raf

Venue and equipments online booking system / Elizabeth Lee Cheah Hui.

VENUE AND EQUIPMENTS ONLINE BOOKING SYSTEM

ELIZABETH LEE CHEAH HUI

The report is submitted in partial fulfillment of the requirements for the **Bachelor of Computer Science (Database Management)**

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA 2006

DECLARATION

I hereby declare that this project report entitled VENUE AND EQUIPMENTS ONLINE BOOKING SYSTEM

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

_ Date : <u>14 Novemb</u>er 2006 I)
_ Date : <u>14 November</u> 2006 **STUDENT SUPERVISOR** (CIK NOR MAS AINA MD BOHARI)

DEDICATION

To God who gave me the wisdom and strength to complete this journey.

To my beloved parents and sister whose support, prayer and encouragement fuel my hope and perseverance during the difficult moments of this project.

ACKNOWLEDEGEMENTS

The completion of the final year project would not be a success without the help and contribution of many people. Therefore, I would like to take this opportunity to appreciate and acknowledge each of them.

Firstly, I would like to thank Miss Nor Mas Aina Md Bohari who has offered many assistance and advice during the duration of this project. Without her guidance, this project would not have been completed successfully. In addition to that, I would also like to thank the lecturers from the Faculty of Information and Communication Technology (FTMK) and Kolej Universiti Teknikal Kebangsaan Malaysia (KUTKM) who have imparted the knowledge and skills I needed to complete my final year project.

Besides that, I would also like to express my appreciation to the manager of YES, Mr. Lee Kok Yin who offered me the opportunity to develop an online venue and equipments booking system for YES headquarters. Many thanks also to the receptionist at YES, Miss Anne who patiently explained the process involved in venue and equipments booking.

This project would also not be successful if not for the support, encouragement and prayers of my beloved family and friends. I thank them for the patience and understanding during the hectic moments of the project.

Last but not the least, my deepest gratitude goes to God who first set me on this journey of being a computer science student in KUTKM and who have seen me through the many challenges in my studies by blessing me with perseverance, wisdom and strength.

ABSTRAK

Sistem pengurusan kemudahan yang bersistematik adalah penting untuk memastikan tempat perjumpaan dan peralatan bagi suatu premis dikendalikan dan ditadbir dengan baik. Perkhidmatan Kemajuan Belia (YES) adalah sebuah organisasi kebajikan dan bukan kerajaan yang mempunyai matlamat untuk membangunkan belia yang berakhlak, jujur dan tulus melalui perlaksanaan akitiviti yang bermanfaat di premis YES. Pada masa sekarang, YES menggunakan sistem manual untuk mencatat penempahan tempat perjumpaan dan peralatan. Sistem manual ini membawa banyak masalah kepada pentadbir YES seperti pengurusan data yang kurang cekap dan penggulangan kebanyakan proses. Oleh itu, melalui laporan ini, satu sistem penempahan tempat perjumpaan dan peralatan secara atas-talian (VEOBS) dikemukakan untuk menggantikan sistem catatan manual. VEOBS akan memberi automasi dari segi notifikasi secare emel, pemeriksaan status penggunaan tempat perjumpaan dan peralatan. Matlamat VEOBS adalah untuk memberi kemudahan kepada penyambut tetamu di YES dari segi penempahan tempat perjumpaan dan peralatan di samping mempertingkatkan komunikasi antara penyambut tetamu. pengurus dan ahli YES. Selain itu, VEOBS juga memberi kemudahan kepada pentadbir pangkalan data di YES untuk menghapuskan data lama, mengimport data ke dalam pangkalan data dan mengeksport data dari pangkalan data ke Excel. VEOBS akan dibangunkan dengan menggunakan PHP, HTML dan Javascript. MySQL pula dijadikan pilihan bagi pangkalan data untuk VEOBS. Bagi pembangunan projek, metodologi Pembangunan Aplikasi Secara Cepat (RAD) digunakan manakala lanagkah-langkah dalam Kitar Hayat Pembangunan Pangkalan Data (DBLC) diikuti untuk pembangunan pangkalan data. Hasil projek ini adalah sebuah sistem penempahan tempat perjumpaan dan peralatan secara atas-talian.

ABSTRACT

A proper facility management system is important as it helps ensure good stewardship and administration of the use of venues and equipments within a premise. Youth Excel Services (YES) is a non-government and non-profit organization that seeks to build youth with integrity by allowing usage of their premise for healthy activities. Currently, YES uses a manual recording system for venue and equipments booking. This system, unfortunately poses a lot of problems for the management of YES such as improper data management, duplication of processes and no data privacy. Therefore, in this report an online booking system - Venue and Equipments Online Booking System (VEOBS) is presented to replace the manual system. VEOBS will provide automation in aspects such as email notification, availability checking of venue and tracking of equipments. The goal of VEOBS is to bring about greater ease of work for the receptionist at YES in terms of venue and equipments booking as well as to enhance the communication among the receptionist, manager and YES member. In addition to that, VEOBS too allow an in-house database administrator to purge old records, import data into database and export data from database to Excel. VEOBS will be developed using PHP, HTML and Javascript with MySQL as the database. The methodology used for the project is Rapid Application Development (RAD) while steps in Database Life Cycle (DBLC) are followed for database development. The final output for this project is an online venue and equipments booking system.

TABLE OF CONTENTS

CHAPTER	SUBJECT	PAGE
	TITLE PAGE	i
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENTS	iv
	ABSTRAK	v
	ABSTRACT	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xi
	LIST OF FIGURES	xviii
	LIST OF ABBREVIATIONS	xxiii
	LIST OF APPENDICES	xxv
CHAPTER I	INTRODUCTION	1
	1.1 Project Background	1
	1.2 Problem Statement	2
	1.3 Objective	3
	1.4 Scopes	5
	1.5 Project Significance	12
	1.6 Expected Output	12
	1.7 Conclusion	13

CHAPTER II	LI	ΓERAT	TURE REVIEW AND	15
	PR	OJEC'	T METHODOLOGY	
	2.1	Introd	luction	15
	2.2	Fact a	and Finding	16
		2.2.1	Case Study 1: Web-Based System	
			for Communication and Scheduling	16
		2.2.2	Case Study 2: Online Facility and	
			Open Space Booking System of	
			NUS	20
		2.2.3	Case Study 3: Web Booking and	
			Hotel Management System	22
		2.2.4	Case Study 4 : A Meeting	
			Scheduling System, GRACE	24
		2.2.5	Approach to Web Application:	
			Asynchronous JavaScript and	
			Extensible Markup Language	28
		2.2.6	Conclusions of Facts and Findings	31
	2.3	Projec	et Methodology	33
		2.3.1	Rapid Application	
			Development (RAD)	33
		2.3.2	Dynamic Systems Development	
			Method (DSDM)	34
	2.4	Projec	ets Requirements	37
		2.4.1	Software Requirement	37
		2.4.2	Hardware Requirement	38
	2.5	Projec	et Schedule and Milestones	39
	2.6	Concl	usions	41
CHAPTER III	AN	ALYSI	S	43
	3.1	Introd	luction	43
	3.2	Analy	sis of Current System	43
		3.2.1	Flow of Current System	44
		3.2.2	Problem Analysis of Current	
			System	47

	3.3	Analy	sis of To-Be System	49
		3.3.1	Functional Requirements	49
		3.3.2	Data Requirements	53
		3.3.3	Technical Requirements	57
	3.4	Concl	usion	59
CHAPTER IV	DE	SIGN		60
	4.1	Introd	uction	60
	4.2	High-	Level Design	60
		4.2.1	System Architecture	61
		4.2.2	User Interface Design	68
			4.2.2.1 Navigation Design	68
			4.2.2.2 Input Design	68
			4.2.2.3 Output Design	77
		4.2.3	Conceptual and Logical Database Design	81
			4.2.3.1 Conceptual Database Design	81
			4.2.3.2 Logical Database Design	83
			4.2.3.3 DBMS Selection	85
	4.3	Detail	ed Design	86
		4.3.1	Software Specification	86
		4.3.2	Physical Database Design	86
	4.4	Concl	usion	89
CHAPTER V	IMI	PLEMI	ENTATION	91
	5.1	Introd	uction	91
	5.2	Softwa	are Development Environment	91
		5.2.1	Software Setup	92
		5.2.2	Hardware Setup	93
	5.3	Databa	ase Implementation	94
	5.4	Softwa	are Configuration Management	99
		5.4.1	Configuration Environment Setup	99
		5.4.2	Version Control Procedure	99
	5.5	Impler	mentation Status	100
	5.6	Conclu	usion	101

CHAPTER VI	TESTING	3	102
	6.1 Introd	uction	102
	6.2 Test F	Plan	102
	6.2.1	Test Organization	103
	6.2.2	Test Environment	103
	6.2.3	Test Schedule	104
	6.3 Test S	trategy	106
	6.3.1	Classes of Test	106
	6.4 Test I	Design	108
	6.4.1	Test Description	108
	6.4.2	Test Data	110
	6.5 Test R	Result and Analysis	114
	6.6 Concl	usion	115
CHAPTER VII	PROJEC	T CONCLUSION	116
	7.1 Obser	vation of Weaknesses and Strength	116
	7.1.1	Weaknesses	116
	7.1.2	Strength	117
	7.2 Propos	sitions for Improvements	117
	7.3 Conclu	usion	118
	REFEREN	ICES	119
	BIBLIOG	RAPHY	121
	APPENDI	CES	122

LIST OF TABLES

TABLE	TITLE	PAGE
2.1	Features Usable in VEOBS according to Case	
	Studies	31
2.2	Software Requirements	38
2.3	Hardware Requirements	38
2.4	Project Milestones	40
3.1	Software Requirements	57
3.2	Hardware Requirements	58
4.1	Tools and Validation Rules for Login Page	69
4.2	Tools and Validation Rules for Registration	
	Page	70
4.3	Tools and Validations Rules for Venue	
	Maintenance Page and Add New Location Page	73
4.4	Tools and Validation Rules for Equipments	
	Maintenance Page and Add New Equipment	
	Type Page	75
4.5	Tools and Validation Rules for Add	
	New Booking Requests Page	77
5.1	Hardware Setup	93
6.1	Test Organization	103
6.2	Test Environment 1	103
6.3	Test Environment 2	104
6.4	Test Schedule	104
6.5	Test Case for Component Login	108
6.6	Test Case for Component Registration	109

6.7	Test Data for Component Login	110
6.8	Test Data for Component Registration	111
6.9	Test Data for Component Changing Password	
	of Receptionist Module	113
6.10	Test Data for Component Member Search	
	of Receptionist Module	113
6.11	Test Result for Component Login	114
6.12	Test Result for Component Registration	115
C.1	'Authenticate User' Use Case Description	132
C.2	'Register' Use Case Description	133
C.3	'Add Booking Request' Use Case	
	Description	134
C.4	'Modify Booking Request' Use Case	
	Description	136
C.5	'Check Booking Status' Use Case	
	Description	137
C.6	'View Booking Calendar' Use Case	
	Description	138
C.7	'Mange Member' Use Case Description	139
C.8	'Manage Booking' Use Case Description	140
C.9	'Generate Report' Use Case Description	142
C.10	'Maintain Equipments' Use Case	
	Description	143
C.11	'Maintain Venue' Use Case Description	144
C.12	'Maintain YES Event Calendar' Use	
	Case Description	146
C.13	'Approve Booking' Use Case Description	148
C.14	'Purge Records' Use Case Description	149
C.15	'Import Data' Use Case Description	150
C.16	'Export Data' Use Case Description	151
F.1	Data Dictionary for USER	166
F.2	Data Dictionary for BOOKINGEVENT	168
F.3	Data Dictionary for BOOKEQUIP	170
F.4	Data Dictionary for EQUIPMENT	171

F.5	Data Dictionary for TYPE	172
F.6	Data Dictionary for VENUE	173
F.7	Data Dictionary for LOCATION	174
J.1	Welcome Page of Receptionist Module	202
J.2	Inventory List Page of Receptionist Module	202
J.3	Overdue List Page of Receptionist Module	202
J.4	Approved Booking Page of Receptionist Module	203
J.5	Disapproved Booking Page of	
	Receptionist Module	203
J.6	Pending Booking Page of Receptionist Module	203
J.7	Profile Page of Receptionist Module	204
J.8	Calendar Page of Receptionist Module	204
J.9	Daily Schedule Page of Receptionist Module	204
J.10	Booking Details Page of Receptionist Module	205
J.11	New Member Registration Listing Page of	
	Receptionist Module	205
J.12	Member Listing Page of Receptionist Module	205
J.13	Member Details Page of Receptionist Module	206
J.14	Search Member Page of Receptionist Module	206
J.15	Welcome Page of Manager Module	206
J.16	Profile Page of Manager Module	207
J.17	Pending Booking List Page of Manager Module	207
J.18	Inventory List Page of Manager Module	207
J.19	Overdue List Page of Manager Module	208
J.20	Approved Booking Page of Manager Module	208
J.21	Disapproved Booking Page of Manager Module	208
J.22	Pending Booking Page of Manager Module	209
J.23	Member Listing Page of Manager Module	209
J.24	Member Details Page of Manager Module	209
J.25	Calendar Page of Manager Module	210
J.26	Daily Schedule Page of Manager Module	210
J.27	Booking Details Page of Manager Module	210
J.28	Add New Booking Request Page of	
	Manager Module	211

J.29	Edit Booking Request Page of Manager Module	211
J.30	Delete Booking Request Component of	
	Manager Module	211
J.31	Equipment and Type Page of Manager Module	212
J.32	Venue and Location Page of Manager Module	212
J.33	Search Member Page of Manager Module	212
J.34	Welcome Page of Member Module	213
J.35	Profile Page of Member Module	213
J.36	Overdue Booking Page of Member Module	213
J.37	Approved Booking Page of Member Module	214
J.38	Disapproved Booking Page of Member Module	214
J.39	Pending Booking Page of Member Module	214
J.40	Calendar Page of Member Module	215
J.41	Daily Schedule Page of Member Module	215
J.42	Booking Details Page of Member Module	215
J.43	Add New Booking Request Page of	
	Member Module	216
J.44	Edit Booking Request Page of Member Module	216
J.45	Delete Booking Request Component of	
	Member Module	216
J.46	Welcome Page of Database Admin Module	217
J.47	Profile Page of Database Admin Module	217
J.48	Purge Records Page of Database Admin Module	217
J.49	Export Records Page of Database Admin Module	218
J.50	Login Page	218
J.51	YES New Member Registration Page	218
K.1	Test Case for Component Changing Password	
	of Receptionist Module	220
K.2	Test Case for Component Member Search	
	of Receptionist Module	220
K.3	Test Case for Component Changing Password	
	of Manager Module	222
K.4	Test Case for Component Member Search	
	of Manager Module	223

K.5	lest Case for Component Adding / Editing	
	Booking of Manager Module	224
K.6	Test Case for Component Adding Equipment	
	of Manager Module	225
K.7	Test Case for Component Editing Equipment	
	of Manager Module	226
K.8	Test Case for Component Adding Type	
	of Manager Module	226
K.9	Test Case for Component Editing Type	
	of Manager Module	227
K.10	Test Case for Component Adding Venue	
	of Manager Module	227
K.11	Test Case for Component Editing Venue	
	of Manager Module	228
K.12	Test Case for Component Adding Location	
	of Manager Module	228
K.13	Test Case for Component Editing Location	
	of Manager Module	229
K.14	Test Case for Component Changing Password	
	of Member Module	229
K.15	Test Case for Component Adding / Editing	
	Booking of Member Module	230
L.1	Test Data for Component Changing Password	
	of Manager Module	233
L.2	Test Data for Component Member Search	
	of Manager Module	233
L.3	Test Data for Component Adding / Editing	
	Booking of Manager Module	234
L.4	Test Data for Component Adding Equipment	
	of Manager Module	235
L.5	Test Data for Component Editing Equipment	
	of Manager Module	235
L.6	Test Data for Component Adding Type	
	of Manager Module	236

L.7	Test Data for Component Editing Type	
	of Manager Module	236
L.8	Test Data for Component Adding Venue	
	of Manager Module	236
L.9	Test Data for Component Editing Venue	
	of Manager Module	237
L.10	Test Data for Component Adding Location	
	of Manager Module	237
L.11	Test Data for Component Editing Location	
	of Manager Module	237
L.12	Test Data for Component Changing Password	
	of Member Module	238
L.13	Test Data for Component Adding / Editing	
	Booking of Member Module	238
M.1	Test Result for Component Changing Password	
	of Receptionist Module	241
M.2	Test Result for Component Member Search	
	of Receptionist Module	241
M.3	Test Result for Component Changing Password	
	of Manager Module	241
M.4	Test Result for Component Member Search	
	of Manager Module	242
M.5	Test Result for Component Adding / Editing	
	Booking of Manager Module	242
M.6	Test Result for Component Adding Equipment	
	of Manager Module	243
M.7	Test Result for Component Editing Equipment	
	of Manager Module	243
M.8	Test Result for Component Adding Type	
	of Manager Module	243
M.9	Test Result for Component Editing Type	
	of Manager Module	243
M.10	Test Result for Component Adding Venue	
	of Manager Module	244

M.11	Test Result for Component Editing Venue	
	of Manager Module	244
M.12	Test Result for Component Adding Location	
	of Manager Module	244
M.13	Test Result for Component Editing Location	
	of Manager Module	244
M.14	Test Result for Component Changing Password	
	of Member Module	245
M.15	Test Result for Component Adding / Editing	
	Booking of Manager Module	245

LIST OF FIGURES

FIGURE	TITLE	PAGE
1.1	Modules in VEOBS	6
2.1	'Look at Today' Web Interface	18
2.2	A Day View of Calendar Web Interface	19
2.3	'New Booking' Online Form	20
2.4	Verification Slip for Facility Booking	21
2.5	Booking of Venue Displayed in Calendar Format	22
2.6	Modal of System Features of HotMot	23
2.7	'Meeting and Activities' Window	25
2.8	'Week Planner' Window	26
2.9	Window for Stating Preference	26
2.10	Window for Proposing a Meeting	27
2.11	Comparison between Traditional Web	
	Applications and AJAX Applications	29
3.1	Use Case Diagram of VERMS	44
3.2	Activity Diagram for 'Request Booking'	45
3.3	ERD of VERMS	46
3.4	Use Case Diagram of VEOBS	49
4.1	System Architecture of VEOBS	61
4.2	Layering Architecture for VEOBS	62
4.3	Sequence Diagram for Use Case 'Add Booking	
	Request'	65
4.4	Sequence Diagram for Use Case 'View	
	Booking Calendar'	66
4.5	Class Diagram for VEOBS	67

4.6	Input Design for Login Page	69
4.7	Input Design for Registration Page	70
4.8	Input Design for Venue Details Page	72
4.9	Input Design for Add New Location Page	72
4.10	Input Design for Equipments Details Page	74
4.11	Input Design for Add New Equipment Type	
	Page	74
4.12	Input Design for Add New Booking Request	
	Page	76
4.13	Output Design for Booking Calendar Page	78
4.14	Output Design for Sample Textual Report	79
4.15	Output Design for Sample Graphical Report	80
4.16	Output Design for Sample Error Message	80
4.17	Entity Relationship Diagram for VEOBS	81
5.1	System Architecture of VEOBS	92
5.2	Sample Output for Query that Displays	
	Bookings with Overdue Items	95
5.3	Sample Output for Query that Joins Three (3)	
	Tables to Display Information in Email	96
5.4	Sample Output for Query that Displays the	
	Next Booking Date for Equipment	97
5.5	Sample Output for Query that Displays	
	Limited Member Record	97
5.6	Sample Output for Query that Displays	
	Approved Bookings that does not have Overdue	
	Equipments	99
5.7	Tracking of Source Code Version by Window	100
B.1	Activity Diagram for 'Check Booking Status'	126
B.2	Activity Diagram for 'Approve Booking'	127
B.3	Activity Diagram for 'Record Collection'	128
B.4	Activity Diagram for 'Remind to Return	
	Equipments'	129
B.5	Activity Diagram for 'Record Return of	
	Equipments'	130

D.1	Activity Flow of Member Module	154
D.2	Activity Flow of Receptionist Module	155
D.3	Activity Flow of Manager Module	156
D.4	Activity Flow for 'Maintain Equipment' of	
	Manager Module	157
D.5	Activity Flow for 'Maintain Venue' of	
	Manager Module	158
D.6	Activity Flow of Database Admin Module	159
E.1	Navigation Design of Receptionist Module	161
E.2	Navigation Design of Manager Module	162
E.3	Navigation Design of Database Admin Module	163
E.4	Navigation Design of Member Module	164
I.1	Server Information Page of Apache	
	Installation Wizard	190
I.2	Setup Type Page of Apache Installation	
	Wizard	191
I.3	Destination Folder Page of Apache	
	Installation Wizard	191
I.4	Changing Listener at Apache HTTPD	
	Configuration File	192
I.5	Configuring the Document Root at	
	Apache HTTPD Configuration File	192
I.6	Configuring the Directory to the Document	
	Root at Apache HTTPD Configuration File	193
I.7	Configuring Apache to Run PHP Step 1	193
I.8	Configuring Apache to Run PHP Step 2	194
I.9	Configuring php.ini File Step 1	195
I.10	Configuring php.ini File Step 2	195
I.11	Configuring Debug Node for Editor Preferences	196
I.12	Configuring Browser Node for Editor Preferences	197
I.13	Choosing the Setup Type for MySQL Server 5.0	
	Installation	198
I.14	Review of the Installation Settings for	
	MySQL Server 5.0	198

I.15	Configuring Security Options of	
	MySQL Server 5.0	199
I.16	Execution of the MySQL Server Instance	
	Configuration	200
N.1	Login Page	247
N.2	Registration Page	248
N.3	Receptionist Welcome Page	249
N.4	New Member Registration Listing Page	250
N.5	Selected Registration Details Page	250
N.6	Overdue List Page	251
N.7	Booking Details Page	252
N.8	Member Listing Page	253
N.9	Approved Member Details Page	253
N.10	Approved Booking List of Selected Member	254
N.11	Inventory List Page	254
N.12	Change Password Page	255
N.13	Booking Calendar Page of Receptionist Module	256
N.14	Daily Schedule Page of Receptionist Module	257
N.15	Member Menu Selection Expanded	258
N.16	Search Member Page (Using Combo Box)	258
N.17	Search Result	259
N.18	Search Member Page (Using Textbox)	260
N.19	Manager Welcome Page	261
N.20	Pending Booking List Page	262
N.21	Booking Details Page	263
N.22	Booking Calendar Page of Manager Module	264
N.23	Daily Schedule Page of Manager Module	265
N.24	Add New booking Request Page Part 1	266
N.25	Add New booking Request Page Part 2	267
N.26	Equipment and Type Page	268
N.27	Add New Type Page	269
N.28	Add New Equipment Page	269
N.29	Edit Selected Type Page	270
N.30	Edit Selected Equipment Page	270

N.31	Venue and Location Page	271
N.32	Add New Location Page	272
N.33	Add New Venue Page	272
N.34	Edit Selected Location Page	273
N.35	Edit Selected Venue Page	273
N.36	Member Welcome Page	274
N.37	Approved Booking List for Member	275
N.38	Booking Calendar of Member Module	275
N.39	Daily Schedule Page of Member Module	276

LIST OF ABBREVIATIONS

1NF First Normal Form

2NF Second Normal Form

3NF Third Normal Form

AJAX Asynchronous JavaScript and XML

CASE Computer-Aided Software Engineering

CGI Common Gateway Interface

CPU Central Processing Unit
CRB Collection Record Book

CSS Cascading Style Sheet

DBMS Database Management System

DBLC Database Life Cycle

DDL Data Definition Language

DHTML Dynamic Hypertext Markup Language

DSDM Dynamic Systems Development Method

DOM Document Object Modal

EBRS Equipments Booking Registration Schedule

ERD Entity Relationship Diagram

et al. et alii

etc. etcetera

FK Foreign Key

GB Gigabyte

GIF CompuServe Graphics Interchange Format

HotMot Web Booking and Hotel Management System

HTML Hypertext Markup Language

HTTP Hypertext Transfer Protocol

ID Identification

IDE Integrated Development Environment

id est i.e.

ΙE Internet Explorer

IIS **Internet Information Services**

JPEG Joint Photographic Experts Group

LCD Light Crystal Display

MB Megabyte

NUS National University of Singapore

OFOSBS Online Facility and Open Space Booking System

PC Personal Computer

PHP Hypertext Preprocessor

Petaling Jaya PJPK Primary Key

PNG Portable Network Graphics

PSM Projek Sarjana Muda

RAD Rapid Application Development

RAM Random Access Memory

SMTP Simple Mail Transfer Protocol

SQL Structured Query Language

SSL Secure Socket Layer

UML Unified Modeling Language

Uniform Resource Locater URL

XML Extensible Markup Language

YES Youth Excel Services

VBRS Venue Booking Registration Schedule

Venue and Equipments Manual Recording System **VEMRS**

VEOBS Venue and Equipments Online Booking System

WBSCS Web-Based System for Communication and Scheduling