

**INFORMATION TECHNOLOGY EQUIPMENT MANAGEMENT SYSTEM
(ITEMS)**

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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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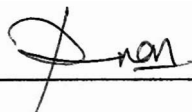
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**INFORMATION TECHNOLOGY EQUIPMENT MANAGEMENT SYSTEM
(ITEMS)**

MOHD NOR IRMAN BIN SULAIMAN


**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
2009**

DECLARATION

I hereby declare this project report entitled
**INFORMATION TECHNOLOGY EQUIPMENT MANAGEMENT SYSTEM
(ITEMS)**

Is written by me and is my own effort and that no part has been plagiarized
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ABSTRACT

The Information Technology (IT) Asset Management function is the primary point of accountability for the life-cycle management of information technology assets throughout the organization. Included in this responsibility are development and maintenance of policies, standards, processes, systems and measurements that enable the organization to manage the IT Asset efficiently. Without proper IT Asset management, the organization puts themselves in a risky condition in terms of asset utilization and management. To avoid this problem in Faculty of Information and Communication Technology (FICT), an IT Asset management system is developed to improve the current implementation of IT equipment management in FICT. The system must be equipped with all the basic record management such as search, add, update and delete of data as well as some added functionality such as equipment's maintenance record, loan record, disposal record and dynamic reporting. Some administrative features are also needed such as backup, recovery, roll-forward recovery, data replication and transaction logging. The system should be implemented as web-based application and developed by using rational Unified Process (RUP) approach. The result or the expected output for this system would be the development of IT Asset management System which is IT Equipment management Systems (ITEMS).

ABSTRAK

Fungsi pengurusan aset teknologi maklumat merupakan aspek utama dalam kebertanggung jawaban dalam kitaran pengurusan aset teknologi maklumat di dalam sesebuah organisasi. Tanggungjawab yang dipegang oleh pengurusan aset teknologi maklumat ialah pembangunan dan penyelenggaraan polisi, ketetapan, sistem dan teknik yang membolehkan sesebuah organisasi menguruskan aset teknologi maklumat mereka dengan berkesan. Tanpa pengurusan aset teknologi maklumat yang berkesan, organisasi tersebut meletakkan posisi mereka dalam keadaan yang berisiko di dalam aspek penggunaan dan pengurusan aset. Untuk mengelakkan masalah ini daripada berlaku kepada Fakulti Teknologi Maklumat dan Komunikasi (FTMK), sebuah sistem pengurusan aset teknologi maklumat perlu dibina untuk menambah baik implementasi sistem pengurusan sedia ada di FTMK. Sistem tersebut perlu mempunyai fungsi asas pengurusan rekod seperti paparan, tambahan, pembuangan dan pengubahsuaian data selain fungsi tambahan seperti merekod penyelenggaraan, pinjaman, pelupusan dan laporan dinamik mengenai aset. Fungsi pengurusan sistem juga perlu ditambah seperti *backup*, *recovery*, *roll-forward-recovery*, replikasi data dan log transaksi. Sistem ini juga perlu diimplemantasi sebagai sebuah aplikasi berasaskan web dan dibangunkan menggunakan teknik *Rational Unified Process (RUP)*. Hasil daripada kajian yang dilakukan ialah Sistem Pengurusan Peralatan Teknologi Maklumat (ITEMS).

TABLE OF CONTENTS

| CHAPTER | SUBJECT | PAGE |
|-------------------|--|-------------|
| | ACKNOWLEDGEMENTS | ii |
| | ABSTRACT | iii |
| | ABSTRAK | iv |
| | TABLE OF CONTENTS | v |
| | LIST OF TABLES | xi |
| | LIST OF FIGURES | xiii |
| CHAPTER I | INTRODUCTION | |
| | 1.1 Project Background | 1 |
| | 1.2 Problem Statements | 2 |
| | 1.3 Objectives | 3 |
| | 1.4 Scope | 4 |
| | 1.5 Project Significance | 6 |
| | 1.6 Expected Output | 6 |
| | 1.7 Conclusion | 7 |
| CHAPTER II | LITERATURE REVIEW AND PROJECT METHODOLOGY | |
| | 2.1 Introduction | 8 |
| | 2.2 Facts and Findings | 8 |
| | 2.2.1 Domain | 8 |
| | 2.2.2 Existing System | 10 |

| | | |
|---------|---------------------------------|----|
| 2.2.2.1 | AssetManage 2007 | 10 |
| 2.2.2.2 | ManageEngine | |
| | ServiceDesk Plus 7.5 | 11 |
| 2.2.2.3 | Case Study 1 – | |
| | Ashton Park School | 12 |
| 2.2.2.4 | Summary | 13 |
| 2.2.2.5 | Conclusion | 14 |
| 2.2.3 | Technique | 14 |
| 2.3 | Project Methodology | 15 |
| 2.3.1 | The Three-Tier Architecture | 15 |
| 2.3.2 | The Application Tier | 15 |
| 2.3.3 | The Data Tier | 18 |
| 2.4 | Project Requirements | 21 |
| 2.4.1 | Software Requirements | 21 |
| 2.4.2 | Hardware Requirements | 22 |
| 2.5 | Project Schedule and Milestones | 23 |
| 2.6 | Conclusion | 23 |

CHAPTER III ANALYSIS

| | | |
|-------|---------------------------------------|----|
| 3.1 | Introduction | 24 |
| 3.2 | Problem Analysis | 25 |
| 3.2.1 | Current System Scenario | 25 |
| 3.2.2 | Problem Statement | 27 |
| 3.3 | Requirement Analysis | 29 |
| 3.3.1 | Data Requirement | 29 |
| 3.3.2 | Functional Requirement | 30 |
| 3.3.3 | Non-Functional Requirement | 32 |
| | 3.3.3.1 Performance and Throughput | 32 |
| | 3.3.3.2 Scalability | 33 |
| | 3.3.3.3 Integrity | 33 |

| | | |
|---------|----------------------|----|
| 3.3.3.4 | Security | 33 |
| 3.3.3.5 | Manageability | 34 |
| 3.3.3.6 | Serviceability | 34 |
| 3.3.3.7 | Usability | 34 |
| 3.3.3.8 | Maintainability | 34 |
| 3.3.4 | Other Requirement | 35 |
| 3.3.4.1 | Software Requirement | 35 |
| 3.3.4.2 | Hardware Requirement | 37 |
| 3.3.4.3 | Network Requirement | 37 |
| 3.4 | Conclusion | 38 |

CHAPTER IV DESIGN

| | | |
|---------|---|----|
| 4.1 | Introduction | 39 |
| 4.2 | High Level Design | 40 |
| 4.2.1 | System Architecture | 40 |
| 4.2.1.1 | Static and Dynamic View of ITEMS | 41 |
| 4.2.2 | User Interface Design | 41 |
| 4.2.2.1 | Navigation Design | 42 |
| 4.2.2.2 | Input Design | 45 |
| 4.2.2.3 | Output Design | 45 |
| 4.2.3 | Conceptual and Logical Database Design | 45 |
| 4.2.3.1 | Conceptual Database Design | 45 |
| 4.2.3.2 | Logical Database Design | 46 |
| 4.2.3.3 | DBMS Selection | 47 |
| 4.3 | System Architecture | 47 |
| 4.3.1 | Software Design | 47 |
| 4.3.1.1 | CSC ITEMS | 47 |
| 4.3.2 | Physical Database Design | 54 |

| | | |
|---------|--------------------------|----|
| 4.3.2.1 | Tablespaces | 54 |
| 4.3.2.2 | Tables | 55 |
| 4.3.2.3 | Indexes | 59 |
| 4.3.2.4 | User Administration | 60 |
| 4.3.2.5 | Granting System | |
| | Privileges to Roles | 62 |
| 4.3.2.6 | Assigning Roles to Users | 63 |
| 4.3.2.7 | Sequence | 63 |
| 4.3.2.8 | Triggers | 67 |
| 4.4 | Conclusion | 71 |

CHAPTER V IMPLEMENTATION

| | | |
|-------|--|----|
| 5.1 | Introduction | 73 |
| 5.2 | Software Development Environment Setup | 73 |
| 5.3 | Database Implementation | 75 |
| 5.3.1 | Data Loading | 75 |
| 5.3.2 | Database Access | 75 |
| 5.4 | Software Configuration Management | 77 |
| 5.4.1 | Configuration Environment Setup | 77 |
| 5.4.2 | Version Control Procedure | 79 |
| 5.4.3 | Implementation Status | 79 |
| 5.5 | Conclusion | 80 |

CHAPTER VI TESTING

| | | |
|---------|--------------------|----|
| 6.1 | Introduction | 81 |
| 6.2 | Test Plan | 83 |
| 6.2.1 | Test Organization | 83 |
| 6.2.2 | Test Environment | 85 |
| 6.2.2.1 | User's Environment | 85 |
| 6.2.2.2 | Test Server | 85 |

| | | |
|-----|-------------------------------|----|
| | 6.2.2.3 Business requirements | 85 |
| | 6.2.2.4 Documentation | 85 |
| | 6.2.3 Test Schedule | 86 |
| 6.3 | Test Strategy | 86 |
| | 6.3.1 Classes of Tests | 87 |
| | 6.3.1.1 Component Test | 88 |
| | 6.3.1.2 System Test | 88 |
| 6.4 | Test Design | 89 |
| | 6.4.1 Test Description | 89 |
| | 6.4.2 Test Data | 89 |
| 6.5 | Test Results and Analysis | 90 |
| 6.6 | Conclusion | 90 |

CHAPTER VII PROJECT CONCLUSION

| | | |
|-----|---|----|
| 7.1 | Observation on Weaknesses and Strengths | 91 |
| 7.2 | Propositions for Improvements | 92 |
| | 7.2.1 Lack of User Interactivity | 92 |
| | 7.2.2 Frequently Lost Connection to Database Server | 92 |
| | 7.2.3 Testing Not Done in Real Time Environment | 93 |
| 7.3 | Contribution | 93 |
| 7.4 | Conclusion | 93 |

| | | |
|--|------------|----|
| | REFERENCES | 95 |
|--|------------|----|

| | | |
|--|--------------|----|
| | BIBLIOGRAPHY | 96 |
|--|--------------|----|

| | | |
|-------------------|------------|-----|
| APPENDICES | APPENDIX A | 97 |
| | APPENDIX B | 99 |
| | APPENDIX C | 101 |

| | |
|-------------------|------------|
| APPENDIX D | 103 |
| APPENDIX E | 105 |
| APPENDIX F | 114 |
| APPENDIX G | 129 |
| APPENDIX H | 137 |
| APPENDIX I | 139 |
| APPENDIX J | 147 |
| APPENDIX K | 150 |
| APPENDIX L | 167 |
| APPENDIX M | 175 |

LIST OF TABLES

| TABLE | TITLE | PAGE |
|--------------|--|-------------|
| 2.1 | RUP Tasks | 17 |
| 2.2 | Activities Performed in RUP Process | 19 |
| 3.1 | Equipment's Category Decision | 26 |
| 3.2 | ITEMS Functional Requirements | 30 |
| 3.3 | Performance and Throughput System Qualities | 32 |
| 3.4 | Scalability System Qualities | 33 |
| 3.5 | Integrity System Qualities | 33 |
| 3.6 | Security System Qualities | 33 |
| 3.7 | Manageability System Qualities | 34 |
| 3.8 | Serviceability System Qualities | 34 |
| 3.9 | Usability System Qualities | 34 |
| 3.10 | Modular System Qualities | 34 |
| 3.11 | Software Requirements | 35 |
| 3.12 | Hardware Requirements | 37 |
| 3.13 | Network Requirements | 37 |
| 4.1 | User Interface Design Principles (Source: Sommerville, 2007) | 41 |
| 6.1 | Test-Team Assignments | 83 |
| 6.2 | ITEMS Test Schedule | 86 |
| 7.1 | ITEMS Weaknesses and Strengths | 91 |
| G.1 | Input Design for ITEMS | 130 |
| H.1 | Output Design for ITEMS | 138 |
| I.1 | ITEMS Data Dictionary | 140 |

| | | |
|------|--|-----|
| J.1 | Development Status of ITEMS | 148 |
| K.1 | Unit Test Login | 151 |
| K.2 | Unit Test Search Equipment | 153 |
| K.3 | Test Add Equipment | 153 |
| K.4 | Unit Test Update Equipment | 155 |
| K.5 | Unit Test Delete Equipment | 159 |
| K.6 | Unit Test Equipment Equipment | 160 |
| K.7 | Unit Test Update Equipment Maintenance | 160 |
| K.8 | Unit Test Dispose Equipment | 161 |
| K.9 | Unit Test Add Supplier | 162 |
| K.10 | Unit Test Update Supplier | 163 |
| K.11 | Unit Test Add Loan | 165 |
| L.1 | ITEMS Integration Test Plan | 168 |
| M.1 | ITEMS Defect Tracking | 176 |

LIST OF FIGURES

| DIAGRAM | TITLE | PAGE |
|----------------|--|-------------|
| 2.1 | RUP Process Architecture (Source: Kruchten (2000)) | 17 |
| 2.2 | Database Life Cycle (DBLC) | 19 |
| 3.1 | Flowchart for Current System | 25 |
| 4.1 | The Three-Tier Architecture of ITEMS | 40 |
| 4.2 | Navigation Design for Normal User | 42 |
| 4.3 | Navigation Design for Technician | 43 |
| 4.4 | Navigation Design for Admin | 44 |
| 6.1 | The Testing Process | 82 |
| 6.2 | A Model of the Software Testing Process | 82 |
| A.1 | Gantt Chart | 98 |
| B.1 | ITEMS Entity Relationship Diagram (ERD) | 100 |
| C.1 | Use Case Diagram | 102 |
| D.1 | Class Diagram | 104 |
| E.1 | Login Sequence Diagram | 106 |
| E.2 | Search Record Sequence Diagram | 106 |
| E.3 | Delete Record Sequence Diagram | 107 |
| E.4 | Add New Loan Sequence Diagram | 107 |

| | | |
|------|------------------------------------|-----|
| E.5 | Return Loan Sequence Diagram | 108 |
| E.6 | View Expired Loan Sequence Diagram | 108 |
| E.7 | Add New User Sequence Diagram | 109 |
| E.8 | Update User Sequence Diagram | 110 |
| E.9 | Delete User Sequence Diagram | 111 |
| E.10 | Backup Database Sequence Diagram | 111 |
| E.11 | Recover Database Sequence Diagram | 112 |
| E.12 | Audit Database Sequence Diagram | 113 |
| F.1 | Login Page | 115 |
| F.2 | Search Equipment Page | 115 |
| F.3 | Add Equipment Page | 116 |
| F.4 | Add Supplier Page | 117 |
| F.5 | Update Equipment Page | 118 |
| F.6 | Delete Equipment Page | 119 |
| F.7 | Add New Loan Page | 120 |
| F.8 | Return Loan Page | 121 |
| F.9 | View Expired Loan Page | 122 |
| F.10 | Add New User Page | 123 |
| F.11 | Update User Page | 124 |
| F.12 | Delete User Page | 125 |
| F.13 | Database Backup Page | 126 |
| F.14 | Database Recovery Page | 127 |
| F.15 | View Database Audit Page | 128 |

CHAPTER I

INTRODUCTION

1.1 Project Background

The name given for this project is FTMK *Information Technology Equipment Management System (ITEMS)* and this project will be developed for the use of Faculty of Information and Communication Technology (FICT). *ITEMS* is an asset management system and this project will focus on the management of the Information Technology (IT) assets or equipments that are registered under the FICT.

Under the University's rule, all the records of the equipments need to be stored after the Faculty's management has obtained the equipments from the supplier. This is to ease the process of asset auditing which will be done by the Audit Unit of the Chancellery office apart from other upper management tasks such as financial auditing and so on.

For the current moment, all the records of IT equipments belonging to FICT are stored and managed in a Microsoft Excel spreadsheet. An increasing number of IT equipments bought each year by the Faculty's management have given many challenges to the Lab Manager and the technicians to store and manage the records of current and newly purchased equipments. The task of inserting, updating and other operations on the data of all the equipments can become a hassle to the technicians apart from experiencing the difficulties in displaying the required data from the Microsoft Excel spreadsheet. The other drawbacks of the current implementation is

the difficulty in keeping track the maintenance, loan and the movement record of each equipment which is done by using papers and forms.

Hence, the main purpose of the development of this project is to provide an alternative towards the current implementation of IT equipments record management by introducing a web-based application with the implementation of a Database Management System (DBMS) to store all the IT equipments data. *ITEMS* will be developed to eliminate all the possible difficulties that arise from the current implementation of the equipments record system by providing modules to ease the task of managing the IT equipments. First of all, this project will provide a module to display only the required data from the database. Next, some modules will be developed to solve the difficulties in tracking the maintenance, loan and movement records of the IT equipments.

This project will be developed as a web-based system so that the users can easily access the system anywhere and at any time.

1.2 Problem Statements

Faculty of Information and Communication Technology (FICT) was established in the year 2001 and since then, the Faculty's management has bought many IT equipments for Teaching and Learning (T&L) and Research and Development (R&D) use. For each of the equipments, all the necessary information needs to be recorded such as the equipment's type, model number, price, invoice number, date of purchase and so much more.

According to Mr. Khairulnizam Bin A. Rahman, one of the senior technician in FICT, there are many difficulties arise during the management of data using the Microsoft Excel spreadsheet. Some of the problems that arise are:

- a. Difficult to generate the specific output regarding the equipments management task.

For example, the technician needs to manually count the number of projectors owned by FICT by counting each of the projectors record according to their assignment's location.

- b. **Cumbersome in tracking expired IT equipment's loan.**
In some cases, the equipment's borrower did not return the item before or on the due date of the loan. Since the record of equipments loan are stored by using papers, there are no mechanism to alert the technician of the expiry of the loan.
- c. **Rigidity in keeping track of specific IT equipment's maintenance record.**
For each of the equipment sent for maintenance, a piece of paper is assigned to that equipment specially for recording all the maintenance details. Since there are many IT equipments are sent to technician each day for maintenance, it is hard for the technician to keep track the necessary information of the equipment's maintenance such as the number of times sent for maintenance, type of maintenance, cost and so much more.
- d. **Hard to find the exact location or movement of the IT equipments due to inconsistencies of data.**
In some cases, IT equipments are moved from one location to the other without being recorded or updated due to difficulties to search for specified equipments.

1.3 Objective

This project is developed to mainly to solve some problems faced by the technicians in manipulating the IT equipments data under their supervision. The objective of this project is:

- a. **To display required information that meets desired criteria regarding the IT equipments.**

The user can view only the required information after specifying the desired search criteria. For instance, the user can view the total number and the total price of projectors in one search task regardless of the location.

- b. To notify the technicians of expired equipment's loan.
ITEMS will notify the user of the expired loan of IT equipment so that it is easy for the user to keep track the borrower and the borrowed equipment.
- c. To store and manipulate the maintenance record of each equipments.
The output of this project will be able to store the details of each equipments maintenance record as well as manipulating the record so that it is easy for the user to evaluate the equipment's condition for future use.
- d. To track the movement and location assigned of the IT equipments.
This system will ease the task of locating the IT equipments should the equipments are moved from one location to the other. This is very important during the auditing process is conducted as well as to keep track the availability of the equipment.

1.4 Scope

- a. User scope
 - i. System Administrator (*ITEMS* Admin).
The person-in-charge for administrating *ITEMS*; the task of *ITEMS* Admin includes managing system users, perform scheduled backup, maintain security of hardware, software, and data file access and other system administration tasks. *ITEMS* Admin will have all the privileges on performing any operation on *ITEMS*.

ii. FICT Management

Personnel of FICT management such as the Chief Assistant Registrar and the Laboratory Manager. They will have limited access in using *ITEMS*.

iii. FICT Technicians

Technicians of FICT; which will the ability to perform basic operation on *ITEMS* such as viewing, inserting and updating some records of the IT equipments.

b. System scope

1. This system will be implemented in a web-based environment.

This project will be run on Apache Tomcat web server and will be using JavaServer Pages (JSP) and Java EE as the system's server-side scripting.

ii. This project can be accessed in a multi platform operating system.

Since this project is a web-based implementation, this system can be accessed in any operating system platforms that have the access to the Internet.

i. This project can perform basic database operation such as viewing, inserting, updating and deleting of IT equipments record.

These are basic functionality of *ITEMS* that is necessary for the management of IT equipments record.

ii. This system will produce necessary reports such as IT equipment's assignment report, maintenance report, loan expiry report and overall report.

All these reports will be generated on user demand for the use of auditing, IT equipments evaluation and other necessary considerations such as determining the suitability of equipments to be purchased.

1.5 Project Significance

Since *ITEMS* is developed for the use of FICT, this project will directly benefits FICT in many ways. Some of the benefits offered by the implementation of *ITEMS* are:

a. To FICT management

This system provides some modules to generate the necessary reports that contain all the details of the Faculty's IT equipments such as the model type, price of purchase, date of purchase, location and so on. This will ease the management to analyze the usage and suitability of the IT equipments to be used as well as to facilitate the management in preparing reports for auditing tasks.

b. To FICT's IT Technicians

This project is developed to provide a straightforwardness of the management of IT equipments under their supervision. With the implementation of this project, the technician will be expected to execute the tasks relating to IT equipments such as monitoring the equipments movement, tracking expired loan and identifying maintenance record for each of the equipment more efficiently and faster.

1.6 Expected Output

This project is expected to meet the requirements of FICT management which is to ease the process of preparing reports for auditing process as well as to assist the technicians to perform the tasks relating to the IT equipments management.

1.7 Conclusion

In a nutshell, ITEMS is an IT asset management system which is developed for the use of FICT. *ITEMS* provide functionalities to overcome the problems that arise from existing system as well as to assist the management and also the IT technicians of FICT in performing daily tasks relating to the management of FICT IT equipments.

The next chapter will discuss the Literature Review and Project Methodology of *ITEMS*.