

**EVALUATION OF FUNCTIONALITY AND USABILITY FOR SMART
CARD ISSUANCE SYSTEM**

A Thesis submitted to the College of Arts and Sciences in full fulfillment of the
requirements for the degree of Master of Science (Information Technology)
Universiti Utara Malaysia

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ABSTRACT

One of the ways to evaluate a smart card issuance system's functional qualities and usability is by evaluating it based on measurements that have been defined for each criterion. A smart card issuance system is a system that will produce smart cards for the students in local universities. Although this system has been used widely in the local universities, there are a number of complaints from the users about the functionality and usability of the system. The functionality and usability of the smart card issuance system is one of the key features of its success. This study aims to evaluate this system on its functionality and usability. The measures for evaluating its functionality and usability are defined in this study. It is hoped that by conducting the research for evaluating this smart card issuance system, it will provide the solution and suggestion on ways and methods to enhance the quality of the system itself.

ABSTRAK

Salah satu kaedah untuk melakukan penilaian terhadap sistem pengeluaran kad pintar dari aspek fungsian dan kebolehgunaan adalah berdasarkan kriteria pengukuran yang ditentukan. Sistem pengeluaran kad pintar adalah sistem yang akan mengendalikan pengeluaran kad pintar kepada pelajar di semua universiti tempatan. Walaupun penggunaan sistem ini adalah telah meluas di universiti tempatan, namun masih terdapat beberapa pengguna yang masih tidak berpuas hati dengan fungsian dan kebolehgunaan sistem ini. Fungsian sistem dan kebolegunaan adalah ciri kejayaan pada sesebuah sistem. Kajian ini bertujuan untuk melihat fungsian dan kebolehgunaan untuk sistem pengeluaran kad. Kriteria pengukuran bagi penilaian terhadap fungsian dan kebolehgunaan sistem ini dibincangkan. Adalah diharapkan kajian yang dilakukan ke atas sistem pengeluaran kad, dapat memberikan penyelesaian dan cadangan terbaik dalam meningkatkan kualiti sistem berkenaan.

ACKNOWLEDGMENTS

Alhamdulillah... Praise to Allah for His guidance and blessing for giving me the strength to complete this study. I would like to thank to my supervisor Puan Norida Muhd Darus and Puan Fauziah Baharom for helping in completing this study and also to optimize the learning. They have provided many useful comments on early draft on this project and many useful suggestions throughout the progress of the project.

I also would like to offer my sincere gratitude to my beloved family for their constant support. Special thanks to Rhafizuan Rusli, Nor Shubaily bin Khamis, Farihan Ghazali and other friends has been supporting me directly and indirectly.

TABLE OF CONTENTS

	Page
PERMISSION TO USE	i
ABSTRACT	ii
ABSTRAK.....	iii
ACKNOWLEDGMENTS	iv
TABLE OF CONTENTS	v
TABLE OF FIGURES	vii
LIST OF TABLES	viii
CHAPTER ONE INTRODUCTION	1
1.1 Background of the study.....	1
1.2 Problem Statement	2
1.3 Research Question.....	3
1.4 Project’s Objective.....	3
1.5 Research Scope	3
1.6 Significance of the Research	4
1.7 Structure of Dissertation.....	4
CHAPTER TWO LITERATURE REVIEW.....	5
2.1 Introduction	5
2.2 Software Quality	5
2.3 ISO 9126.....	7
2.4 Smart Card Quality	9
2.5 Software Evaluation	11
2.6 Other research of system evaluation	14
CHAPTER THREE RESEARCH METHODOLOGY	15
3.1 Introduction	15
3.2 Identifying the requirements of smart card issuance system.....	16
3.3 Identifying the framework for evaluation	16
3.4 Developing support tools for evaluating the system	17
3.5 Evaluating the current system using the framework defined	17
3.6 Result Analysis	17
3.7 Proposing improvement for the current system.....	18
CHAPTER FOUR IDENTIFY REQUIREMENTS OF THE SMART CARD ISSUANCE SYSTEM.....	19
4.1 Introduction	19
4.2 Conduct Interview with the user to get user requirement	20
4.3 Use case diagram	21

CHAPTER FIVE CONSTRUCTING FRAMEWORK FOR FUNCTIONALITY AND USABILITY EVALUATION	23
5.1 Introduction	23
5.2 Identifying metric for functionality and usability evaluation.....	23
5.3 Measure for functionality and usability evaluation	26
CHAPTER SIX DEVELOPING SUPPORT TOOLS ON EVALUATION THE SYSTEM	37
6.1 Introduction	37
6.2 Requirements for support tool	37
6.3 Use Case Diagram for Support Tool.....	38
6.4 Activity Diagram for support tool.....	39
6.5 Data Dictionary of support tool	41
CHAPTER SEVEN FINDING RESULT	43
7.1 Introduction	43
7.2 Qualitative Evaluation Methods	43
7.3 Chart result for functionality and usability.....	53
7.4 Discussion of Results	56
7.5 Smart Card Issuance System Functionality Problem	56
7.5.1 Recommendation on functionality	57
7.5.2 Suitability.....	57
7.5.3 Accuracy	57
7.5.4 Interoperability.....	58
7.6 Smart Card Issuance System Usability Problem	59
7.6.1 Recommendation on usability	61
7.6.2 Understandability	61
7.6.3 Operability	61
7.6.4 Learnability.....	63
CHAPTER EIGHT CONCLUSION AND RECOMMENDATION.....	64
8.1 Introduction	64
8.2 Conclusion.....	64
8.3 Problem and Limitation.....	65
8.4 Recommendation for Future Work	65
REFERENCES	66
Appendix 1 Interview Questions – Requirements of the system.....	71
Appendix 2 Set of Question.....	72
Appendix 3 Set of Question on Functionality	78
Appendix 4 Set of Question on Usability.....	79

TABLE OF FIGURES

Figure 2.1:	ISO/IEC9126 Characteristics.....	8
Figure 2.2:	Curve showing relationship between problems found and number of users	13
Figure 3.1:	Input and output parameter for each phase in methodology	16
Figure 6.1:	Use case diagram for support tool	38
Figure 6.2:	Add New Question Activity Diagram	39
Figure 6.3:	Edit and Delete Question activity diagram.....	40
Figure 6.4:	Answer questions activity diagram	40
Figure 7.1:	Kiviat Chart For Functionality.....	54
Figure 7.2:	Kiviat Chart For Usability	55
Figure 7.3:	Example for help system from Adobe Acrobat	62

LIST OF TABLES

Table 2.1 :	Features for Smart Card System (Hendry, 2007)	9
Table 5.1:	Metric for functionality evaluation.	23
Table 5.2:	Comparison metric for usability evaluation.	24
Table 5.3:	The sub attributes and measure for evaluation	27
Table 6.1:	Data dictionary for MSTR_JAWAPAN table	41
Table 6.2:	Data dictionary for MSTR_SOALAN table.....	41
Table 6.3:	Data dictionary for MSTR_KATEGORI table.....	41
Table 6.4:	Data dictionary for MSTR_USERID table.....	42
Table 7.1:	Result for functionality on Smart Card Issuance System.....	44
Table 7.2:	The result for usability on Smart Card Issuance System	47
Table 7.3:	The functionality problem for smart card issuance system	56
Table 7.4:	The usability problem for smart card issuance system	59

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Smart card technology is being used in a majority of government institutions in Malaysia. It is being used in various applications such as door access control, student attendance, library system and bus ticketing system in many of the local universities in Malaysia. The integrated chip in the smart card provides the means of storing information and can be accessed using several interfaces and systems that are being used throughout the various facilities in these universities.

Considering the importance and sensitivities of the information being manipulated and accessed using these cards, it is exceptionally important for the organizations to ensure that the cards being issued contain correct and precise information. Therefore, the quality of the systems issuing these cards needs to be ensured and guaranteed so that the overall process of producing the cards and the later stage of manipulating the information in it will be smooth and error free.

To achieve this, a good evaluation process and method needs to be applied so that no important factor of the evaluation process is overlooked. The ISO/IEC 9126:2001 (Quality Model) provides one of the best guidelines for this purpose. It is part of the ISO 9126 which is an international standard for the evaluation of software quality. The standard is divided into four parts, which address, respectively - the quality model; external metrics; internal metrics; and the quality in use metrics.

The quality model is established in the first part of the standard for the evaluation of software quality, which is also the part mainly utilized in this research.

The contents of
the thesis is for
internal user
only

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