

Design of Mobile Reservation for Go Kart Driving Application

In UUM

By

Mohamed Ali Salem Shrif

(800246)

Universiti Utara Malaysia, 2009

All rights reserved.





**KOLEJ SASTERA DAN SAINS  
(College of Arts and Sciences)  
Universiti Utara Malaysia**

**PERAKUAN KERJA KERTAS PROJEK  
(Certificate of Project Paper)**

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

**MOHAMED ALI SALEM SHRIF  
(800246)**

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

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

**DESIGN OF MOBILE RESERVATION FOR GO KART  
DRIVING APPLICATION IN UUM**

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 SHEIK OSMAN**

Tandatangan  
(Signature) : Rozaini

Tarikh  
(Date) : 12 May 2019

## PERMISSION TO USE

In presenting this thesis in partial fulfilment 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 the Graduate School. 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 Graduate School  
College of Arts and Sciences  
Universiti Utara Malaysia  
06010 UUM Sintok  
Kedah Darul Aman.

## ABSTRACT

Mobile reservation has been popular worldwide. As it has become ubiquitous and customer can make a call from anytime to get transactions and the other facility of mobile phone is its mobility that makes it available anywhere. Mobile phone market shares have been dramatically make up, mobile commerce attracts variously companies, such as mobile handset manufacturers, mobile operators, financial institute, and several developers endeavouring, to develop technologies to generate added values for their mobile sphere. This study set out to identify requirements for Go Kart reservation system. The requirements identified has been documented and modelled in UML diagrammed, and validated with a prototype.

## ACKNOWLEDGEMENT

*By the Name of Allah, the Most Gracious and the Most Merciful*

First, I would like to express my appreciation to Allah, the Most Merciful and, the Most Compassionate who has granted me the ability and willing to start and complete this study. I do pray to His Greatness to inspire and enable me to continue the work for the benefits of humanity.

My most profound thankfulness goes to my supervisor Associate Prof. Dr. Wan Rozaini Bt Sheik Osman for her creativity, encouragement and guidance.

Last but not least, I wish to thank all my dearest family members, especially Dad, Mum, and my great brothers and sister for being by my side since I left home. Also I would like to thank my lecturers and friends who have given me emotional support during my study.

Thank you UUM.

## TABLE OF CONTENT

PERMISSION TO USE.....	i
ABSTRACT .....	ii
ACKNOWLEDGEMENT .....	iii
TABLE OF CONTENTS.....	iv
LIST OF TABLES .....	vii
LIST OF FIGURES .....	viii
LIST OF ABBREVIATIONS .....	ix
CHAPTER 1: INTRODUCTION .....	1
1.1Background.....	3
1.2 Problem Statement.....	3
1.3 Research Questions.....	3
1.4 Research Objectives.....	4
1.5 Scope Of The Study .....	4
CHAPTER 2:LITERATURE REVIEW .....	5
2.1 Mobile Application .....	5
2.2 Mobile Technology.....	5
2.2.1 Mobile Phones.....	6
2.2.2 Personal Digital Assistant (PDAs).....	7
2. World Wide Web .....	8
2.4 Testing a Website .....	8
2.4.1 Web based Requirement .....	9
2.5 Design of UML (Unified Modelling Language).....	10
2.5.1 The Definition of UML .....	10
2.5.2 UML Diagrams ireless Markup Language (WML).....	11
2.6 Go-Kart .....	12

<b>CHAPTER 3:DEVELOPMENT METHODOLOGY .....</b>	14
3.1 Research Design.....	14
3.2 Research Methodology.....	16
• Phase 1: Awareness Of The Problem.....	16
• Phase 2: Suggestion.....	16
• Phase 3: Development .....	16
• Phase 4 and 5: Evaluation and Conclusion .....	16
• Usability testing.....	17
• Conclusion.....	17
3.3       Significance of the Online Reservation System:.....	17
<b>CHAPTER 4: . RESULT AND DISCUSSION.....</b>	18
4.1 System Functionality (Conceptual View) .....	18
4.2.1 Use Case Diagram.....	18
4.2.2 Use Case Specification .....	19
4.2.2.1 Customer Use Case Specification .....	19
4.2.3 Class Diagram.....	26
4.2.4 Sequence Diagram.....	28
4.3 Review of Go-kart mobile application in UUM.....	29
4.4 Design user requirement.....	44
4.5 Prototype Evaluation Based on Survey Results.....	45
4.5.2 Usability Testing.....	45
4.5.3 Customer Mobile Reservation Task .....	46
4.6 Summary .....	48
4.7 Result of Research Design Method.....	48
4.7.1 result of awareness of the problem.....	48
4.7.2 result of suggestion of the problem.....	49
4.7.3 result of the development .....	49
4.7.4 result of the evaluation .....	49
4.7.5 result of conclusion.....	50

<b>CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>51</b>
5.1 Conclusion .....	51
5.2 Recommendations .....	53
5.3 Suggestion for further Research .....	53
<b>REFERENCES .....</b>	<b>54</b>
<b>APPENDIXA: QUESTIONNAIRE .....</b>	<b>57</b>
<b>APPENDIXC .....</b>	<b>60</b>

## LIST OF TABLES

NO	TITLE	PAGE
4.1	Item for the Questionnaire to Identify User Requirement	44
4.2	Respondents Perception on Mobile Criteria	45
4.3	Respondents Perception on Mobile Reservation	47

## LIST OF ABBREVIATIONS

HTTP	Hypertext Transfer Protocol
ICT	Information and Communications Technology
IDE	Integrated Development Environment
PDA	Personal Digital Assistant
POTS	Plain Old Telephone Service
SMS	Short Message Service
UML	Unified Modelling Language
WAP	Wireless Application Protocol
WML	Wireless Markup Language
WWW	World Wide Web

## **CHAPTER ONE**

### **INTRODUCTION**

This chapter briefly explains the background of the study, in which a discussion will be held about the utilizing of mobile technology in developing online mobile reservation service to help University Utara Malaysia students to access online mobile reservation. The problem statement, objectives, significance and scope of the study will also be introduced.

#### **1.1 BACKGROUND OF THE STUDY**

University Utara Malaysia provides several facilities for sports and recreational activities for all UUM's students and staff as a part of the objective to develop a healthy community physically and mentally. The facilities include an Olympic-size swimming pool, a mini stadium with a running track, an archery range, a badminton hall, tennis courts, basketball courts, volleyball courts, rugby, hockey, softball, handball, netball and football fields, and a 9-hole golf course. Some of the facilities are also provided at every residential hall. The University Utara Malaysia also provides other recreational facilities for canoeing, jogging, bicycling, jungle tracking, climbing, abseiling and camping (University Utara Malaysia, 2008).

UUM is the only university in Malaysia that has a Go-Kart circuit and an equestrian centre as well as an impressive 9-hole golf course. (University Utara Malaysia, 2008).

The contents of  
the thesis is for  
internal user  
only

## REFERENCES

A garwal, R., Ghosh, B., Banerjee, S., & Kishore, S. (2000). Ensuring WebSite Quality: A case study. (IEEE), 665-670.

Ambler, & William, S. (2004). The Object Primer: Agile Model Driven Development *with UML 2.*: Cambridge University Press.

Andrews, T., Curbura, F., Dolakia, H., J. Goland, Klein, J., Leymann, F., et al. (2003). Business Process Execution Language for Web Services.

Arch-int, S., & Batanovv, D. N. (2003). Development of industrial information systems on the Web using business components. 50(Feb, 2), 231 – 250.

Atkinson, R. J. (1997). Toward a More Secure Internet. (IEEE Computer), 57-61.

Bemers-Lee, T. (1996). “WWW: Past, Present, and Future. (IEEE Software), 69-77.

Bieber, M., & Vitali, F. (1997). Toward Support for Hypermedia on the World Wide Web. (IEEE Computer), 62-70.

Bruno, G., & Agarwal, R. (1997). Modeling the Enterprise Engineering Environment. (IEEE Transactions on Engineering Management), 20-30.

Carrera, D., Guitart, J., Torres, J., Ayguadé, E., & Labarta, J. (2003). Complete Instrumentation Requirements for Performance Analysis of Web Based Technologies.

Castro, V. d., Marcos, E., & Cáceres, P. (2004). *A User Service Oriented Method to Model Web Information Systems*. Paper presented at the Proceedings of the 5th Conference on Web Information Systems Engineering.

Chonoles, Jesse, M., & Schardt, J. A. (2003). *UML 2 for Dummies*.: Wiley Publishing.

Coad, Peter, Lefebvre, E., & Luca, J. D. (1999). *Java Modeling In Color With UML: Enterprise Components and Process*.: Prentice Hall.

discoverahobby. (2009). Extreme Sports : Learn Go Kart Racing [Electronic Version]. Retrieved 9/1/09 from <http://www.discoverahobby.com/learngokarts.htm>.

Fowler, & Martin. (2004). *UML Distilled: A Brief Guide to the Standard Object Modeling Language*, : Addison-Wesley

Graham, S., Simenov, S., Boubez, T., G. Daniels, Davis, D., Nakamura, Y., et al. (2001). *Building Web Services with Java: Making Sense of XML, SOAP, WSDL and UDDI*.: SAMS.

Gregg, D., U. Kulkarni, et al. (2001). Understanding the Philosophical Underpinnings of Software Engineering Research in Information Systems. (*Information Systems Frontiers*), 169-183.

Hamid, S. H. A., Pei, T. Y., & Jomhari, N. (2003). Object Oriented analysis and UML Design in the Development of Accommodation Service System.

Helsel, C., & Cullen, K. (2006). Online Group and Meeting Planning.

Hevner, A., March, S., Park, J., & Ram, S. (2004). Design Science in Information Systems Research. (*MIS Quarterly*), 75-105.

Khalaf, R., Mukhi, N., & Weeravarana., S. (2004). Service Oriented Composition in BPEL4WS.

Krueger, C. W. (1992). Software Reuse. (ACM Computer Surveys), 131-183.

Lance N. Ulanoff, e. a. (1996, Sep, 10). Build Your Own WebSite. *PC MAGAZINE*,

Lemieux, M. (2005). The Future of Web Design is Content Management! [Electronic Version]. Retrieved Feb, 8, 2008 from <http://www.webpronews.com/printable.php>

Maglogiannis, I., Kormentzas, G., Rouskasa, A., Vergadosa, D., & Panagiotarakis, N. (2003). An integrated platform for providing ship management, tourist information and booking services.

March, S., & Smith, G. (1995). Design and Natural Science Research on Information Technology. 251-266.

Marshall, C. C., & Shipnian, F. M. (1996). "Spatial Hypertext: Designing for Change. *Vol. 38, No. 8*(Communication of The ACM), 88-97.

Mowat, B. (2003). Exploding myths: online travel spreads its tentacles.

Nielsen, J. (1993). Usability engineering.

Noruzzi, A. (2004). Introduction to Webology [Electronic Version], 1. Retrieved Feb, 3 2008 from <http://www.webology.ir/2004/v1n1/a1.html>.

Nunamaker, J. F., & Chen, M. (1990). Systems development in information systems research. (IEEE), 631-639.

O'Leary, D. E. (1997). The Intemet, Intranets, and the AI Renaissance. (IEEE Computer),

Orlikowski, W. J., & Iacono, C. S. (2001). Research Commentary: Desperately Seeking

the “IT” in IT Research—A Call to Theorizing the IT Artifact. *12*(Information Systems Research), 121-134.

Polo, L. (2003). World Wide Web Technology Architecture: A Conceptual Analysis [Electronic Version]. Retrieved Jan 8 from <http://newdevices.com/publicaciones/www/>.

Purao, S. (2002). Design Research in the Technology of Information Systems: Truth or Dare. (GSU Department of CIS Working Paper).

Souer, J., Weerd, I. v. d., Versendaal, J., & Brinkkemper, S. (2005). Situational Requirements Engineering for the Development of Content Management System-based Web Applications.

Troyer, de, O. M. F., & Leune, C. J. (1998). WSDM: a user centered design method for Web sites. *30*(Apr 1-7), 205 – 212.

UNIVERSITIUTARAMALAYSIA. (2008). STUDENT GUIDE 2008/2009 SESSION. (Admission, Records and Promotion Unit Academic Affairs Department Universiti Utara Malaysia). (*Libber Quarterly Volume 18 Issue 2 2008*)

Vaughan-Nichols, S. J. (1997). Switching to a Faster Internet. (IEEE Computer), 31-32.

Whittaker, J. A. (2000). What is Software Testing? And Why is it so hard. (IEEE ([www.eatnplay.com](http://www.eatnplay.com))

Software), 70-79. Wikipedia. (2008). Kart racing. Retrieved January, 9 from [http://en.wikipedia.org/wiki/Go\\_kart](http://en.wikipedia.org/wiki/Go_kart) Yadav, R. (2007). UML Guide v2.1 [Electronic Version], 1-10. Retrieved March, 3 from <http://devmentor.org/references/uml/uml.htm>.