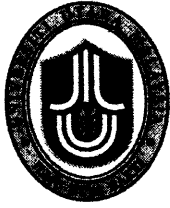


AN INTEGRATED UUM WEB-BASED ELECTRONIC TICKETING  
SERVICE FOR EXPRESS BUS SERVICE PROVIDER

A thesis submitted to the Graduate School in partial fulfilment of the requirements  
for the degree  
Master Of Science IT (Management)  
Universiti Utara Malaysia

by  
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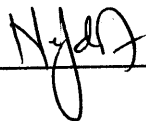
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## ABSTRAK

Tradisi pembelian tiket bas yang tidak menggunakan IT dalam proses pembeliannya adalah tidak berkesan dari segi kosnya. Dengan wujudnya evolusi teknologi Internet, cara pembelian tiket yang baru telah diperkenalkan—pertiket elektronik. Internet telah membolehkan perkhidmatan pembelian tiket jenis ini berlaku 24 jam setiap hari di mana jua selagi tiket masih ada. UUM telah diperlihatkan berpotensi untuk menawarkan perkhidmatan e-tiket kepada para penuntutnya. Dengan itu, satu sistem integrasi pertiket elektronik UUM yang berasaskan jaring UUMET telah dibangunkan untuk menyokong idea ini. Sistem UUMET merupakan suatu aplikasi yang dirangkakan khas kepada para penuntut UUM bagi membolehkan mereka membuat pembelian tiket bas ekspres tanpa perlu menghadirkan diri ke kaunter tiket. Projek ini hanya memfokuskan pembangunan sistem prototaip UUMET yang menyokong transaksi pembelian elektronik tiket kepada para penuntut UUM sahaja. Sistem UUMET terdiri daripada satu pangkalan data yang dibangunkan dengan menggunakan MySQL, pelayan Apache sebagai pelayan jaring, dan PHP sebagai pelayan aplikasinya. Metodologi yang digunakan ialah sistem pembangunan berasaskan objek yang menggunakan *Unified Modeling Language*—iaitu *Unified Approach*. Pembangunan sistem prototaip UUMET mengaplikasikan kesemua model fasa kitaran pembangunan sistem iaitu penganalisan, perangkaan, pembentukan prototaip, dan pengujian ke atas sistem prototaip. Ujian ke atas sistem prototaip UUMET adalah berdasarkan pengujian berasaskan senario yang mengaplikasikan strategi pengujian kotak hitam dan dijalankan di dalam persekitaran hidup yang tidak sebenar.

## ABSTRACT

Conventional bus ticketing transactions without IT supported are not cost-effective nowadays. With the evolution and emergence of Internet technology, there comes a new way of ticketing transaction—electronic ticketing. Internet provides this type of ticketing services available online 24-hour, day and night, and anywhere as long as the ticket is still available. UUM is seen to have the ability to occupy this electronic ticketing services to its students. An integrated UUM web-based electronic ticketing (UUMET) system was developed to support this idea. The UUMET system is specially designed to UUM student to enable them to make express bus ticket purchase without having to travel to the ticket counter. This project focused only to the development of a prototype for the UUMET system that support the electronic ticket buying transaction to the student of UUM. UUMET system comprises of a database that is built using MySQL database application software, Apache server as the web server, and PHP as its application server. The methodology used is object-oriented system development using the Unified Modeling Language—the Unified Approach. The development of the UUMET prototype system applied all phases of the system development life cycle model namely analysis, design, prototyping, and testing of the prototype system. The UUMET prototype system is tested using the scenario-based testing applying the concept of black-box strategy done in a non-real life environmental.

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## TABLE OF CONTENT

	Page
PERMISSION TO USE	
ABSTRAK	i
ABSTRACT	ii
ACKNOWLEDEGEMENT	iii
TABLE OF CONTENT	iv
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS	xii
CHAPTER 1: INTRODUCTION TO UUMET SYSTEM	1
1.0 Introduction	1
1.1 Problem Statement	2
1.2 Objective of the Project	2
1.3 Project Scope	2
CHAPTER 2: LITERATURE REVIEW	3
2.0 Introduction	3
2.1 Electronic Ticket	5
2.2 Electronic Ticketing	6
2.3 Basic Service Trading Mechanism	8
2.3.1 Purchase Transaction	9
2.3.2 Ticket Issuance	10
2.3.3 Ticket Consumption	10

2.4	Example of Implementation	11
2.4.1	Swiss Railways	11
CHAPTER 3: METHODOLOGY		13
3.0	Introduction	13
3.1	Object-Oriented Analysis	15
3.1.1	Identifying the Actors	17
3.1.2	Developing a Simple Business Process Model	18
3.1.3	Developing Use Cases	18
3.1.4	Identifying Classes	20
3.1.5	Identifying Relationships and Multiplicity	22
3.1.5.1	Identifying Super-Sub (Generalization or Specialization) Relationships	23
3.1.5.2	Identifying the Aggregation/A Part-of Relationship	24
3.1.6	Identifying Class Attributes	25
3.1.7	Identifying Class Methods	26
3.1.8	Developing the UML Class Diagram	26
3.2	Object-Oriented Design	27
3.2.1	Designing Classes	28
3.2.1.1	Refining Attributes	28
3.2.1.2	Designing Methods	29
3.2.2	Designing the Access Layer	30
3.2.3	Designing the View Layer	31
3.2.3.1	Macro-Level UI Design Process— Identifying View Layer Objects	31



3.2.3.2	Micro-Level UI Design Process	32
3.3	Prototyping	32
3.4	System Testing	33
3.4.1	Testing Strategy	34
3.4.2	Developing Test Cases	34
<b>CHAPTER 4: SYSTEM MODELS AND DESIGN OF UUMET SYSTEM</b>		<b>36</b>
4.0	Introduction	36
4.1	Object Oriented Analysis	36
4.1.1	Identifying the Actors	37
4.1.2	System Requirements Specification	38
4.1.2.1	Problem Statement	38
4.1.2.2	Assumption	38
4.1.3	The Simple Business Process Model	39
4.1.4	Developing the Use Cases	40
4.1.5	Identifying Classes	44
4.1.6	Identifying Associations and Multiplicity	45
4.1.7	Identifying Super-Sub (Generalization/ Specialization) Relationships	46
4.1.8	Identifying the Aggregation/A Part-of Relationship	46
4.1.9	Identifying Class Attributes	46
4.1.10	Identifying Class Methods	47
4.1.11	Developing the UML Class Diagram	47
4.2	Object-Oriented Design	49
4.2.1	Designing Classes	49

4.2.1.1	Refining Attributes	49
4.2.1.2	Designing Methods	51
4.2.1.2.1	UUMStudent Class— authenticateStudent() Method	51
4.2.1.2.2	UUMStudent Class— retrieveStudent() Method	51
4.2.1.2.3	Ticket Class—browseTicket() Method	52
4.2.1.2.4	Ticket Class—retrieveTicket() Method	53
4.2.1.2.5	ExpressBus Class— retrieveExpressBus() Method	54
4.2.1.2.6	TransportRegistration Class— retrieveTransportRegistration() Method	54
4.2.1.2.7	Ticket Class—buyTicket() Method	54
4.2.1.2.8	Ticket Class—updateTicket() Method	56
4.2.1.2.9	Student Class—updateStudent Account() Method	56
4.2.1.2.10	TicketingTransaction Class— createTicketingTransaction() Method	56

4.2.1.2.11 StudentAccount Class—	
checkAccountBalance()	
Method	57
4.2.1.2.12 StudentAccount Class—	
retrieveStudentAccount()	
Method	57
4.2.2 Designing the Access Layer	58
4.2.2.1 Creating an Access Classes for the	
UUMET System’s Classes	58
4.2.2.2 UUMET System Database Schema	62
4.2.3 Designing the View Layer	63
4.2.3.1 Macro-Level UI Design	64
4.2.3.2 Micro-Level UI Design	64
CHAPTER 5: SYSTEM TESTING AND RESULTS	66
5.0 Introduction	66
5.1 Developing Test Cases	66
5.2 Results	67
CHAPTER 6: DISCUSSION AND CONCLUSION	68
6.0 Introduction	68
6.1 Significance and Contribution	68
6.2 Limitation and Recommendation	69
6.3 Conclusion	69
REFERENCE	70
APPENDIX	74

## LIST OF TABLES

	<b>Page</b>
Table 1: UUMET System's Classes	45
Table 2: Class Matrix for Business Layer Class of UUMET System	45
Table 3: Business Layer Class Associations and Multiplicities of UUMET System	46
Table 4: Business Layer Class Attributes of UUMET System	47
Table 5: UUMET System's Classes and Attributes after Refining Process	50
Table 6: UUMET System Use Cases and Scenarios	66
Table 7: Test Cases for the UUMET System	67

## LIST OF FIGURES

	<b>Page</b>
Figure 1: Basic Service Trading Using E-Ticket Mechanism	9
Figure 2: Components of Online Ticketing	11
Figure 3: The Processes and Component of the UA	15
Figure 4: An UML Class Diagram Structure	26
Figure 5: The Architecture of UUMET System	33
Figure 6: The UUMET System Context Model Diagram	37
Figure 7: Activity Diagram for UUMET System.	40
Figure 8: The Use Case Model for UUMET System	41
Figure 9: Sequence Diagram for Login Use Case	42
Figure 10: Sequence Diagram for Browse Ticket Use Case	43
Figure 11: Sequence Diagram for Buy Ticket Use Case	44
Figure 12: Sequence Diagram for Check Account Balance Use Case	44
Figure 13: An UML Class Diagram for UUMET System Classes	48
Figure 14: An Activity Diagram for UUMStudent Class— authenticateStudent() Method	52
Figure 15: An Activity Diagram for Ticket Class— browseTicket() Method	53
Figure 16: An Activity Diagram for Ticket Class— buyTicket() Method	55

Figure 17: An Activity Diagram for StudentAccount Class— checkAccountBalance() Method	57
Figure 18: The Data Model for UUMStudent Class and StudentAccount Class	58
Figure 19: The Data Model for StudentAccount Class and TicketingTransaction Class	59
Figure 20: The Data Model for StudentAccount Class and Ticket Class	60
Figure 21: The Data Model for Ticket Class and ExpressBus Class	60
Figure 22: The Data Model for Ticket Class and TransportRegistration Class	61
Figure 23: The Data Model for TransportRegistration Class and ExpressBus Class	62
Figure 24: The UUMET System Database Schema	63
Figure 25: An Interface Structure Diagram for UUMET System	65

## LIST OF ABBREVIATIONS

- CA – Certification Authority
- CERN – a collective of European high energy physics researchers
- e-business – electronic business
- e-commerce – electronic commerce
- EDI – electronic data interchange
- e-mail – electronic mail
- e.g. – for instance
- etc. – et cetera
- e-ticket – electronic ticket
- e-ticketing – electronic ticketing
- GUI – graphical user interface
- HTTP – Hypertext Transfer Protocol
- i.e. – for example
- IT – Information Technology
- NCSA – National Center for Supercomputing Applications
- OCL – object constraint language
- OOA – object-oriented analysis
- OOD – object-oriented design
- SSL – Secure Sockets Layer
- UA – Unified Approach
- UI – user interface
- UML – Unified Modeling Language
- UUM – Universiti Utara Malaysia

UUMET – Universiti Utara Malaysia Electronic Ticketing

UUMETDB – Universiti Utara Malaysia database

vs. – versus

W3C – W3 Consortium

WWW – World Wide Web



## **CHAPTER 1**

### **INTRODUCTION TO UUMET SYSTEM**

#### **1.0 Introduction**

Nowadays, Universiti Utara Malaysia (UUM) has been seen to have the IT and the Internet to support their daily activities. Unfortunately, there are still some weaknesses found where these technologies are not fully utilized for its student advantages. One of the problems identified that this project is focused on is the conventional way of buying the express bus ticket still in practice. As according to Zwass (1999), the conventional bus ticketing services are transactions that are not supported with IT. This type of ticketing are conducted using media like paper, telephone or fax. Conventional ticketing even seems to be popular and is in practices up to today, but with the evolution of Internet, there has evolved the needs to change from conventional ticketing to electronic ticketing (e-ticketing).

The UUM Electronic Ticketing (UUMET) system is a web-based application specially designed to UUM student to enable them to purchase express bus ticket without having to travel to the ticket counter. Unlike conventional ticketing services, the e-ticketing services are like other IT-supported business transactions. It uses media like electronic mail (e-mail), EDI, WWW and other Internet services to support its functions (Chesher & Kaura, 1998). This web-based application enables the express bus service providers to store their ticket for sale in an integrated database. Student wishes to buy the ticket may access UUMET system and buy the ticket online at anywhere and anytime, as long as the ticket is still available.

UUMET system comprises of a database that is built using MySQL database application software, Apache server as the web server, and PHP as its application server.

The contents of  
the thesis is for  
internal user  
only

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