

**MODELLING AUTOMATED DATA MANIPULATION AND RECORD
MANAGEMENT TO IMPROVE INTERNAL EXAMINATION
OPERATION: A CASE STUDY IN FTMSK**

**INSTITUT PENYELIDIKAN, PEMBANGUNAN DAN PENGKOMERSILAN
UNIVERSITI TEKNOLOGI MARA
40450 SHAH ALAM, SELANGOR
MALAYSIA**

BY :

**AZLAN ISMAIL
MOHAMAD NORZAMANI SAHRONI
MARINA AHMAD**

JUN 2006

ACKNOWLEDGEMENT

In the name of Allah, The Mighty Gracious Most Merciful and he alone is worthy of all praise. Thankfulness of the Al-Mighty for giving us the strength, patience and ability to complete this research.

We would like to thank to those who are directly or indirectly support us in completing this research. Million of thanks to the following:

- Our Dean, Assoc Prof. Dr Adnan Ahmad because of the opportunities given to do this research
- Our former Head of Computer Science, Prof Dr Zainab Abu Bakar for her guidance.
- Our chairman of Examination Committee, Mr Adzhar Abd Kadir for testing the system.
- Our System Developers, Kamarul Hazimin Jafry, Syahaneim Marzukhi, Rose Maree binti Mohamad, Nik Syahida binti Nik Ab Malik and Noor Azma binti Ismail for their effort in developing the IES.
- The management personnel, Mr Mior Hishamuddin, Mrs Norita Sapien and Ms Suzetty Ezra for supporting our team.
- The examination committee and also the FTMSK's colleagues for their spirit of friendliness which led us towards completing this research.

TABLE OF CONTENTS

ACKNOWLEDGEMENT	
TABLE OF CONTENTS	ii
LIST OF TABLE	iv
LIST OF FIGURE	vi
LIST OF ABBREVIATION	ix
ABSTRACT	x
CHAPTER 1: INTRODUCTION	
1.0 Introduction	1
1.1 Background	2
1.2 Problem Statement	3
1.3 Research Question	5
1.4 Objective	5
1.5 Project Scope	6
1.6 Project Significance	6
CHAPTER 2: LITERATURE REVIEW	
2.0 Introduction	8
2.1 Internal Examination Operation of FTMSK	9
2.2 Management Information System (MIS) Framework	11
2.3 Automated Timetabling System	16
2.4 Previous Work	21
2.5 Technology Considerations	22
2.6 Automated Timetabling System Contribution	29
2.7 Evaluation on Internal Examination System (IES)	30
2.8 Technology Acceptance Model	34
CHAPTER 3: APPROACH AND METHODOLOGY	
3.0 Introduction	36
3.1 System Design and Development Methodology	36
3.2 Planning and Analysis	37
3.3 Research and Data Collection	38
3.4 System Development Preparation	40
3.5 Designs and Development	45
3.6 System Testing	47
3.7 Delivering Prototype	49
CHAPTER 4: SYSTEM DESIGN	
4.0 Introduction	53
4.1 Recommended Hardware and software	53
4.2 System Architecture	54
4.3 System Design	55

4.4	SQL Query	67
4.5	Interface Design	72
CHAPTER 5: RESULT AND DISCUSSION		
5.0	Introduction	75
5.1	System Interface	75
5.2	Result and Discussion	98
5.3	Other Issue Concerned	105
CHAPTER 6: TESTING AND EVALUTION		
6.0	Introduction	110
6.1	The Manually Handled Examination Operation	110
6.2	The Internal Examination System(IES)	114
6.3	Comparison of the Manually Handled Examination Operation and Internal Examination System (IES)	122
6.4	The Measurement of Improvement Done by IES towards Manually Handled Examination Operation	140
CHAPTER 7: CONCLUSION AND RECOMMENDATION		
7.0	Introduction	143
7.1	Conclusion	143
7.2	Recommendation	144
BIBLIOGRAPHY		149
APPENDICES		155
Appendix A: Document Sample		
Appendix B: Evaluation Forms and Questionnaire		

ABSTRACT

Faculty of Information Technology and Quantitative Science implemented its internal examination according to specific processes governed by the requirements outlined by UiTM and the ISO guidelines. There are several critical situations whereby certain processes require accurate data from its previous processes. There are also some problems encountered in the current practice such as copy and paste method, no database, data redundancy and more. Thus this research will design and develop a web-base system to manage data as centralized management and producing efficient report for internal exam operation of FTMSK. The system is designed using Unified Modeling Language (UML) and prototyping is selected as the methodology. The system is developed using PHP programming language and it runs on apache web server. MySQL is used as its database server. The target of this project is to produce a prototype of an automated data manipulation and record management system for internal exam operation of FTMSK.

In order to prove that the computerized system improved the former practices of handling and managing examination operation, testing and evaluation has been carried out. In this case of evaluation, subject that is being evaluated is the FTMSK's Internal Examination System (IES). In this evaluation comparison between the IES and the manually handled exam operation are done. Diagram will be used to picture out the comparison of both system in term of its processes.