

CENTER OF ELECTRICAL AND MECHANICAL CALIBRATION SYSTEM

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BORANG PENGESAHAN STATUS TESIS

JUDUL CENTER OF ELECTRICAL AND MECHANICAL CALIBRATION SYSTEM
SESI PENGAJIAN 2010/2011
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CENTER OF ELECTRICAL AND MECHANICAL CALIBRATION SYSTEM

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

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DECLARATION

I hereby declare that this project report entitled
CENTER OF ELECTRICAL AND MECHANICAL CALIBRATION SYSTEM

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

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DEDICATION

To my beloved parents, family, supervisor, friends and well-wishers for all of your support and idea...

ACKNOWLEDGEMENTS

First and foremost, I thank God for blessing me and giving me the strength and perseverance to complete this project. I would like to extend my appreciation to Mrs Noor Azila Bt Draman @ Muda for accepting me as their PSM student and give me many advice during my project.

Besides that, not forgetting also my friends, especially my course mates from 3BITD, who were always there to give their support, opinion and advice for me to complete this project successfully. A million thanks also goes to my family who guided me to where I am today and for supporting me throughout this project. Lastly, I would like to thank to everyone who has contributed towards my project, either directly or indirectly. Your kindness and cooperation towards the completion of my paperwork is very much appreciated.

THANKS

ABSTRACT

The Center of Electrical and Mechanical Calibration System is an application that allows company employees to manage operations more easily and effectively. This system was developed aimed to improve services and efficiency of operations to the minimum. By using Microsoft Visual Web Developer 2010 Express as the web interface is a software graphical user interface that allows developers tools to design the system. Use Microsoft SQL Server as the database software that easily and efficiently in designing database structure. This system will facilitate the work of documentation where all records manually converted to computerized form of the security features as well as in improved data management. With this system is expected to facilitate its operation and management can save time in the future.

ABSTRAK

Sistem Kalibrasi Elektrik dan mekanikal berpusat merupakan satu aplikasi yang membolehkan pekerja-pekerja syarikat menguruskan operasi syarikat dengan lebih mudah dan berkesan. Sistem ini dibangunkan bertujuan bagi meningkatkan mutu perkhidmatan serta keberkesanan operasi syarikat ketahap minima. Dengan menggunakan perisian Microsoft Visual Web Developer 2010 Express sebagai antaramuka web yang merupakan perisian antaramuka pengguna grafik yang membolehkan pembangun mudah untuk merekabentuk sistem. Penggunaan perisian Microsoft SQL Server sebagai perisian pangkalan data yang mudah dan efisien dalam merekabentuk struktur pangkalan data. Sistem ini akan memudahkan lagi kerja-kerja dokumentasi dimana segala rekod manual ditukarkan kepada bentuk berkomputer dengan ciri-ciri keselamatan serta kemudahan dalam menguruskan data ditambah baik. Dengan adanya sistem ini diharap dapat memudahkan lagi operasi syarikat dan dapat menjimatkan masa dalam pengurusan pada masa akan datang.

TABLES OF CONTENTS

CHAPTER	SUBJECT	PAGE
	DECLARATION	i
	DEDICATION	ii
	ACKNOWLEDGEMENTS	iii
	ABSTRACT	iv
	ABSTRAK	v
	TABLE OF CONTENTS	vi
	LIST OF TABLES	xi
	LIST OF FIGURES	xiii
CHAPTER I	INTRODUCTION	
	1.1 Project Background	1
	1.2 Problem Statement(s)	1
	1.3 Objective	2
	1.4 Scope	2
	1.5 Project Significance	3
	1.6 Expected Output	3
	1.7 Conclusion	3
CHAPTER II	LITERATURE REVIEW AND PROJECT METHODOLOGY	
	2.1 Introduction	4
	2.2 Facts and Findings	5
	2.2.1 Domain	5

2.2.2 Existing System	5
2.2.2.1 Manual Operation System at Sime-Sirim Technologies Sdn. Bhd.	5
2.2.3 Technique	6
2.3 Project Methodology	7
2.3.1 Software Development Life Cycle (SDLC)	8
2.3.1.1 Requirement	8
2.3.1.2 Design	8
2.3.1.3 Implementation	9
2.3.1.4 Integration	9
2.3.1.5 Maintenance	9
2.3.2 Database Life Cycle (DBLC)	9
2.3.2.1 Initial Study	10
2.3.2.2 Database Design	10
2.3.2.3 Implementation and Loading	11
2.3.2.4 Testing and Evaluation	11
2.3.2.5 Maintenance and Evaluation	11
2.4 Project Requirements	11
2.4.1 Software Requirement	12
2.4.2 Hardware Requirement	12
2.4.3 Other Requirement	12
2.5 Project Schedule and Milestones	12
2.5.1 Project Schedule	12
2.6 Conclusion	15
CHAPTER III ANALYSIS	
3.1 Introduction	16
3.2 Problem Analysis	16
3.3 Requirement Analysis	17
3.3.1 Data Requirement	17

3.3.2	Functional Requirement	18
3.3.3	Non-Functional Requirement	21
3.3.4	Other Requirement	22
3.4	Conclusion	23
CHAPTER IV	DESIGN	
4.1	Introduction	24
4.2	High-Level Design	25
4.2.1	System Architecture	25
4.2.2	User Interface Design	26
4.2.2.1	Navigation Design	27
4.2.2.2	Input Design	28
4.2.2.3	Output Design	38
4.2.3	Conceptual and Logical Database Design	39
4.2.3.1	Conceptual Database Design	39
4.2.3.2	Logical Database Design	40
4.3	System Architecture	44
4.3.1	Software Design	44
4.3.2	Physical Database Design (Schema Level – DDL / DCL)	47
4.3.2.1	Schema Level of DDL	48
4.3.2.2	Schema Level of DCL	56
4.4	Conclusion	68
CHAPTER V	IMPLEMENTATION	
5.1	Introduction	69
5.2	Software Development Environment Setup	70
5.2.1	Software Environment Setup	70
5.2.2	Hardware Environment Setup	70
5.2.3	Database Environment Setup	70

5.3 Database Implementation	71
5.3.1 View Statement	71
5.3.2 Stored Procedure	72
5.4 Software Configuration Management	74
5.4.1 Configuration Environment Setup	74
5.4.1.1 Microsoft SQL Server 2008 R2	74
5.4.2 Version Control Procedure	75
5.5 Implementation Status	76
5.6 Conclusion	78

TESTING

6.1 Introduction	79
6.2 Test Plan	80
6.2.1 Test Organization	80
6.2.2 Test Environment	81
6.2.3 Test Schedule	82
6.3 Test Strategy	84
6.3.1 Classes of Tests	85
6.3.1.1 Unit Testing	85
6.3.1.2 Integration Testing	86
6.3.1.3 System Testing	86
6.3.1.4 Acceptance Testing	86
6.3.1.5 Security Testing	87
6.4 Test Design	87
6.4.1 Test Description	87
6.4.2 Test Data	90
6.5 Test Result and Analysis	95
6.6 Conclusion	96

PROJECT CONCLUSION

7.1 Observation on Weaknesses and Strengths	97
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7.1.1 Weaknesses	97
7.1.1.1 System Performance	97
7.1.1.2 Result of Calibration	97
7.1.1.3 Documentation	98
7.1.2 Strengths	98
7.1.2.1 Security Level of System Access	98
7.1.2.2 Backup Data	98
7.2 Propositions for Improvement	99
7.3 Contribution	99
7.4 Conclusion	100
REFERENCES	101
BIBLIOGRAPHY	102
APPENDICES	103

LIST OF TABLES

TABLE	TITLE	PAGE
2.1	Project Schedule	13
4.1	Assign Table	40
4.2	Cal_register Table	41
4.3	Customer Table	41
4.4	Department Table	41
4.5	Employee Table	41
4.6	Equipment Table	42
4.7	Job Table	42
4.8	Payment Table	42
4.9	Result Table	43
4.10	State Table	43
4.11	Status Table	43
4.12	Template Table	44
5.1	Database Environment Setup	71
5.2	Implementation Status	76
6.1	Hardware and Software Specification	81
6.2	Testing Schedule Specification for Admin	82
6.3	Testing Schedule Specification for Manager	83
6.4	Testing Schedule Specification for Supervisor	83
6.5	Testing Schedule Specification for Technician	83
6.6	Testing Schedule Specification for Account	84
6.7	Testing Schedule Specification for Clerk	84
6.8	Test Environment Factors	84

6.9	Test Case for Login Module	87
6.10	Test Case for Clerk	88
6.11	Test Case for Account	88
6.12	Test Case for Technician	88
6.13	Test Case for Supervisor	89
6.14	Test Case for Admin	89
6.15	Test Data for Login Module	90
6.16	Test Data for Clerk	91
6.17	Test Data for Account	91
6.18	Test Data for Technician	92
6.19	Test Data for Supervisor	93
6.20	Test Data for Admin	93
6.21	Test Result and Analysis	96

LIST OF FIGURES

DIAGRAM	TITLE	PAGE
2.1	Waterfall Model	8
2.2	Database Life Cycle	10
2.3	Gantt Chart	14
3.1	Context Diagram	18
3.2	Data Flow Diagram (Level 0)	19
3.3	Data Flow Diagram (Level 1) Manage Customer	20
3.4	Data Flow Diagram (Level 1) Manage Employee	20
3.5	Data Flow Diagram (Level 1) Manage Equipment	21
3.6	Data Flow Diagram (Level 1) Manage Payment	21
4.1	Three-Tier Architecture	25
4.2	Navigation Design	27
4.3	Login Design	28
4.4	Employee Register Design	29
4.5	Employee Manage Design	30
4.6	Customer Register Design	31
4.7	Customer Manage Design	32
4.8	Equipment Register Design	33
4.9	Equipment Manage Design	33
4.10	Register Calibration Design	34
4.11	Job Assign Design	35
4.12	New Template Design	36

4.13	Manage Template	36
4.14	Result Detail Design	37
4.15	Payment Registration Design	37
4.16	Employee Resign Design	38
4.17	ER Diagram of CEMCS	39
4.18	Data Flow Diagram (Level 0)	45
4.19	Data Flow Diagram (Level 1) Manage Customer	46
4.20	Data Flow Diagram (Level 1) Manage Employee	46
4.21	Data Flow Diagram (Level 1) Manage Equipment	47
4.22	Data Flow Diagram (Level 1) Manage Payment	47
5.1	Connect to Server (Login Tab)	74
5.2	Connect to Server (Connection Properties Tab)	75
5.3	Database Version Control	76
6.1	Test Organization Diagram	81

CHAPTER I

INTRODUCTION

1.1 Project Background

Center of Electrical and Mechanical Calibration System is a corporate system developed to calibrate electrical and mechanical equipment. This system is seen as a new method to all documentation process including test reports, customer information, and bill payment. Flow of operation begins when customers send their equipment to do the calibration process to the clerk. Then the clerk will key in the relevant customer information such as name, address, phone number, etc. into the system. Clerks will also register the equipment information such as name, manufacturer, and serial number. When all information is keyed in into the system, the supervisor will give the equipments to the technicians who will perform the calibration process. The results of the calibration process then entered into the system and sent to the supervisor for verification. After that the finance division will deliver the invoice to the customer. Customers will come back to pay the company and receive a payment receipt and take the equipment. The report on the performance calibration process and financial is prepared for the management.

1.2 Problem Statement(s)

- Lack of exposure data security matters that are not desirable as theft, and data copy.

- Access data, including confidential data that is easily accessible and this will tarnish the company image.
- Troublesome for employee in the relevant documentation such as reports, invoices, etc and this takes time and costs to repair.

1.3 Objective

- To decrease data redundancy.
- To increase security level access for user authorization.
- To transform from traditional system (manual) to computer-based system (auto).
- To reduce operational time and cost.

1.4 Scope

- Security – only authorize user can access these system.
- Payment – all transactions such as employee salary and payment of bills made in cash in Ringgit Malaysia.
- Access data – data that can be accessed in connection with duties :
 - Technician can see equipment information that was assigned by supervisor and key in the calibration result.
 - Supervisor can manage and assign equipment to technician and verified the calibration result.
 - Manager can view financial report, company performance, and so forth.
 - Finance can arrange the payment process.
 - Admin system can manage the entire system.
- Report – profit report and progress report can be view by management in bar chart. These report viewed separated by monthly and year.

- User system – employee (between 10 and 20) such as technician, supervisor, manager, finance, clerk, and system admin.

1.5 Project Significance

The significance of this project is to help workers in the daily operations of the company in addition to improve the quality of work. Apart from that, the image can be enhanced by the system as a regular course. Meanwhile, the data is also guaranteed as it is stored in the system.

1.6 Expected Output

The expected project output is to provide solution to the problem faced by the company. This system can indirectly reduce daily operating costs and time. Furthermore, it increases the data safety from the unauthorized user. This system is also expected to improve the quality of work by employees.

1.7 Conclusion

In conclusion, Center of Electrical and Mechanical Calibration System is a corporate system only used by internal company. It can to help operational cost and reduce time for company. The next chapter will explain about fact and finding in this system. It is also discuss the technique an approach used, methodology, requirement, and the project schedule.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter describes about literature review and methodology to develop the Center of Electrical and Mechanical Calibration System. A literature review is a body of text that aims to review the critical points of current knowledge on a particular topic. This means, the chapter will explore on area covered by this system, which at best will provide definitions and framework for the Center of Electrical and Mechanical Calibration System.

Methodology is defined as a body of methods, rules and postulates employed by a discipline or a particular procedure or set of procedures. The use of methodology helps to produce a better quality product to ensure that user requirements are met completely. Besides that, a good methodology chosen will be a systematic guidance on how to develop software successfully, where the guidance manifest with proven approaches, best practices, guideline, techniques and sequences.

2.2 Facts and Findings

2.2.1 Domain

Calibration is a process when technician calibrate equipments sent by customers. The equipment must be registered by clerk before the calibrate test can be started. This to ensure each of equipment sent by customer is recorded with the information about customer, what type of equipment that will be calibrated, and payments detail paid by customer.

Usually, calibration process can make if the customer want to check their equipment that is used according to the specifications of equipment. The customer must send their equipment to the company and the calibration process can be done according total of equipment units. It is to ensure the result of calibration valid referred to equipment specification.

2.2.2 Existing System

In this part, the topic discussed is about comparing an existing system that is being used with the proposed system, the Center of Electrical and Mechanical Calibration System.

2.2.2.1 Manual Operation System at Sime-Sirim Technologies Sdn. Bhd.

SIME-SIRIM Technologies Sdn. Bhd. is a service oriented company which offers calibration services on equipment sent from the client. Equipment sent to the company should be calibrated at all times before returned to the customer. The purpose of this calibration was carried out to ensure equipment is safe in use and match the correct specifications.

Customers will be sent to the company's equipment to be tested. All information about customers and equipment will be recorded. After information is recorded, the equipment had to be sent to the test and the information will be submitted to the department heads involved.

Department heads will review and give tasks to technicians and under. Technicians who received the assignment to perform the test equipment in accordance with guidelines prescribed tests. Before starting the test calibration, equipment related to the process set up by type of equipment. In the process of calibration testing, often the test will be performed three times to obtain accurate and consistent results. If its approval is received the test results fail, the same process three times to do.

Result of the findings of the examination will be recorded in the format of the decision and submitted to the supervisor for verification purposes. For the failed test results, reason statements as provided to the consumer. Then the data may be provided to account for the payment process.

2.2.3 Technique

In this section, the techniques here refer to the progress of calibration the equipment needed in developing the Center of Electrical and Mechanical Calibration System. The progresses used are:

- Create business applications including interfaces, controls, writing and debugging code, and interactive menus.
- Apply data modeling technique such as Entity Relationship Diagram, Data Flow Diagram, and Context Diagram to create a database model.

- Implement a database model in relational database management system (such as SQL or Access) including the creation of tables, constraints, loading data, and views
- Use modern application development products as prototyping tools in the system development process.

2.3 Project Methodology

In developing the Center of Electrical and Mechanical Calibration System, System Development Life Cycle (SDLC) approach for software development process used is Waterfall model. The Waterfall model is a graphical representation of the SDLC. It is divided into five phases – Requirement, Design, Implementation, Integration, and Maintenance reviewed by sequence phases, means that each phase must be completed before the next phase can begin.

For developing the database, Database Life Cycle (DBLC) is chosen because the DBLC never ends and continues after a database has been implemented. It is divided in six phases, which are database initial study, database design, implementation and loading, testing and evaluation, and maintenance and evaluation.