project significance and the scope of the project. For next chapter, it will cover the literature reviews and project methodology that is going to be used during developing the project.

The next chapter that is chapter will describe about literature review and project methodology.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter describe the literature reviews done pertaining to the handling and processing of problem management. The chapter mainly contains information on the definition of problem management and its benefits in the organizations. The chapter also contains information pertaining framework of best practices to use as a guide to develop a solution for handling the problem management process.

The framework studied and analyzed to seek for the compatibility in the solution of the problem management process. Service management system will be using is a system development life cycle (SDLC). Methodology is very important in developing the web based system. Choosing a right methodology will help to produce a better quality product, in terms of documentation standard, acceptability to the user, maintainability and consistency of software.

2.2 Facts and Finding

For this section, it will list about facts and finding that relate with this project based on research that has been made from internet and interview. This section also will be divided into three sections which are domains, existing system and techniques. In domain section, it will describe about domain that can relate with this project while in existing system section, it will study about existing system that has been used and similar with this project. In techniques section it will describe techniques or approaches that can be used in developing the project.

2.2.1 Domain

The domain for this system to make schedule for technician at the service, only admin and staff will use this system to assign the technician. This system will provide the service to administration.

2.2.2 Existing System

Company Malcomm Enterprise is still using manual way. Staff needs to do the management by themselves especially for the store information about the customer, even though there are some companies use the system to manage their company.

There are one systems which have been studied for existing system analysis which is Management for Service-Oriented using Microsoft Access databases. The detail explanations are shown below.

2.2.2.1 Management for Service-Oriented

Current system for Management for Service-Oriented just displays the interface and has description.

Receive Shipments

Manifest: 5210THATH Shipper: Deaton, Inc. Dates: Req'd: 1/1/01 Recv'd: 1/1/01 Tent. Ship: Firm Ship: [OK]

Defaults

Shipping: \$1
 Markup%: 20
 Dispo: n/a
 Rating: Good

Manifest Items

Customer	PO No	Plant	Cost	Qty	UOM
2848 Chimney Rock	PO-12345	Bamboo - Bambusa edulis	\$50	10	10 Gallon

Copyright Blue Claw Database Design, LLC

Record: 14 of 1

New Inventory Items

Tag	Avail	Plant	UOM	Rating	In	Out	Cost \$	Ship \$	Sell \$	Dispo
		Bamboo - Bambusa edulis	10 Gallon	Good	09/02/01		\$50.00	\$0.00	\$60.00	
		Bamboo - Bambusa edulis	10 Gallon	Good	09/02/01		\$50.00	\$0.00	\$60.00	
		Bamboo - Bambusa edulis	10 Gallon	Good	09/02/01		\$50.00	\$0.00	\$60.00	
		Bamboo - Bambusa edulis	10 Gallon	Good	09/02/01		\$50.00	\$0.00	\$60.00	
		Bamboo - Bambusa edulis	10 Gallon	Good	09/02/01		\$50.00	\$0.00	\$60.00	
		Bamboo - Bambusa edulis	10 Gallon	Good	09/02/01		\$50.00	\$0.00	\$60.00	
		Bamboo - Bambusa edulis	10 Gallon	Good	09/02/01		\$50.00	\$0.00	\$60.00	
		Bamboo - Bambusa edulis	10 Gallon	Good	09/02/01		\$50.00	\$0.00	\$60.00	
		Bamboo - Bambusa edulis	10 Gallon	Good	09/02/01		\$50.00	\$0.00	\$60.00	
		Bamboo - Bambusa edulis	10 Gallon	Good	09/02/01		\$50.00	\$0.00	\$60.00	

Record: 14 of 10

Buttons: Create New Inventory Items From Manifest, Load Previously Received Items, Move New Items to Inventory, Clear New Inventory Items

Record: 14 of 1

Figure 2.1: Interface Receive Shipment

As the plants are received they are placed directly into inventory and given a price based upon cost plus shipping (allocated to each plant) and a variable percent markup). The manifests were created in a prior screen where outgoing orders to suppliers are generated by grouping incoming orders from customers. Part of the order may be field directly from inventory and part of the order may require ordering from the supplier.