

**MOBILE RESERVATION SYSTEM
FOR UUM INN**

LUMA M. FOUAD

UNIVERSITI UTARA MALAYSIA

2008

**MOBILE RESERVATION SYSTEM
FOR UUM HNN**

A thesis submitted to the Graduate School in partial fulfillment of the
requirements for the degree Master of Science (Information and
Communication Technology)
Universiti Utara Malaysia

By

LUMA M. FOUAD(89202)

Copyright ©LUMA M.FOUAD, 2008. All rights reserved.



PUSAT PENGAJIAN SISWAZAH
(Centre For Graduate Studies)
Universiti Utara Malaysia

PERAKUAN KERJA KERTAS PROJEK
(Certificate of Project Paper)

Saya, yang bertandatangan, memperakukan bahawa
(*I, the undersigned, certify that*)

LUMA M. FOUAD

calon untuk Ijazah
(*candidate for the degree of*) **MSc. (ICT)**

telah mengemukakan kertas projek yang bertajuk
(*has presented his/her project paper of the following title*)

MOBILE RESERVATION SYSTEM FOR UUM INN

seperti yang tercatat di muka surat tajuk dan kulit kertas projek
(*as it appears on the title page and front cover of project paper*)

bahawa kertas projek tersebut boleh diterima dari segi bentuk serta kandungan
dan meliputi bidang ilmu dengan memuaskan.
(*that the project paper acceptable in form and content, and that a satisfactory
knowledge of the field is covered by the project paper*).

Nama Penyelia Utama
(*Name of Main Supervisor*): **ASSOC. PROF. DR. WAN ROZAINI SYEIKH OSMAN**

Tandatangan
(*Signature*)

: Rozaini

Tarikh
(*Date*)

: 22/4/08

PROF. MADYA DR. WAN ROZAINI SHEIKH OSMAN
Pensyarah
Bidang Sains Gunaan
Kolej Sastera & Sains
Universiti Utara Malaysia

PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying of this thesis in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence by the Dean of Faculty of Information Technology. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my thesis.

Requests for permission to copy or to make other use of materials in this thesis, in whole or in part, should be addressed to

Dean of Faculty of Information Technology

Universiti Utara Malaysia

06010 UUM Sintok

Kedah Darul Aman.

ABSTRACT

Cell phones (mobile telephones) have today become part of our life style. One exciting thing about mobile devices is their ability to connect to the Internet and to execute web applications. Mobile applications can now be developed to deliver any types of data, to any user, any place in the world. Different mobile devices support different programming languages. Some support WAP and WML, some support HTML or a limited version of HTML, and some support both or a different language. To support all types of mobile devices, developers must create one different application for each language. WAP (Wireless Application Protocol) is a protocol for accessing information and services from wireless devices such as Mobile Phones and PDAs.

This research introduces a prototype" MOBILE RESERVATION SYSTEM FOR UUM INN" which is a WAP application that can be used by mobile phones. The proposed application will be used to enable student or their family or any one who want to stay in UUM INN. To use their hand phone Any where any time to make reservation with the hotel.

Acknowledgements

My greatest gratitude to Allah, the Grandest and Almighty, Most Gracious and the Most Merciful for giving me the chance, time, and ability to perform this study and for all the chances He has given to me until now

I would like to say big thanks to every one gave me a minute of his time to help me finishing my work. I hope to be as good as they want. First, I would like to thank. Assoc. Prof. Dr. Wan Rozaini bt Sheik Osman for advice and supervision during the preparation of this project. Also. for her suggestions and help and my evaluator Nur Fadziana Faisal Mohamed for her suggestions and help.

Furthermore I would like to thank my friends Hanan, Heba, for their kindness and support, as well as all lecturers at the faculty of Information Technology, because they gave me all the information that helped me to finish my work properly.

Above all, I would like to thank my dearest and beloved husband Abd-Alkareem, my daughter Sarah, my sons ,Abd-ulla and Omar, my mother and father and all my family members for their encouragement and support all the period of my studying.

TABLE OF CONTENTS

PERMISSION TO USE -----	i
ABSTRACT -----	ii
ACKNOWLEDGEMENT -----	iii
TABLE OF CONTENTS -----	iv
LIST OF TABLES -----	vi
LIST OF FIGUERS -----	vii

CHAPTER 1:INTRODUCTION

1.1 Background -----	1
1.2 Problem Statement-----	4
1.3 Objectives-----	6
1.4 Scope -----	6
1.5 Research question -----	6
1.6 Significance of the study-----	7
1.7 Organization of the research -----	7
1.8 Summary-----	8

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction-----	9
2.2 Electronic Reservation-----	10
2.3 Mobile Commerce -----	11
2.4 WAP Concept and Definition-----	12
2.4.1 WAP atchitecture -----	13
2.4.2 WAP Seesion-----	15
2.5 Mobile Applications -----	18
2.6 Mobile Reservation-----	20
2.7 Mobile Booking-----	21
2.8 Summary-----	23

CHAPTER 3:METHODOLOGY

3.1 Introduction -----	24
3.2 Research design methodology -----	24
3.2.1 Awareness of problem-----	25
3.2.2 Suggestion-----	26

3.2.3 Development-----	26
3.2.4 Evaluation-----	29
3.2.5 Conclusion -----	30
3.3 Summary -----	30

CHAPTER 4:FINDING AND DISCUSSION

4.1 Introduction-----	31
4.2 List of requirement-----	32
4.3 System Design-----	33
4.3.1 Use Case Specification -----	34
4.4 System Development-----	45
4.5 Evaluation Result-----	46
4.6 User Evaluation -----	48
4.7 Summary-----	52

CHAPTER 5: INTRODUCTION

5.1 Study summary-----	53
5.2 Conclusion of the Study -----	53
5.3 Study Contribution -----	54
5.4 Problems and Limitations -----	54
5.5 Suggestions for Future Works -----	55
REFERENCES-----	56
Appendix A-----	62
Appendix B-----	69
Appendix C-----	72

LIST OF TABLES

1	RESERVATION PERCENTAGE IN YEAR(2006-2007)IN UUM INN (2006-2007)-----	5
4.1	DEMOGRAPHICS DATA SUMMARY -----	47
4.2	DESCRIPTIVE STATISTICS FOR ALL DIMENSIONS –	48
4.3	DESCRIPTIVE STATISTICS FOR ALL ITEMS-----	49

LIST OF FIGUERS

1.1	STATISTICS OF THE RESERVATION FOR YEAR (2006-2007)---	5
2.1	WAP Protocol Stack -----	14
2.2	WAP NETWORK ARCHITECTURE -----	16
2.3	Mobile flight booking system -----	22
3.1	RESEARCH DESIGN METHODOLOGY-----	25
3.2	THE PROTOTYPING PROCESSES -----	27
4.1	USE CASE DIAGRAM FOR MRSFUI-----	33
4.2	SEQUENCE DIAGRAM FOR RESERVATION PROCESS-----	39
4.3	SEQUENCE DIAGRAM FOR VIEW BOOKING-----	40
4.4	SEQUENCE DIAGRAM FOR UPDATE BOOKING-----	41
4.5	SEQUENCE DIAGRAM FOR DELETE BOOKING-----	42
4.6	SEQUENCE DIAGRAM FOR ADMI-NISTRATOR LOGIN-----	43
4.7	CLASS DIAGRAM FOR MRSFUI-----	44
4.8	WEB-BASED PROTOTYPE FOR MANAGER SIDE -----	45
4.9	MOBILE PROTOTYPE FOR CUSTOMER SIDE	46
4.10	THE PIE CHART FOR QUESTION ONE AT THE FIRST DIMENTION	49
4.11	THE PIE CHART FOR QUESTION TWO AT THE FIRST DIMENTION	50
4.12	THE PIE CHART FOR QUESTION THREE AT THE FIRST DIMENSION	51

companies. Most of the protocols in use today make a set of assumptions about the environment, such as the type of network that will be available (particularly from the point of view of bandwidth and reliability), the types of devices that will be accessing the services, and the types of services that will be accessed. These assumptions do not necessarily hold true in the wireless world. (Adaptus 2006)

WAP protocols are needed to display a website on the mobile phones or PDAs because WAP technology is relay on using of WML (Wireless Markup Language) that is used by developers to write pages that can be displayed on Mobile phones those support WAP.

The advancement in information technology has changed the communication process among the people around the world. The technology such as mobile and portal has become an important medium for people to communicate between each other. Many people already have good knowledge and experiences in using mobile devices in wireless or wired in particular of Internet applications. In interactive systems, to which data services belong to as well, customer orientation becomes more and more a fundamental user orientation. The user interface is the most important representation of the company. That means, in the context of mobile services it is the mobile communication to the customer. If the usability of the interface is bad, customers will not be able to utilize the system. Thus, they will terminate the running transaction and find the alternative providers.

The mobile devices and the emergence of wireless technologies are rapidly increasing. Firms adopted mobile devices and wireless technologies to assist and improve their business' performances. Today even small mobile devices access the

The contents of
the thesis is for
internal user
only

- and internal memory in mobile devices. In development phase, developer need to concern about the size of the screen.
- iii. The WAP prototype and web prototype were tested using localhost server, namely IIS. But with limited financial resources no actual web server can be utilized in testing the prototype.

5.5 Suggestions for future works

The Mobile Reservation Application is to enable the customers to reserve as they want as well as necessary information about the reservation such as the cost of the reservation or the room, the type of the room, the day of the reservation. A lot of works still need to be done on this application in the future such as the payment process, and sending messages from the administrator to the customer incase there are some changes occur for the reservation that the customer reserve it, to inform him/her about these changes.

References:

Adaptus. (2006). Mobile Ticketing. Retrieved Nov, 12, 2007 from
<http://www.mobileticketing.com/>

Benetti, I., Beneventano,D.,Bergamaschi,S., Corni,A., Guerra,F., & G. Malvezzi. (2001). Si-designer: a tool for intelligent integration of information. International

Blervaque, V. (2003). Tlepayment Syatem for Multimodal Transport Services using Portable Phones. Retrieved Nov, 12, 2007 from
http://www.ertico.com/download/telepay_documents/2_11D01F10.pdf

Choi, S.,Stahl,D.O.,& Whinston,A.B.(1997). The Economics of Electronic Commerce. Indianapolis. Retrieved nov,12,1997 from
<http://scholar.google.com/scholar?q=Meanwhile,+e-commerce+can+be+defined+as+a+subset+of+e-business&hl=en&um=1&ie=UTF-8&oi=scholart>

Conference on System Sciences (HICSS2001). Retrieved Nov,12, 2007from
<http://dictionary.zdnet.com/definition/e-commerce.html>

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.

DZNet. (2007).E-Commerce. Retrieved nov,13,2007 from
<http://dictionary.zdnet.com/definition/e-commerce.html>.

Galileo. (2007). Electronic Ticketing. Retrieved Nov, 12, 2007 from
<http://www.galileo.com/vendors/air/arekt.htm>

Hesterbrink,C. (1999). E-Commerce and ERP: Bring Two Paradigms Together, Price Waterhouse & Cooper.

Hoffman, D.L. & Novak, T. P. (1996). Marketing in Hypermedia Cmputer-Mediated Environments: Conceptual Foundations, *Journal of Marketing*, 60 ,(3), 50-68.

Kirakowski, J. (2004). Questionnaires in Usability Engineering, A List of Frequentl Asked Questions. Human Factors Research Group, Cork, Ireland Retrieved Nov, 12, 2007 from
<http://www.ucc.ie/hfrg/resources/qfaql.html>

Kustin, S. (2002). The Proliferation of Wireless Internet Access Devices and its Effect on Consumer Behavior Patterns. Retrieved nov, 14, 2007 from
<http://www.progstrat.com/techforum/trends4.htm>

Laudon, K. C., & Laudon, J. P. (2000). *Management Information Systems*: Prentice Hall PTR Upper Saddle River, NJ, USA.

Mobile Computing. (2005). WAP. Retrieved Nov, 13, 2007 from

http://searchmobilecomputing.techtarget.com/sDefinition/0,,sid40_gci213337,00.html

MoreMagic. (2007). Mobile Ticketing. Retrieved Nov, 14, 2007 from

<http://www.moremagic.com/applications/ticketing.html>

my Malaysia books. (2007). My Langkawi, Kedah. Retrieved Nov, 11, 2007 from
<http://www.mymalaysiabooks.com/Kedah/Langkawi.htm>

NeT. (2003). Mobile Ticketing. Retrieved Nov, 12, 2007 from
www.mobiletransaction.org.

Vaishnavi V & Kuechler B (2004). Design Research in information system. Retrieved Oct, 5, 2007 from

<http://www.isworld.org/Researchdesign/drisISworld.htm>

Webagency. (2001). Mobile Commerce. Retrieved Nov, 17, 2007 from

www.ebusinessforum.gr/engine/index.php?op=modload&modname=Downloads&action=downloadsviewfile&..

Whatis.com. (2007). E-ticket. Retrieved Nov, 15, 2007 from

http://searchsmb.techtarget.com/sDefinition/0,,sid44_gci780616,00.html

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.

Jill, A. (2005). Mobile technologies and learning. Retrieved Feb, 1, 2008, from

<http://www.m-learning.org/docs/The%20m-learning%20project%20-20technology%20update%20and%20project%20summary.pdf>

IBM. (2006). Mobile Content Services: Delivering next-generation content service capabilities. Retrieved Feb, 1, 2008, from

http://www.03.ibm.com/industries/media/doc/content/bin/Ped_8_Mobile_Content_Services_White_Paper_09_2006.pdf

Stella Y., Michael J., and Chandrasekar S. (n. d.). Implementing Web- based E-commerce System at a Multinational Enterprise-A Field Study on IT Adoption. Retrieved Feb, 1, 2008, from

http://citebm.business.uiuc.edu/IT_cases/IT%20adoption%20field%20study_B.pdf

Parsons, T. (2000, November 6). E-tickets suit some travelers. Retrieved Feb, 2, 2008, from

<http://www.highbeam.com/doc/1G1-66651736.html>

Mitsubishi Research Institute and Rakuten, Inc. (2003), *Fourth Survey of Users for Mobile Contents/ Services, December (in Japanese)*. Retrieved Feb, 2, 2008 from

<http://www.oecd.org/dataoecd/22/52/38077227.pdf>

Digitsmith. (2005). Ecommerce definition and types of ecommerce. Retrieved Feb, 3, 2008, from

<http://www.digitsmith.com/ecommerce-definition.html>

Giancarlo, L. (2000, May). Types of e-commerce: B2B, B2C, C2C, C2B. Retrieved Feb, 3, 2008, from

<http://gandalf.it/offline/off26-en.htm>

Sami, I. (2006, May). From B2C to C2C e-commerce. Retrieved Feb, 3, 2008, from

[http://www.groundswell.fi/sim/academic/\(sim\)%20From%20B2C%20to%20C2C%20e-commerce.pdf](http://www.groundswell.fi/sim/academic/(sim)%20From%20B2C%20to%20C2C%20e-commerce.pdf)

Lee, Kou, and Hu. (2004). *Mobile Commerce Security and Payment Methods*.

Hershey, PA, USA: Idea Group Publishing

Lembke, and Johan. (2002). Mobile Commerce and the creation of a marketplace. *Info-The Journal of policy, regulation and strategy for telecommunications*, 4(3), 52.

Aungst, and Wilson. (2005). A primer for navigating the shoals of applying wireless technology to marketing problems. *The Journal of Business and Industrial Marketing*, 20(2), 59.

Blervaque, V. (2003). Telepayment System for Multimodal Transport Services using Portable Phones.

Clerke, I. F., T. (2003). *Mobile Portals: The Development of M-Commerce Gateways*: Idea Group Publishing, Hershey.

Luxury Experience. (2008, February). Digital World Measurements and Statistics. Retrieved Feb, 5, 2008, from

http://luxuryexperience.com/publishers_notes/publishers_monthly_notes/digital_world_measurements_and_statistics.html

IDC. (2008). Mobile Phone Development: Converged Mobile Device Market Surging. Retrieved Feb, 5, 2008, from

<http://www.mobilephonedevelopment.com/archives/217>

Jason, P. (2006, December 6). Mobile Search Optimization. Retrieved Feb, , 2008,

from <http://www.seroundtable.com/archives/006868.html>

Mediabuyerplanner. (2006, April 21). Growing Number of Mobile Device Internet

Users in Europe, Asia. Retrieved Feb, 6, 2008, from

http://www.mediabuyerplanner.com/2006/04/21/growing_number_of_mobile/

Tom. (2006, May 8). 3.3 Billion Mobile Subscribers by 2010. Retrieved Feb, 5, 2008, from

http://www.mobileweblog.com/50226711/33_billion_mobile_subscribers_by_2010.php

James A. (2000, December). The Emergence of M-Commerce. *IEEE*, 33(12), 149-150.

Angelica M. (2008, January 8). Bus operator sprints ahead with mobile ticketing. Retrieved Feb, 9, 2008, from
<http://www.computing.co.uk/computing/news/2206659/bus-operator-sprints-ahead>

Richard Q. (2004, April 17). Windows on the wold. Retrieved Feb, 9, 2008, from
http://findarticles.com/p/articles/mi_qn4158/is_20040417/ai_n12786058

Kwok, S., Yang, C., and Tam, K. (2004). Intellectual property protection for electronic commerce applications. *electronic commerce research*, 5(1). Retrieved Feb, 10, 2008, from
<http://www.csulb.edu/web/journals/jecrissues/20041/Paper1.pdf>

Mobica. (2007, November 13). Blockbusting success for mobile cinema tickets. Retrieved Feb, 15, 2008, from
http://www.allmediascotland.com/allnewswire/1898/Blockbusting_Success_for_Mobile_Cinema_Tickets

Polylab. (1998, April 30). WAP Architecture. Retrieved Feb, 21, 2008, from
<http://polylab.sfu.ca/spacesystems/teach/wireless/wap/documents/SPEC-WAPArch-19980430.pdf>

Grace N. and Paul A. (2006, March). E-Ticketing strategy and Implementation in an open access system: The case of Deutsche Bahn. Retrieved Feb, 22, 2008, from
<http://www.insyl.unisa.edu.au/publications/working-papers/2006-08.pdf>

wordnet. (2006). Definitions for ticket. Retrieved Feb, 15, 2008, from
<http://wordnet.princeton.edu/>

Dan N. (2006, November). E-ticketing implementation in Africa. Retrieved Feb, 17, 2008, from
http://www.novatech2006-proinvest.org/download/4-Dan_MALANGA_AFRAA.pps#284,1, E-Ticketing implementation in Africa

Goliath. (2007, July). Airline Finance News- North America. Retrieved Feb, 23, 2008, from
http://goliath.ecnext.com/coms2/gi_0199-6747912/Airline-Finance-News-North-America.html#abstract

Wilson H. (2000, February). Wireless application Protocol. Retrieved Feb, 5, 2008, from

http://webtp.eecs.berkeley.edu/meetings/wap_intro.ppt