

BORANG PENGESAHAN STATUS TESIS[^]

JUDUL: SPM QUESTIONS CENTRALIZED SYSTEM WITH SMS ANNOUNCEMENT

SESI PENGAJIAN: 2006

Saya AMRAN BIN YUNUS

mengaku membenarkan tesis (PSM/Sarjana/Doktor Falsafah) ini disimpan di Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dengan syarat-syarat kegunaan seperti berikut:

1. Tesis dan projek adalah hakmilik Kolej Universiti Teknikal Kebangsaan Malaysia.
2. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan untuk tujuan pengajian sahaja.
3. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan tesis ini sebagai bahan pertukaran antara institusi pengajian tinggi.
4. ** Sila tandakan (/)

_____ SULIT

(Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub di dalam AKTA RAHSIA RASMI 1972)

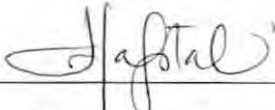
_____ TERHAD

(Mengandungi maklumat TERHAD yang telah ditentukan oleh organisasi/badan di mana penyelidikan dijalankan)

 / TIDAK TERHAD



(AMRAN B YUNUS)



(PN. NOR HAFEIZAH BT. HASSAN)

Alamat tetap : TB 19, KG. TOK BOK,

LABOK, 18500 MACHANG, KELANTAN

Tarikh : 23/11/2006 Tarikh : 23/11/2006

CATATAN: ** Jika tesis ini SULIT atau TERHAD, sila lampirkan surat daripada pihak berkuasa. ^ Tesis dimaksudkan sebagai Laporan Projek Sarjana Muda (PSM)

raf

TK6570.M6 .A47 2006



0000039082

SPM questions centralized system with sms announcement
/ Amran Yunus.

ii

SPM QUESTIONS CENTRALIZED SYSTEM WITH SMS ANNOUNCEMENT

AMRAN B. YUNUS

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

FACULTY OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA

2006

DECLARATION

I hereby declare that this project report entitled

SPM QUESTIONS CENTRALIZED SYSTEM WITH SMS ANNOUNCEMENT

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

STUDENT: 

(AMRAN B YUNUS)

Date: 23/11/2006

SUPERVISOR: 

(NOR HAEIZAH BT HASSAN)

Date: 23/11/2006

DEDICATION

To my God, Allah SWT

To my beloved parent, Saniah Bt Daud

To my supervisor, Pn Nor Hafeizah Bt. Hassan

ACKNOWLEDGEMENT

Alhamdulillah, praise to ALLAH s.w.t., I am very pleased and grateful of being able to finish my PSM. I'm taking this opportunity to give my gratitude to a couple of parties for their help. First and foremost, I would like to thanks my supervisor Pn Nor Hafeizah Bt Hassan, whose expertise, understanding, and patience, added considerably to my success of completing this PSM. I appreciate her vast knowledge and skills in many areas and her assistance in writing and completing this report. I would also like to thanks my friends in and outside from KUTKM for their exchanges of knowledge and skills while completing my PSM which helped enrich the experience. Although many people have contributed to this project and have helped to complete it, I take sole responsible for any errors. Wassalam.

Thanks you.

ABSTRACT

Project Sarjana Muda (PSM) is the opportunity for student to improve and implemented all their studies in degree with developing their own project related on the majoring course. In this project student will choose their own title of project and capacitate it by their own self. The project title that I choose is SPM Questions Centralized System with SMS Announcement. This system is to help the teachers to producing exam paper. This system will also bring a new concept in retrieving questions for exams. This web-based system will reduce the teacher's time in searching and archiving questions via web, not manually as in the current system.

ABSTRAK

Projek Sarjana Muda (PSM) merupakan satu peluang untuk pelajar melaksanakan dan memperbaiki segala pembelajaran mereka di peringkat ijazah sarjana dalam membangunkan projek yang berkaitan dengan pengkhususan bidang/jurusan yang diambil. Tajuk projek yang saya pilih ialah SPM Questions Centralized System with SMS Announcement . Sistem ini adalah untuk membantu guru-guru untuk menghasilkan soalan-soalan peperiksaan. System ini juga, merupakan satu kaedah baru untuk mendapatkan soalan untuk peperiksaan. Sistem yang berdasarkan web ini akan menjimatkan masa guru-guru untuk mencari dan mendapatkan soalan-soalan melalui web berbanding dengan sistem yang sedia ada kini.

TABLE OF CONTENTS

CHAPTER	SUBJECT	PAGE
	DECLARATION	iii
	DEDICATION	iv
	ACKNOWLEDGEMENTS	v
	ABSTRACT	vi
	ABSTRAK	vii
	TABLE OF CONTENT	viii
	LIST OF TABLES	xii
	LIST OF FIGURES	xiv
CHAPTER I	INTRODUCTION	1
	1.1 Project Background	1
	1.2 Problem Statements	2
	1.3 Objectives	3
	1.4 Scopes	3
	1.5 Project Significant	4
	1.6 Conclusion	5

CHAPTER II	LITERATURE REVIEW & PROJECT METHODOLOGY	
2.1	Introduction	6
2.2	Fact and Finding	7
	2.2.1 Current System Analysis	
	2.2.2 Case Study to review of Existing system	8
	2.2.3 Analysis and finding	10
2.3	Project Methodology	13
	2.3.1 OO Methodology	14
	2.3.1.1 OOAD Advantages	16
	2.3.2 Unified Model Language (UML)	16
	2.3.2.1 UML Advantages	18
2.4	High Level Project Requirement	19
	2.4.1 Software Requirement	19
	2.4.2 Hardware Requirement	20
	2.4.3 Other Requirement	20
2.5	Project Schedule and Milestone	20
	2.5.1 Gant Chart	21
2.6	Conclusion	21
CHAPTER 3	ANALYSIS	22
3.1	Introduction	23
3.2	Problem Analysis	24
	3.2.1 Background of current system	24
	3.2.2 Problem Statement	24
3.3	Requirement Analysis	25
	3.3.1 Functional Requirement	25
	3.3.1.1 Scope	25
	3.3.2 Business Flow	27
	3.3.3 Use Case View	29
	3.3.4 Actor	29
	3.3.5 Interaction Diagram	35

3.4	Software Requirements	39
3.5	Hardware Requirements	39
3.6	Network Requirements	39
3.7	Conclusion	40
CHAPTER IV	DESIGN	41
4.1	Introduction	41
4.2	High Level Design	42
4.2.1	Raw Data	42
4.2.2	High-Level Logical View / Architecture	42
4.2.2.1	Static Organization	44
4.2.2.2	High Level Class Diagram	45
4.2.3	User Interface Design	46
4.2.3.1	Navigation Design	49
4.2.3.2	Input Design	50
4.2.3.3	Output Design	52
4.2.4	Database Design	53
4.2.5	Deployment Design	54
4.3	Detail Design	55
4.3.1	Software Specification	55
4.3.2	Physical Database Design	63
4.4	Conclusion	66
CHAPTER V	IMPLEMENTATION	67
5.1	Introduction	67
5.2	Software Development Environment Setup	68
5.2.1	Software and Hardware Acquisition	68
5.3	Software Configuration Management	70
5.3.1	Configuration Environment Setup	70
5.3.1.1	Step to step the Configuration Environment	71

	5.3.2	Version Control Procedures	72
		5.3.2.1 Numbering of Product Version	72
	5.4	Implementation Status	73
	5.5	Conclusion	74
CHAPTER VI	TESTING		75
	6.1	Introduction	75
	6.2	Test Plan	75
		6.2.1 Test Organization	76
		6.2.2 Test Environment	76
		6.2.3 Test Schedule	77
	6.3	Test Strategy	78
		6.3.1 Classes of tests	78
	6.4	Test Design	80
		6.4.1 Test Description	80
		6.4.2 Test Data	83
	6.5	Test Result and Analysis	85
	6.6	Conclusion	87
CHAPTER VII	PROJECT CONCLUSION		88
	7.1	Introduction	88
	7.2	Strengths	88
	7.3	Weakness	89
	7.4	Propositions for Improvement	89
	7.5	Conclusion	89
REFERENCES			90
APPENDICES A			91
APPENDICES B			93

LIST OF TABLES

TABLE	TITLE	PAGE
2.1	Comparison between existing and proposed system	12
2.2	UML Diagrams Modeling Tools	16
2.3	Software Requirement	18
2.4	Hardware Requirement	19
2.5	Project Schedule and Milestones	20
4.1	Input Design for User Authentication Page	50
4.2	Input Design for Teacher Registration Page	50
4.3	Input Design for Add Question Page	51
4.4	Display Question (Manually)	51
4.5	Input Design for Assessment Student	51
4.6	Specification for Registration Menu	56
4.7	Specification for Login Menu	57
4.8	Specification for Categories Questions Menu	58
4.9	Specification for Upload Questions Menu	59
4.10	Specification for Search Questions Menu	60
4.11	Specification for Student Grading and Assessment Menu	61
4.12	Specification for SMS Announcement Menu	62
4.13	Data Dictionary (Entity Description)	63
4.14	Data Dictionary for SPM Questions Centralized System	64
4.15	Data Dictionary for SPM Questions Centralized System (Cont.)	65
5.1	Software and Hardware Acquisition	68

5.2	Datasets Used for Version Library	70
5.3	Questions Centralized System Implementation Status	73
6.1	Environment setting for testing phases	77
6.2	Test Scheduled Summary	78
6.3	Login Module	80
6.4	Registration Module	81
6.5	SMS Status Module	82
6.6	Grading Student Module	82
6.7	Edit Teacher Profile Module	83
6.8	Entering New Teacher	83
6.9	Entering Question	84
6.10	Entering Grading Student	84
6.11	Test Data for SMS Status	84
6.12	Test Case Result for Registration Module	85
6.13	Test Case Result for Objective and Structure Question Module	85
6.14	Test Case Result for Grading Student Module	86
6.15	Test Case Result for SMS Announcement Module	86

LIST OF FIGURES

FIGURE	TITLE	PAGE
2.1	Main Menu Bestari website.	8
2.2	List of the Questions Bank menu.	9
3.1	Flow Chart for current system	24
3.2	Overview of SPM Question Centralized System	27
3.3	Overview of Flow Chart SPM Questions Centralized System with SMS Announcement.	28
3.4	Global view of use case model	29
3.5	Interaction diagram for authentication user (basic flow)	35
3.6	Interaction diagram for manage sms by teachers basic flow)	35
3.7	Interaction diagram for user registration (basic flow)	36
3.8	Interaction diagram for grading and assessment student (basic flow)	37
3.9	Interaction diagram for manages question categories (basic flow)	38
4.1	System software architecture overview based on 3-tier architecture	43
4.2	The SPM Question Centralized Sys. Packages	44
4.3	Class Diagram for overview system	45
4.4	Login menu interface	46
4.5	Register menu interface	45
4.6	Main Menu interface	47
4.7	Add Question Interface	47
4.8	Searching Manually will be display	48
4.9	Grading Student Interface	48
4.10	Send SMS Interface	48

4.11	Overview of Navigation Design of the System	49
4.12	Output Design for Question Selected	52
4.13	Output Design for SMS Report	52
4.14	Entity Relationship Diagram (ERD)	53
4.15	Deployment View of the System	54
5.1	Software Development Environments	69

CHAPTER 1

INTRODUCTION

1.1 Project Background

Information and Communication Technology (ICT) brings a new technology to change and ease the management for get the information that will more systematic and efficient. Because of that, a computerized system that will be The SPM Questions Centralized System with SMS (Short Messaging System) Announcement has been proposed to be developed and implemented for management team in school especially at SMK Ayer Keroh. The target for this system is to help the teachers to producing questions.

This system will be fully computerized and also apply a new communication technology SMS. When the system detects a new question added, the system will automatically generate a message that will be sending to the hand phone via SMS.

The Question Centralized System that is web-based to helping teachers share their question with other teachers. The paper-based system, which is used in current system, is bringing various problems such as slow questions searching and archiving, require a space for record saving and also reducing the teacher's time to do other important things. By using the Question Centralized System, all the problems can be solved in a simple yet effective ways. In addition, the system also will help the teachers by giving the flexibility to add, modify and also delete certain questions that are not valid anymore.

1.2 Problem Statements

Mostly, in school management are using less computerized system and still use a manual system in their paper exams management. This system is mainly to help teachers to organize their questions for exams and practice.

The problems that bring to the developing of the Question Centralized System with SMS (Short Messaging System) Announcement are as stated below:

As we all know, the use of a paper-based question will require a big area for filing the question papers. This means that there will be a vast of wasted area. Each of the questions must be printed before can be used as a source to develop new question paper. An unsystematic usage of area will bring up a non-harmony environment in the teacher's room.

The usage of paper-based in the current system will surely bring up the risk of losing the questions papers. A paper-based system that is ineffective will automatically increase the risk of losing the important question even to the student's hands.

1.3 Objectives

This project is carried out with the following objectives. There are five fundamental objectives of this project:

1. Reducing the time for teachers to archive monthly exercise questions.
2. Providing an integrated system which brings up a new concept in archiving questions via Local Area Network (LAN) system.
3. Providing a user-friendly system to help teachers in providing the questions for exams and practices easily.
4. Reducing the risk of losing the questions.

1.4 Scopes

The scopes of this project are:

1. **User Registration System**
The Question Centralized System has a user registration system that is uniquely for Question Centralized System only. This system will provide levels of security to enter the system. After teachers have registered, there will have an ID and password
2. **Questions Categorizations**
Various category of question is build so that will help teachers to retrieve the questions easily. The categories are divided into 8 subjects. There are Malaysian Language, English Language, Mathematic, History, Physics, Chemistry, Biology, and Add Mathematic. Teachers can upload, download, update, delete and add new questions in this system based on SPM subject has taken at SMK Ayer Keroh, Melaka.
3. **Grading and Assessment Student**
This system is able to generate grade automatically within a lesser time. This system works by the teacher will key in the students mark into the system and automatically, the system will show he/her result of grade for the students.
4. **SMS Announcement**
This system will be integrated via the mobile phone. The information will be announced when users key in data in this system. In other words, teacher can be retrieved messages when the system detects a question was updated that will be send to the hand phone via SMS.

1.5 Project significant

Each system that is build is based on their functionality that the user need. In this context, the system that is build will be fulfilling certain functions that will help teachers in many ways. This system will bring a new concept in retrieving questions for exams and practice. This web-based system will reduce the teacher's time in searching and archiving questions via web, not manually as in the current system.

Each question will be categorized based on several levels. This categorization will help teachers to search questions that are needed without knowing much about the question itself. In other words, teachers can search questions just from a scratch. In addition, teachers don't need anymore to classify the questions by themselves since the system will automatically classify the question.

This significant project also is important for teachers. This is because the system will solve the entire problem that arise from the current system to a more efficient and systematic web-based system. Teachers should be provided with an integrated question centralized to help them search and archive questions faster and user-friendly for the teachers.

1.6 Conclusion

As a conclusion, when the new system is fully implemented it will definitely help the teachers to centralized all the questions and this system come out with new approaches such as SMS application.

The new system will as well provide teachers with automatic searching engine to search the questions needed. Each question will be categorized so that teachers will have an easy time searching the system. In addition, teachers will also been granted with flexibility to add and also modify question for other teachers usage. The question added can be automatically categorized or also the teachers can categories by themselves.

After this, the next chapter that will be provided is Literature Review and Project Methodology. This part will review the previous project and make a comparison with project that has been proposed. Besides that, this chapter also explains about the methodology that will be used in this project.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

In this chapter 2, it will be focuses on literature review and project methodology. The literature review is focused on the research of the current system and the new system that will be developed. The purpose of a literature review is to convey the reader about the knowledge and also can established the ideas have been on a topic and what are the strengths and weaknesses.

This section is started by fact and finding. It will discuss and review about approach and related research, reference about this system. Besides that, it also states other approaches that will be used in this project after comparison with previous approaches. In project methodology section, selected approach or methodology will be described the activities that may do in every stage. All the requirements in this system will be explained in high level project requirements and followed with project schedule and milestones.

2.2 Fact and Finding

Management team in school is using less computerized system in their management. The idea to develop this system come after some research has been made about school management. From interview, mostly in school management still used a manual system to manage all the process flow. Now, for exam questions will be change from a manual system to computerized system.

After do an interview at Sekolah Menengah Kebangsaan Ayer Keroh, all the info that achieves is prove that no computerized system they use in their management. All the process is done a manually and not systematic.

2.2.1 Current System Analysis

Usually, building up those questions will take a very long time and effort because each of the questions that chosen must be filtered based on the students mentality level and also the level of difficulty for the questions and etc

From an interview with two teachers at SMK Ayer Keroh, they have explained all stages involved to building the questions for exam monthly. The first stage, find the all the past year exam and compare with each syllabus. The secondly each of the questions that chosen must be filtered based on the students mentality level and also the level of difficulty for the questions.

“Biasanya untuk peperiksaan awal tahun, pertengahan tahun dan akhir tahun saya akan rujuk pada buku soalan yang terdapat di pasaran. Sekiranya terdapat soalan yang telah saya ajarkan maka ianya memberi idea kepada saya untuk dimuatkan di dalam peperiksaan bulanan di sekolah ini.”. Cikgu Norma.

“ Soalan saya berdasarkan kepada sukatan pelajaran yang telah saya ajar di dalam kelas. Dengan cara ini tahap dan pencapaian pelajar saya dapat dinilai.”
Cikgu Azalina.

The quote from two teachers above proved that the question building is still done manually rather than having a proper system that can help reducing the workload of the teachers. The current system requires teachers to find the question themselves.

2.2.2 Case Study to review of Existing system

Case Study 1: www.tutor.com.my

For this study, the researches are based on the contribution and outcomes from previous study. This web based is developed by utusan education portal that offers such as e-tuition, questions bank, teacher room, interactive, community and map site.

Pendidikan www.bestari.com.my
BESTARI Utusan

LAMAN UTAMA E.TUISYEN BANK SOALAN BILIK GURU INTER@KTIF KOMUNITI PETA LAMAN

BANK SOALAN



Bank Soalans
 UPSR
 PMR
 SPM
 STPM

BANK SOALAN		Peperiksaan	Topik	Format
1.	Set 1	UPSR	Bahasa Melayu	Kertas 1 Format P
		PMR	Bahasa Melayu	Jawapan Format H
		SPM	Bahasa Melayu	Kertas 2 Format P
		STPM	Bahasa Inggeris	Jawapan Format H
2.	Set 2 (12/0/2005)		Matematik	Kertas 1 Format P
			Matematik Tambahan	Jawapan Format H
			Sains	Kertas 1 Format P
			Fizik	Jawapan Format H
		Kimia	Kertas 2 Format P	
		Biologi	Jawapan Format H	
		Sejarah		

Figure 2.1 Main Menu Bestari website.

Peperiksaan Percubaan Portal 2004			
1.	Set 1 (14/9/2004)	Kertas 1	Format PDF
		Jawapan	Format HTML
		Kertas 2	Format PDF
		Jawapan	Format PDF
2.	Set 2 (28/9/2004)	Kertas 1	Format PDF
		Jawapan	Format HTML
		Kertas 2	Format PDF
		Jawapan	Format PDF

Peperiksaan Percubaan Portal 2003			
1.	Set 1 (15/9/2003)	Kertas 1	Format PDF
		Jawapan	Format HTML
		Kertas 2	Format PDF
		Jawapan	Format HTML
2.	Set 2 (26/9/2003)	Kertas 1	Format PDF
		Jawapan	Format HTML
		Kertas 2	Format PDF
		Jawapan	Format HTML

Peperiksaan Percubaan Portal 2001			
1.	Kertas Model Set 1	Kertas 1	Format PDF
		Kertas 2	Format PDF
2.	Kertas Model Set 2	Kertas 1	Format PDF
		Kertas 2	Format PDF

Kertas Model Sumbangan Pengunjung Portal			
1.	Jabatan Pendidikan Pahang, 2000	Kertas 1	Format PDF
		Kertas 2	Format PDF
2.	Sekolah Alam Shah, Bandar Tun Razak, 56000 Kuala Lumpur, 2001	Kertas 2	Format PDF
3.	Sekolah-sekolah Berasrama Penuh Zon Selatan, 2001	Kertas 1	Format PDF
		Kertas 2	Format PDF
4.	Bahagian Pendidikan Menengah Rendah, Peperiksaan Percubaan SPM-MRSM 2002	Kertas 1	Format PDF
		Kertas 2	Format PDF



Perhatian:

Bahan di bahagian ini adalah dalam bentuk PDF. Jika komputer anda belum dilengkapi dengan perisian Adobe Acrobat Reader, sila muat turun secara percuma melalui laman web [Adobe](#). Sebahagian daripada soalan peperiksaan

Figure 2.2 List of the Questions Bank menu.