E-TOUR GUIDE AND ITINERARY PLANNER for Malacca

HO POI YEE

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

BORANG PENGESAHAN STATUS TESIS

JUDUL : E-Tour Guide and Itinerary Planner for Malacca (TGIP)

SESI PENGAJIAN : 2010/2011

Saya Ho Poi Yee mengaku membenarkan tesis (PSM/Sarjana/Doktor Falsafah) ini disimpan di Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dengan syaratsyarat kegunaan seperti berikut:

- 1. Tesis dan projek adalah hakmilik Universiti Teknikal Malaysia Melaka.
- 2. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan untuk tujuan pengajian sahaja.
- 3. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan tesis ini sebagai bahan pertukaran antara institusi pengajian tinggi.

4. ** Sila tandakan (/)

SULIT (Mengandungi maklumat yang berdarjah

> keselamatan atau kepentingan Malaysia seperti yang termaktub di dalam AKTA

RAHSIA RASMI 1972)

TERHAD (Mengandungi maklumat TERHAD yang

telah ditentukan oleh organisasi/badan di

mana penyelidikan dijalankan)

TIDAK TERHAD

(TANDA TANGAN PENULIS)

Alamat Tetap: No.3, Lorong Berkat, Desa LawanKuda.

31600 Gopeng, Perak.

Tarikh: 8/7/2011

KASTURI KANCHYMALAY

TANGAN PENYELIA)

KASTURI KANCHYMALAY

Pensyarah

Jabatan Kejuruteraan Perisian Fakulti Teknologi Maklumat Dan Komunikasi

Tarikh:

CATATAN

: * Tesis dimaksudkan sebagai Laporan Akhir Projek Sarjana Muda

** Jika tesis ini SULIT atau TERHAD, sila lampirkan surat daripada pihak berkuasa.

E-TOUR GUIDE AND ITINERARY PLANNER for Malacca

1	H	\cap	P	\mathbf{C}	T	γ	71	F.I	F

This report is submitted in partial fulfillment of the requirements for the Bachelor of Computer Science (Software Development)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY UNIVERSITI TEKNIKAL MALAYSIA MELAKA

DECLARATION

I hereby declare that this project report entitled

E-Tour Guide and Itinerary Planner

is written by my me and is my own effort and that no part has been plagiarized without citations.

STUDENT : DATE: \$\frac{1}{2011}

SUPERVISOR : DATE: \$\frac{1}{2011}

(KASTURI KANCHYMALAY)

KASTURI KANCHYMALAY

Pensyarah

Jabatan Kejuruteraan Perisian

Fakulti Teknologi Maklumat Dan Komunikasi

Universiti Teknikal Malaysia Meiaka

DEDICATION

To my beloved family.

To my respected supervisor.

To my best friend.

ACKNOWLEDGEMENTS

I would like to thank my supervisor, Pn.Kasturi Kanchymalay, whose encouragement, guidance and support from initial to the final level enabled me to develop and complete this project successfully.

I would also like to thank my friends, Chee Keen and Poi Ling who always gives me a lot of ideas and comments throughout the development of this project.

And last, I would like to thank my family who always giving support and motivation to me.

ABSTRACT

Malacca state known for its historical past and rich in heritage is a popular tourism destination among international and domestic tourist. Tourism industry has become the second important economic sector for Malacca state. Nowadays, people are more dependent in their mobile devices. Advancements of mobile technology have created an opportunity for developer to combine mobile technology with common activities. E-Tour Guide and Itinerary Planner is an application which combines the mobile technology and tourism, which is developed specially for Malacca. This project analyzes traditional tour guide and itinerary planning process, identify problems of traditional method and design a mobile-based tour guide with all information of attractions in Malacca and provide an interactive itinerary planner for tourist who visits to Malacca. This project study on using Jquery and CSS to develop interactive map of Malacca and study on algorithm to auto generate itinerary based on time constraint of user.

ABSTRAK

Negeri Melaka yang terkenal dengan sejarah masa lalu dan kaya dengan warisan merupakan destinasi pelancongan popular di kalangan pelancong antarabangsa dan domestik. Industri pelancongan telah menjadi sector ekonomi yang kedua terpenting di Negeri Melaka. Kini, orang ramai lebih bergantung kepada peranti mudah alih mereka. Kemajuan teknologi mudah alih telah mencipta peluang kepada pemaju untuk menggabungkan teknologi mudah alih dengan aktiviti-aktiviti biasa. E-Tour Guide and Itinerary Planner yang dibangunkan untuk Negeri Melaka adalah satu aplikasi yang menggabungkan teknologi mudah alih dan pelancongan. Projek ini menganalisis panduan pelancongan tradisonal dan proses merancang jadual pelancongan, mengenalpasti masalah kaedah tradisional dan reka satu panduan pelancongan berdasarkan maklumat tarikan di Melaka dan perancangan jadual pelancong yang interaktif untuk pelancong yang melawat ke Melaka. Kajian projek ini menggunakan Jquery dan CSS untuk membangunkan peta interaktif Melaka dan membuat kajian mengenai algoritma untuk auto menjana jadual berdasarkan masa pengguna.

TABLE OF CONTENTS

CHAPTER	SUBJECT	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENT	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xii
	LIST OF FIGURES	xvi
	LIST OF ABBREVIATIONS	xviii
	LIST OF ATTACHMENTS	xix
CHAPTER I	INTRODUCTION	
	1.1 Project Background	1
•	1.2 Problem Statements	3
	1.3 Objective	4
	1.4 Scope	5
	1.5 Project Significance	5
	1.6 Expected Output	6
	1.7 Conclusion	6

CHAPTER II	LITERATURE REVIEW AND	
	PROJECT METHODOLOGY	
	2.1 Introduction	7
	2.2 Facts and Findings	8
	2.2.1 Domain	8
	2.2.2 Existing System	9
	2.2.3 Technique	13
	2.3 Project Methodology	13
	2.4 Project Requirements	14
	2.4.1 Software Requirement	14
	2.4.2 Hardware Requirement	17
	2.4.3 Other Requirements	17
	2.5 Project Schedule and Milestones	18
	2.6 Conclusion	18
		•
CHAPTER III	ANALYSIS	
	3.1 Introduction	19
	3.2 Problem Analysis	20
	3.2.1 Analysis of Current System	20
	3.2.2 Problem Statement	20
	3.3 Requirement Analysis	21
	3.3.1 Data Requirement	21
	3.3.2 Functional Requirement	23
	3.3.3 Non-Functional Requirement	23
	3.3.4 Other Requirements	24
	3.3.4.1 Software	24
	Requirement	
	3.3.4.2 Hardware	26
	Requirement	
	3.3.4.3 Network Requirement	27

	3.4 Conclusion	27
CHAPTER IV	DESIGN	
CHAITERIV	4.1 Introduction	28
	4.2 High-Level Design	29
	4.2.1 System Architecture	29
	4.2.1.1 Architecture View	29
	4.2.1.2 Dynamic View	30
	4.2.1.3 Static View	31
	4.2.2 User Interface Design	32
	4.2.2.1 Navigation Design	32
	4.2.2.2 Input Design	34
	4.2.2.3 Output Design	38
	4.2.3 Database Design	40
	4.2.3.1 Conceptual and	40
	Logical Database	
	Design	
	4.2.3.1.1 Entity	40
	Relationship	
	Diagram	
	4.2.3.1.2 Business	41
	Rule	
	4.2.3.1.3 Data	42
	Dictionary	
	4.3 Detailed Design	47
	4.3.1 Software Design	47
	4.3.2 Physical Database Design	51
	4.4 Conclusion	54
CHAPTER V	IMPLEMENTATION	
	5.1 Introduction	56

	5.2 Software Development	57
	Environment Setup	
	5.3 Software Configuration	59
	Management	
	5.3.1 Configuration Environment	59
	Setup	
	5.3.2 Version Control Procedure	59
	5.4 Implementation Status	60
	5.5 Conclusion	62
CHAPTER VI	TESTING	
	6.1 Introduction	63
	6.2 Test Plan	64
	6.2.1 Test Organization	64
	6.2.2 Test Environment	65
	6.2.3 Test Schedule	65
	6.3 Test Strategy	66
	6.3.1 Classes of Tests	66
	6.4 Test Design	67
	6.4.1 Test Description	67
	6.4.1.1 Unit Testing Test	67
	Description	
	6.4.1.2 Integration Testing Test	70
	Description	
	6.4.2 Test Data	71
	6.4.2.1 Test Data of Unit Testing	71
	6.4.2.2 Test Data of Integration	72
	Testing	
CHAPTER VIII	6.5 Test Results and Analysis	73
	6.5.1 Test Result of Unit Testing	73
	6.5.2 Test Result of Integration	77

Testing	
6.5.3 Test Analysis	78
6.6 Conclusion	79
PROJECT CONCLUSION	
7.0 Introduction	80
7.1 Observation on Weaknesses and	80
Strengths	
7.2 Propositions for Improvement	81
7.3 Contribution	82
7.4 Conclusion	82

LIST OF TABLES

TABLE	TITLE	PAGE
Table 1	Comparison of functionality of existing system	12
Table 2	Non-functional requirements description for TGIP	23
Table 3	Tools and validation rule for plan itinerary	35
Table 4	Tools and validation rule for convert currency page	37
Table 5	Data dictionary table of Attraction	42
Table 6	Data dictionary table of table Hotel	43
Table 7	Data dictionary table of table Restaurant	44

Table 8	Data dictionary table of table Shopping Outlet	45
Table 9	Data dictionary table of table Ticket	46
Table 10	Data dictionary table of table News	46
Table 11	Table of version control of TGIP	60
Table 12	Table of implementation status for view map module	60
Table 13	Table of implementation status for view weather report module	61
Table 14	Table of implementation status for convert currency module	61
Table 15	Table of implementation status for view news and events module	61
Table 16	Table of implementation status for plan itinerary module	61
Table 17	Table of implementation status for view itinerary module	62
Table 18	Table of testing stage and individual involved	64
Table 19	Table of hardware and software	65

configuration of TGIP

Table 20	Table of test schedule of TGIP	66
Table 21	Table of test description for view map module	67
Table 22	Table of test description for view weather report module	68
Table 23	Table of test description for convert currency module	68
Table 24	Table of test description for view news and events module	69
Table 25	Table of test description for plan itinerary module	69
Table 26	Table of test description for view itinerary module	70
Table 27	Test description of integration testing for view weather report module	70
Table 28	Test description of integration testing for convert currency module	71
Table 29	Test data of unit testing for view weather report module	71

Table 30	Test data of unit testing for convert currency module	72
Table 31	Test data of Integration Testing for view weather report module	72
Table 32	Test data of Integration Testing for convert currency module	73
Table 33	Test result of Unit testing	73
Table 34	Test result of Unit Testing retesting	76
Table 35	Test result of Integration Testing	77

LIST OF FIGURES

DIAGRAM	TITLE	PAGE
Figure 1	Screen shot of Handheld Charleston	10
	Tour Guide and Online Interactive	
	Trip Planner	
Figure 2	Mobile Tourist Guide screen shots	11
Figure 3	Tour Guide in Hand screen shot	12
Figure 4	Entity relationship diagram for TGIP	22
Figure 5	3-tier architecture of TGIP	30
Figure 6	Class diagram of TGIP	31
Figure 7	Navigation design of TGIP	33
Figure 8	Input design for plan itinerary	34
Figure 9	Input design rule for convert currency	37

Figure 10	Output design for location detailed information	38
Figure 11	Output design for forecast weather report	39
Figure 12	Entity Relationship Diagram of TGIP	40
Figure 13	Deployment view of TGIP	57
Figure 14	Software Development Library	58

LIST OF ABBREVIATIONS

TGIP Tour Guide and Itinerary Planner

PDA Personal Digital Assistant

GIS Geographical Information System

OOAD Object Oriented Analysis and Design

OOD Object Oriented Design

OOA Object Oriented Analysis

XML Extensible Markup Language

HTML Hypertext Markup Language

JSON JavaScript Object Notation

UML Unified Modeling Language

ERD Entity Relationship Diagram

SRS Software Requirement Specification

DDL Data Definition Language

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
APPENDIX A	Project Proposal	86
APPENDIX B	Gantt Chart	95
APPENDIX C	Software Requirement Specification	98
APPENDIX D	User Manual	156

CHAPTER I

INTRODUCTION

1.1 Project Background

Tourism industry in Malaysia has been growing very rapidly in terms of visitor arrivals and performed extremely well in the Malaysian economy where 23.6 million arrivals to Malaysia and generating RM53.4 billion to Malaysia income in 2009 (Tourism Malaysia, 2010). Malacca known for its historical past and rich in heritage is a popular tourism destination among international and domestic tourists. Tourism is the second most important economic sector for Malacca state. Tourism industry in Malacca performed well where 8.9 million tourist arrivals in 2009 and generating RM4.5 billion revenue (MRails International Sdn Bhd, 2010).

Currently, most of the Malacca tourism guides can be found in book, magazine and online web pages such as www.melakamalaysiatravel.com, www.melaka.net and many others. However, online web pages tourism guide just provide guidance and tourist have to put every pieces of information together, jot it down in notebook or type it in word, print it out and for sure need to bring it along when travelling. Besides that, tourism guide in book and magazine are considered not quite convenient as the book or magazine is heavy for tourist to bring along when travelling and any information about the tourist attractions cannot be updated. For example, a tourist may feel disappointed when he/she arrived at particular place of attraction while that particular place of

attraction is under construction. Besides that, a tourist may sees a beautiful historical building in town and would like to know when it was built and its architectural design and historical.

The traditional trip planning method most rely on offline tools such as paper and pencil to record every location they wish to visit. This traditional method seems like lack of location information integration in various aspects. Besides that, it is a tedious process when planning a trip especially for those who have a hectic lifestyle.

Advancements in technology have changed the way people travel and plan trips. Countries like France, Korea and Hong Kong has experienced and very active in developing mobile application for tourist with the purpose to guide tourist when travelling to their country. Based on the initiative and inspiration of this type of application, this project is mean to propose an application named as E-Tour Guide and Itinerary Planner for Malacca for tourism industry in Malacca.

This application is considered new to tourism industry in Malacca as mentioned above where the entire Malacca tourism guide is written in books or web pages. The target user of this application is tourist either international tourist or domestic tourist with smart phone. The main function of this application is to provide an interactive map which guide tourist in finding place of interest such as restaurant, hotel and others and provide information such as detail description of a building or location.

Besides that, this application provides an itinerary planner function for tourist to plan their itinerary based on location preferences and time constraint. In addition, this application also provides news and events of Malacca such as Anniversary of UNESCO World Heritage City Celebration, Melaka Tourism Street Carnival and many others for tourist information so that they can grab the opportunity to participate and to know more about Malacca.

This application also provides a forecast weather report to tourist as a reference in planning their itinerary in order to avoid having outdoor activities in rain day. In addition, this application will provide a currency converter which ease tourist when calculating the currency exchange. This application is supported by backend modules which used by administrator of tourism Malacca. The backend modules include manage information of attractions and manage news and events of Malacca.

1.2 Problem Statements

The current tour guide is written in a form of books, magazine or web pages which is considered as not convenient for tourist. Book or magazine is heavy and tedious for tourist to bring along when travelling. Web page is not flexible enough where user cannot edit or plan their schedule.

In addition, tourist cannot get later or most updated information through booklet tour guide. In addition, traditional trip planning method is not effective and interactive enough as tourist have to bring along the paper form of itinerary.

Besides that, tourist also hard to get the forecast weather when travelling around Malacca and they need to browse the web pages to search weather forecast report. For example, they cannot plan well for outdoor activities such as hill climbing without knowing the forecast weather. As travel from other country, currency is another issue for tourist as they need to know the exchange rate in order they can plan well for their budget. For example, when buying a souvenir at a souvenir shop in Jonker Street, tourist has to calculate the converted currency by themselves and sometimes may make mistake.