DESIGN WEB-BASED TICKETING SYSTEM FOR KTMB

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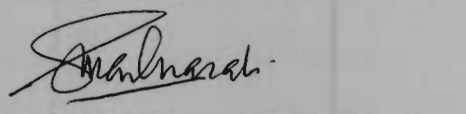
(Signature) : 

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ABSTRACT

A combination of technical innovations, system cost reductions transport industry restricting has led to the development and diffusion of a variety of sophisticated ticketing reservation systems. These reservation systems have transformed the manner in which a destination and its travel products are packaged, marketed and eventually sold to the consumer. Presently, conventional 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.

In this study focused only to the development of a prototype for the KTMB e-ticketing reservation system comprises of a database that is built using MySQL database application software, Apache server as the web server and ASP as its application server. The methodology used is object-oriented development using the Unified Modeling Language—UA Approach. The development of KTMB prototype system applied all phases of the SDLC.

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ASP	Active Server Page
CA	Certification Authority
CGI	Common gateway interface
CD	Compact Disc
CERN	Conseil Européenne pour la Recherche Nucleaire
DVD	Digital Video Display
DBMS	Database Management System
DB	Database
ERD	Entity Relationship Diagram
HTTP	HyperText Terminal Protocol
HTML	HyperText Markup Language
ICT	Information and Communication Technology
IS	Information System
IT	Information Technology
IIS	Internet Information Service
NFC	Near Field Communication
OOSAD	Object-oriented System Analysis and Design
PIN	Personal Identification Number
RMV	Rhein-Main Verkehrsverbund
SQL	Structured Query Language
SDLC	System Development Life Cycle
TCP/IP	Transmission Control Protocol/ Internet Protocol
TVM	Ticket Vending Machines
UUM	University Utara Malaysia
UML	Unified Modeling Language
UA	Unified Approach
WWW	World Wide Web

CHAPTER 1

INTRODUCTION

This chapter will give a background of the organization and further discussion about the problem statement, requirements, objectives, significant, scope and finally research outcome.

1.1 Background

Thousand of Kuala Lumpur citizens travel using public transports every day. This includes those who are using train services such as LRT, KL, Monorail, ERL and KTM Commuter. There are two types of user's namely frequent and new users of the said services.

One of the most effective solutions for increasing business values, attracting more customers, and increasing customer satisfaction is to provide internet-based low-fare travel tickets. Surveys indicate that travel purchases and reservations are one of the largest and fastest growing segments of electronic commerce not only in the USA, but in Europe as well. One in four users is currently using the Internet to make travel plans (Bernstein & Awe, 1999).

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REFERENCE

Bennett, S., McRobb, S., & Farmer, R. (2006). *Object-oriented systems analysis and design using UML.* London: McGraw-Hill.

Bahrami (1999). *Software Usability Model and Product Evaluation*. United Kingdom: Addison Wesley Longman.

Bernstein, J., & Awe, S. (1999). *Wired travelers: travel and tourism web sites.* Retrieved November 5, 2007, from http://www.emeraldinsight.com/Insight/ViewContentServlet?Filename=Published/EmeraldFullTextArticle/Pdf/2400270406.pdf

Booch, G. (1994). *Object Analysis and Design with Applications*. Redwood, CA: Benjamin Cummings.

Bodoff, S. (2007). *Introduction to Web Applications*, retrieved 9/10/2007 from http://java.sun.com/j2ee/1.3/docs/tutorial/doc/WebApp.html

Booch, G., Jacobson, I., & Rumbaugh, J. (1999). *The Unified Modeling Language*, National Guide Version 1.0. Addison Wesley.

Champeaux, D., Lea, D., & Faure, P. (1993). *Object-oriented System Development.* Addison Wesley.

Cockburn, A. (1997). *Structuring Use Cases with Goal.* Retrieved from http://alistair.cockburn.us/crystal/articles/sucwg/structuringucswithgoals.htm.

Coad, P., & Yourdon, E. (1991). *Object oriented design.* Eaglewood Cliffs, NJ: Yourdon Press, Prentice Hall.

Darby & Flenner (2001). *Java E-commerce*. Wrox Press Limited.

Dennis C., Patel, T., King, T., & Hilton, J. (2000). *Qualitative Studies of Shoppers' Motivations, 9th International Conference on Recent Advances in Retailing and Services Science*. Germany: EIRASS, Heidelberg.

David, F.D. (2004). *Perceived Usefulness, Perceived Ease of Use and End-User Acceptance of Information technology*. London: Prentice Hall.

Dasai, T. (2002). *Current State of and Issues concerning Mobile Electronic Payment and Mobile e-Ticketing*. Retrieved November 15, 2007, from http://www.ecom.jp/ecom_e/latest/ecomjournal_no4/wg13_e04.htm.

Fujimura, K., & Nakajima, Y. (1998). "*General-purchase Digital Ticket Framework*", the Proceeding of the 3rd USENIX Workshop on Electronic Commerce. Boston, Massachusetts.

Hoffer, J.A., George, J.F., & Valacich, J.S. (1999). *Modern Systems Analysis and Design* (2nd Edition). United Kingdom: Addison Wesley Longman.

Information Tracking Unit, ITU (2004). Social and human considerations for a more mobile world. In: *Proceedings of the ITU/MIC Workshop on Shaping the Future Mobile Information Society.* International Telecommunication Union, Seoul, Korea. March 4-5. 1-44.

Jacobson et al. (2002). *The Unified Software Development Process.* Addison Wesley.

jessett.com. *Design principles*. Retrieved on 5th March 2008, from http://www.jessett.com/web_sites/design/index.shtml

Kothari, C.R. (1985). *Research Methodology Methods and Techniques*. Delhi: Wiley Eastern Limited.

Kruelle, G., & Swatman, P. (2006). *e-Ticketing Strategy and Implementation in an Open Access System*: The case of Deutsche Bahn. Retrieved December 10,

2007, from http://www.insyl.unisa.edu.au/publications/working-papers/2006-08.pdf

KTMB, (2006). *KTM Komuter Service*. Retrieved February 20, 2007, from http://www.ktmb.com.my/article.asp?id=1633

Knuth (2002). *Web is literate programming*. United Kingdom: Addison Wesley Longman.

Lee (2002). *Introduction to HTML Language*. Prentice Hall, USA.

Lee, C. (2003). *Class Diagram: Testing UML Models*, Part 3. Retrieved from http://www.stickyminds.com/sitewide.asp?Function=edetail&ObjectType=ART&Objectid=6211

Moreau, B. (2003). *Feature: Going Contactless - on the move*. In Card Technology Today, 10-11.

Meyer, D. (1999). Taking travel management online. *Business Travel News*.

Munnich, L., & Douma, F. (2002). *Transportation technologies for sustainable communities*. Retrieved March 10, 2007, from http://www.lrrb.gen.mn.us/PDF/200226.pdf

Malan, R., & Bredemeyer, D. (1999). *Functional Requirements and Use Cases*. Retrieved from http://www.bredemeyer.com

Meyer, D. (1999). *Taking travel management online.* Business Travel News.

Nielsen, J. (1994). *Scenarios in discount usability engineering*. Envisioning work and Technology. Book under preparation

Norman, D.A. (2000). The Rise of Weblications: Keynote address presented at the User Experience World Tour. November 17, 2000, Chicago. IL

Nielsen, J., & Landauer, T. (2003). *A mathematical model of the finding of usability problems*. In ACM INTERCHI. Amsterdam, The Netherlands, April. 206-213.

Ondrus, J., & Pigneur, Y. (2005). Towards a Holistic Analysis of Mobile Payments: A Multiple Perspectives Approach. *Electronic Commerce Research and Application*.

people.cs.uct.ac.za. *Secure Electronic ticketing on the internet—why internet ticketing*? Retrieved on 24 March 2008, from http:// people.cs.uct.ac.za/~dburford/nis/sect4.htm.

Reiven (2007). *Advantages Importance and Implementation Plug-Ins*. California: Osborne McGraw Hill.

Raymond, M.J. (1995). *Management Information System A Study of Computer-based Information System* .Texas: A&M University.

Shneiderman, B. (1998). *Designing the User Interface,* 3rd ed., Addison-Wesley. http://www.w3.org/People/Berners-Lee/WorldWideWeb.html

Salhir, S. (1999). *The Unified Modeling Language (UML)*.-Two Years After Adoption of the Standard. Retrieved from http://home.earthlink.net/~salhir/theumltwoyearsafteradoptionofthestandard

Sparks, G. (2000). An introduction to modeling software systems using the unified modeling language: the use case model. Retrieved from http://www.sparxsystems.com.au.

Shirley, S. (2001). *A Proposed Electronic Ticket Management for Trading Service in Internet.*

Segev, A., Wan, D., & Beam, C. (1995). Designing Electronic Catalogs for Business Value: Results from the Commercenet Pilot. Technical Report Working

Paper CITM-WP-1005, Fischer Center for Information Technology: U.C. Berkeley.

Spellman (2002). *Database Independent Implementation and Programming Language*. New York: Prentice Hall.

Ullman, L. (2003). *PHP and MySQL for Dynamic Web Sites* (1st Edition). London: Peachpit Press.

Valacich, J.S., George, J.M., & Hoffer, J.A. (2004). *Essential of system analysis and design*, Prentice Hall, Upper Saddle River, NJ.

Visser, E., & Lanzendorf, M. (2003). *Mobility and Accessibility effects of B2C E-Commerce: a Literature Review*. Retrieved March 5, 200, from http://www.blackwell-synergy.com/doi/abs/10.1111/j.0040-747X.2004.00300.x

Wan, G.H., & Che, P. (2004). Chinese Air Travelers' Acceptance towards Electronic Ticketing. *International Engineering Management Conference*. Retrieved December 5, 2007, from http://ieeexplore.ieee.org/iel5/9654/30509/01407118.pdf?arnumber=1407118

webwizguide.com. Web development knowledge: *What Are Active Server Pages (ASP)*?. Retrieved on 4th March, 2008 from http://www.webwizguide.com/kb/asp_tutorials/what_is_asp.asp

Wilson (2002). Barth & Robert, H. (2006). Internet hotel reservations: the "terms and conditions" trap.

Wood, L. (Ed.). (1998). *User Interface Design*. Boca Raton, FL: CRC Press.

Whitten, J., Bentley, L., & Dittman, K. (1998). *Systems Analysis and Design Methods*. USA: McGraw- Hill.

Xiao, L., & Dasgupta, S. (2002). *Measurement of User Satisfactions with Web-based Information System: An Empirical Study.* Eighth Americas Conference on Information Systems.

Zwass, V. (1999). Structure and Macro-level Impacts of Electronic Commerce: From Technological Infrastructure to Electronic Marketplaces. K.E. Emerging Information Technology, Kendall: Sage Publications.