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

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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—pertiketan 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 pertiketan 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 penganalisaan, perangkaan, pembentukan prototaip, dan pengujian ke atas sistem prototaip. Ujian ke atas sistem prototaip UUMET adalah berdasarkan pengujian beasaskan 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 nowdays. 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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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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