### **ONLINE TRAVEL ASSISTANT**

BY

TAN MEI YI

### A REPORT

### SUBMITTED TO

Universiti Tunku Abdul Rahman in partial fulfillment of the requirements for the degree of BACHELOR OF COMPUTER SCIENCE (HONS) Faculty of Information and Communication Technology (Perak Campus)

MAY 2013

## **DECLARATION OF ORIGINALITY**

I declare that this report entitled "Online Travel Assistant" is my own work except as cited in the references. The report has not been accepted for any degree and is not being submitted concurrently in candidature for any degree or other award.

Signature :

Name : Tan Mei Yi

Date : 19<sup>th</sup> August 2013

### ACKNOWLEDGEMENTS

I would like to express my sincere thanks and appreciation to my supervisor, Ms. Lai Siew Cheng who has given me this bright opportunity to engage in this website development project. In this project, Ms Lai devoted a great deal of effort. From the modification of the first draft to the final report. A million thanks to you. This project would not have been possible without the expert advice and suggestion of Ms Lai. Thank you for the suggestions and invaluable information that you provided and your willingness to contribute your time to this effort.

Besides that, I must say thanks to my parents and my family for their love, support and continuous encouragement throughout the course.

Beyond the professional involvement in this project, my friends were also quite influential in this work. Thanks you all for giving me some precious opinion, ideas, comments and resources. Thank you for being there to listen to my gripe about my work. And finally thanks for the many people who were there to lend a hand along the way. Thanks you.

### ABSTRACT

As tourism has become one of the most promising industries in the world, tourism websites have become increasingly popular. Since the information technology (IT) grows rapidly, website is another alternative to boost tourism industry. A tourism website which provides adequate information can help tourists to understand more about the country. With the help of tourism website, it complements the conventional way where people get travel information through brochures or travel agents. Additionally, tourism can be promoted more efficient and effective.

This thesis is about why and how to develop a tourism website for helping tourists in gaining sufficient information and understanding of a travel destination before they travel. As part of review to complete this project, the limitation of existing websites, problems statement, methodology adopted for this project, questionnaire that is needed to collect related data and area of future research are also discussed. The purpose to develop this project- Online Travel Assistant is to provide an easy access of comprehensive information about attractions in Peninsula Malaysia and provide some features that may help tourists to plan their trip such as budget estimating feature and path planning feature. The target audience for this tourism website is people from all over the world that would like to visit Peninsula Malaysia.

# TABLE OF CONTENTS

TITLE	i
DECLARATION OF ORIGINALITY	ii
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	xvi
LIST OF TABLES	xix
LIST OF ABBREVIATIONS	xxii

# **CHAPTER 1: INTRODUCTION**

1.0	Introduction	1
1.1	Motivation and Problem Statement	1
1.2	Project Scope	2
1.3	Project Objectives	3
1.4	Impact, Significance and Contribution	4
1.5	Background Information	5
1.6	Summary	6

### **CHAPTER 2: LITERATURE REVIEW**

2.0	Introduction		7
2.1	2.1 Similar Existing Websites		7
	2.1.1	Tourism Malaysia Official Website	7
	2.1.2	Malaysia Travel Guide	8
	2.1.3	Virtual Malaysia.com	9
	2.1.4	Fantastic Malaysia	11
	2.1.5	SOTA Smart Online Travel Assistant	12
	2.1.6	Comparison between Five Similar Websites	13
	2.1.7	Proposed Solution	14

Faculty of Information and Communication Technology (Perak Campus), UTAR.

2.2	Metho	odologies Available	15
	2.2.1	Waterfall Development	15
	2.2.2	Iterative Development	15
	2.2.3	Evolutionary Prototyping (RAD)	16
	2.2.4	Spiral Model	17
	2.2.5	Extreme Prototyping (XP)	17
	2.2.6	Comparison between Methodologies	18
2.3	Travel	lling Salesman Problem (TSP)	19
	2.3.1	Local Search Algorithm (2-opt Algorithm)	20
	2.3.2	Brute Force Algorithm	21
	2.3.3	Greedy Algorithm (Nearest Neighbor Algorithm)	21
2.4	Googl	e API	22
	2.4.1	Google Finance API	22
	2.4.2	Google Maps API	22
2.5	Devel	opment Tools	25
	2.5.1	ASP.NET	25
	2.5.2	PHP	25
	2.5.3	Comparison of ASP.NET and PHP	25
2.6	Fact F	Vinding	27
	2.6.1	Existing Documentation	27
	2.6.2	Research and Site Visits	27
	2.6.3	Questionnaires	27
2.7	Data (	Collection	28
2.8	Summ	nary	30
<b>CHAPTER 3</b>	: MET	HODOLOGY	

3.0	Introduction	31
3.1	Methodology Chosen	31
3.2	Application of Chosen Methodology	32
3.3	Development Tool Chosen	34

Faculty of Information and Communication Technology (Perak Campus), UTAR.

3.4	Implementation Issue and Challenges		35
3.5	Timel	ine	35
3.6	Requi	rement Specification	35
	3.6.1	User Requirements	36
	3.6.2	System Performance Definition	37
	3.6.3	Design and Verification Plan	39
3.7	Summ	nary	40

# **CHAPTER 4: SYSTEM DESIGN**

4.0	Introdu	action	41
4.1	Interfa	ce Conceptual Design	41
4.2	Site An	rchitecture	41
4.3	User In	nterface Design	42
	4.3.1	Default Master Page Design	43
	4.3.2	Default Page/ Home Page Design	44
	4.3.3	Nested Master Page Design	44
	4.3.4	Details Page Design	45
	4.3.5	Attractions Information Page Design	45
	4.3.6	Photo Gallery Page Design	46
	4.3.7	Accommodation Page Design	47
	4.3.8	Login Page Design	47
	4.3.9	Register Page Design	48
	4.3.10	Forgot Password Page Design	48
	4.3.11	Change New Password Page Design	49
	4.3.12	Member Master Page Design	49
	4.3.13	Update Member Profile Page Design	50
	4.3.14	Check Currency Page Design	50
	4.3.15	Path Planning Page Design	51
	4.3.16	Search Nearby Places Page Design	51
	4.3.17	Search Type of Places Page Design	52

	4.3.18 Weather Forecast Page Design	52
	4.3.19 Budget Estimator Page Design	53
	4.3.20 Budget Planner Page Design	53
	4.3.21 Travel Budget Calculator Page Design	54
	4.3.22 View and Print Budget Record Page	54
	4.3.23 Submit Travel Tip Page Design	55
	4.3.24 Feedback Page Design	55
	4.3.25 Admin Master Page Design	56
	4.3.26 Update Admin Profile Page Design	56
	4.3.27 Add Admin Page Design	57
	4.3.28 View Feedback Page Design	57
	4.3.29 Manage Admin Accounts Page Design	58
	4.3.30 Manage Member Account Page Design	58
	4.3.31 Upload New Photos Page Design	59
	4.3.32 Edit Photo Information Page Design	59
	4.3.33 Add Attractions Information Page Design	60
	4.3.34 Edit Attraction Information Page Design	60
4.4	Use Case Diagram	61
4.5	Sequence Diagram	62
4.6	Database Design	70
	4.6.1 Entity Relationship Diagram (ERD)	70
	4.6.2 Data Dictionary	71
4.7	Summary	76
CHAPTER	<b>5: SYSTEM IMPLEMENTATION AND DEVELOPMENT</b>	ר -
5.0	Introduction	77
5.1	System Development	77
5.2	System Implementation	78
5.3	System Requirement	80
	5.3.1 Hardware Requirements	80

	5.3.2	Software Requirements	80
5.4	Archit	tectural Model- Logical Implementation	82
	5.4.1	Development Layer	82
	5.4.2	Client Layer	82
	5.4.3	Server Layer	83
	5.4.4	Web Services Layer	83
5.5	Online	e Travel Assistant Screenshot User Manual	83
5.6	Summ	nary	83

## **CHAPTER 6: SYSTEM TESTING**

6.0	Introd	Introduction		
6.1	Unit T	Sesting	84	
6.2	Test C	lase	84	
	6.2.1	Global Navigation Bar	84	
	6.2.2	Login/ Logout Page	87	
	6.2.3	Register Page	89	
	6.2.4	Attractions Page	92	
	6.2.5	Photo Gallery Page	93	
	6.2.6	Accommodation Page	93	
	6.2.7	Member/Admin Profile Page	94	
	6.2.8	Member Page Functionality	95	
	6.2.9	Admin Page Functionality	101	
6.3	Integr	ation Test Case	105	
6.4	Summary			

# **CHAPTER 7: CONCLUSION**

Introduction	106
Project Review	106
Achievement	107
Limitation	108
	Introduction Project Review Achievement Limitation

Bachelor of Computer Science (HONS)

Faculty of Information and Communication Technology (Perak Campus), UTAR.

7.4	Future Enhancement	109
7.5	Summary	110
REFERENC	ES	111
APPENDIX	Α	A-1
A-1	Comparison of Strengths and Weaknesses among	A-2
	Methodologies	
A-2	Comparison of the features of ASP.NET and PHP	A-4
A-3	Malaysia tourist arrival by country of nationality Mac 2012	A-7
A-4	Components of expenditure by domestic visitors in 2011	A-8
APPENDIX	В	<b>B-1</b>
B-1	Survey Questions	B-2
B-2	Analysis on the Importance of Tourism Website to	B-6
	Respondents	
	B-2-1 The Number of Respondents Visit Tourism Website before Travel	B-6
	B-2-2 The Reasons of Respondents Not Visit Tourism Website	B-6
	B-2-3 The Types of Respondents' Ways in Planning Trip	B-6
B-3	Analysis on the Importance of Different Types of Information	B-7
	B-3-1 Percentages of Respondents' Opinion in Identifying the	B-7
	Importance of Introduction to Country	
	B-3-2 Percentages of Respondents' Opinion in Identifying the	B-7
	Importance of Tourist Attractions	
	B-3-3 Percentages of Respondents' Opinion in Identifying the	B-7
	Importance of Travel Deals/Promotions	
	B-3-4 Percentages of Respondents' Opinion in Identifying the	B-8

Importance of Photo Gallery

	B-3-5	Percentages of Respondents' Opinion in Identifying the	B-8
		Importance of Video	
	B-3-6	Percentages of Respondents' Opinion in Identifying the	B-8
		Importance of Accommodation	
	B-3-7	Percentages of Respondents' Opinion in Identifying the	B-9
		Importance of Food	
	B-3-8	Percentages of Respondents' Opinion in Identifying the	B-9
		Importance of Culture	
	B-3-9	Percentages of Respondents' Opinion in Identifying the	B-9
		Importance of Events & Festival	
	B-3-10	Percentages of Respondents' Opinion in Identifying the	<b>B-10</b>
		Importance of Traveler Experience	
	B-3-11	Percentages of Respondents' Opinion in Identifying the	<b>B-10</b>
		Importance of Travel Agents	
	B-3-12	2 Percentages of Respondents' Opinion in Identifying the	<b>B-10</b>
		Importance of Contact Information	
B-4	Analys	sis on the Currency Converting Feature	<b>B-11</b>
	<b>B-4-1</b>	Percentages of Respondents Think Currency	<b>B-11</b>
		Conversion Feature Will Be Useful	
B-5	Analys	sis on the Budget Estimating Feature	B-12
	B-5-1	Percentages of Respondents Unable to Plan Budget	B-12
	B-5-2	Possible Reasons that Make Respondents Unable to	B-12
		Plan Budget Well	
	B-5-3	Types of expenses Respondents Will Include in Travel	B-12
		Budget	
	B-5-4	Percentages of Respondents Think Budget Estimation	B-13
		Feature Will Be Useful	

B-6	Analysis on the Common Problems Faced By Respondents		B-14
	B-6-1	Common Problems Faced by Respondents during	<b>B-14</b>
		vacation	
B-7	Analys	sis on the Path Planning Feature	B-15
	B-7-1	Percentages of Respondents Face Difficulties in	B-15
		Planning the Order of Place to Visit	
	B-7-2	Possible Reasons that Make Respondents Face Path	B-15
		Planning Difficulty	
	B-7-3	Percentages of Respondents Think the Path Planning	B-15
		Feature Will Be Helpful	
	A 1		D 16
В-8	Analys	sis on the Suggestion from Respondents	B-16
	B-8-1	Percentages of Respondents Think That There Is	B-16
		Additional Information Can Be Included	
	B-8-2	Additional Information Respondents Would Like to	B-16
		Include	
APPENDIX	С		C-1
C-1	Gantt	Chart	C-2
APPENDIX	D		D-1
D-1	– Use Ca	ase Description	D-1
21	D-1-1	Use Case Description for Register	D-2
	D-1-2	Use Case Description for Add Member	D-3
	D-1-3	Use Case Description for Login	D-4
	D-1-4	Use Case Description for Verification	 D-5
	D-1-5	Use Case Description for Show Error Message	D-6
	D-1-6	Use Case Description for Change Password	D-7

D-1-7 Use Case Description for Logout	D-8
D-1-8 Use Case Description for View Profile	D-9
D-1-9 Use Case Description for Update Profile	D-10
D-1-10 Use Case Description for Browse Attractions	D-11
D-1-11 Use Case Description for View Photo Gallery	D-12
D-1-12 Use Case Description for Search / Book Hotel	D-13
D-1-13 Use Case Description for Estimate Travel Budget	D-14
D-1-14 Use Case Description for Plan Budget	D-15
D-1-15 Use Case Description for Calculate Travel Budget	D-16
D-1-16 Use Case Description for Print Record	D-17
D-1-17 Use Case Description for Check Currency Exchange	D-18
Rate	
D-1-18 Use Case Description for Plan Travel Path.	D-19
D-1-19 Use Case Description for Search Places	D-20
D-1-20 Use Case Description for Check Weather Forecast	D-21
D-1-21 Use Case Description for Submit Travel Tip	D-22
D-1-22 Use Case Description for Give Feedback	D-23
D-1-23 Use Case Description for View Feedback	D-24
D-1-24 Use Case Description for Manage Admin Accounts	D-25
D-1-25 Use Case Description for Manage Member Accounts.	D-26
D-1-26 Use Case Description for Manage Photos Information	D-27
D-1-27 Use Case Description for Manage Attractions	D-28
Information	

E	<b>E-1</b>
Screenshots	E-2
E-1-1 Default Page/Home Page	E-2
E-1-2 Details Page	E-3
E-1-3 Attractions Information Page	E-3
E-1-4 Photo Gallery Page I	E-4
	EScreenshotsE-1-1Default Page/Home PageE-1-2Details PageE-1-3Attractions Information PageE-1-4Photo Gallery Page I

xiii

E-1-5 I	Photo Gallery Page II	E-4
E-1-6	Accommodation Page	E-5
E-1-7 I	Login Page - Member	E-5
E-1-8 I	Login Page - Admin	E-6
E-1-9 I	Register Page	E-6
E-1-10	Forgot Password Page	E-7
E-1-11	Change New Password Page	E-7
E-1-12	Update Member Profile Page	E-8
E-1-13	Check Currency Page	E-8
E-1-14	Budget Estimator Page	E-9
E-1-15	Budget Planner Page	E-10
E-1-16	Travel Budget Calculator Page	E-11
E-1-17	View and Print Budget Record Page	E-12
E-1-18	Path Planning Page	E-13
E-1-19	Search Nearby Places Page	E-13
E-1-20	Search Type of Places Page	E-14
E-1-21	Weather Forecast Page	E-14
E-1-22	Submit Travel Tip Page	E-15
E-1-23	Feedback Page	E-15
E-1-24	Update Admin Profile Page	E-16
E-1-25	Add Admin Page	E-16
E-1-26	View Feedback Page	E-17
E-1-27	Manage Admin Accounts Page	E-17
E-1-28	Manage Member Accounts Page	E-17
E-1-29	Upload New Photo Page	E-18
E-1-30	Edit Photo Information Page	E-18
E-1-31	Add Attractions Information Page	E-19
E-1-32	Edit Attractions Information Page	E-19

APPENDIX	F	F-1
F-1	User Manual	F-2
APPENDIX	G	G-1
G-1	Journal	G-2
APPENDIX	Н	H-1
	Turnitin Analysis	

# LIST OF FIGURES

Figure Number	Title	Page
Figure 2.1	The screenshot of Tourism Malaysia Official Website	8
Figure 2.2	The screenshot of Malaysia Travel Guide website	9
Figure 2.3	The screenshot of words overlap in the website	9
Figure 2.4	The screenshot of Virtual Malaysia.com.	10
Figure 2.5	The screenshot of Fantastic Malaysia website	11
Figure 2.6	The screenshot of SOTA Travel website	12
Figure 2.7	Waterfall Development Model	15
Figure 2.8	Iterative Development Model	15
Figure 2.9	Evolutionary Prototyping Development Model	16
Figure 2.10	Spiral Model	17
Figure 2.11	Extreme Programming Development Model	17
Figure 2.12	2-opt algorithm	20
Figure 2.13	Nearest Neighbor Algorithm	21
Figure 3.1	Evolutionary Prototyping Development Flow	32
Figure 4.1	Site Architecture of Home Page	41
Figure 4.2	Site Architecture of Member Page	41
Figure 4.3	Site Architecture of Admin Page	41
Figure 4.4	Master Page and Content Place Holder	42
Figure 4.5	Default Master Page Design	43
Figure 4.6	Default Page/ Home Page Design	44
Figure 4.7	Nested Master Page Design	44
Figure 4.8	Details Page Design	45
Figure 4.9	Attractions Information Page Design	45
Figure 4.10	Photo Gallery Page Design I	46
Figure 4.11	Photo Gallery Page Design II	46
Figure 4.12	Accommodation Page Design	47
Figure 4.13	Login Page Design	47

Figure 4.14	Register Page Design	48
Figure 4.15	Forgot Password Page	48
Figure 4.16	Change New Password Page Design	49
Figure 4.17	Member Master Page Design	49
Figure 4.18	Update Member Profile Page	50
Figure 4.19	Check Currency Page design	50
Figure 4.20	Path Planning Page Design	51
Figure 4.21	Search Nearby Places Page Design	51
Figure 4.22	Search Type of Places Page Design	52
Figure 4.23	Weather Forecast Page Design	52
Figure 4.24	Budget Estimator Page Design	53
Figure 4.25	Budget Planner Page Design	53
Figure 4.26	Travel Budget Calculator Page	54
Figure 4.27	View and Print Budget Record Page	54
Figure 4.28	Submit Travel Tip Page Design	55
Figure 4.29	Feedback Page Design	55
Figure 4.30	Admin Master Page Design	56
Figure 4.31	Update Admin Profile Page Design	56
Figure 4.32	Add Admin Page Design	57
Figure 4.33	View Feedback Page Design	57
Figure 4.34	Manage Admin Accounts Page Design	58
Figure 4.35	Manage Member Accounts Page Design	58
Figure 4.36	Upload New Photos Page Design	59
Figure 4.37	Edit Photo Information Page Design	59
Figure 4.38	Edit Attractions Information Page Design	60
Figure 4.39	Edit Attractions Information Page Design	60
Figure 4.40	Use Case Diagram	61
Figure 4.41	Sequence Diagram for view Home page, Attraction	62
	Information page, Photo Gallery page, and Feedback	
	page, Details page	

Figure 4.42	Sequence Diagram for search and book hotels	62
Figure 4.43	Sequence Diagram for User register	63
Figure 4.44	Sequence Diagram for User / Administrator logout	63
Figure 4.45	Sequence Diagram for User / Administrator login	64
Figure 4.46	Sequence Diagram for User / Administrator forgot	64
	password	65
Figure 4.47	Sequence Diagram for User / Administrator change	65
	password	
Figure 4.48	Sequence Diagram for User / Administrator view and	66
	update profile	
Figure 4.49	Sequence Diagram for check currency rate, plan path,	66
	search places, and check weather forecast	67
Figure 4.50	Sequence Diagram for post travel tips and feedback	67
Figure 4.51	Sequence Diagram for calculate travel budget	68
Figure 4.52	Sequence Diagram for estimate and plan budget	
Figure 4.53	Sequence Diagram for add admin accounts and add	68
	attraction information	69
Figure 4.54	Sequence Diagram for delete admin/member account	69
Figure 4.55	Sequence Diagram for upload new photos	
Figure 4.56	Sequence Diagram for update photo information and	70
	attractions information	78
Figure 4.57	Entity Relationship Diagram for Online Travel Assistant	79
Figure 5.1	How does SMTP works	
Figure 5.2	Search and Book Hotel	

# LIST OF TABLES

Table Number	Title	Page
Table 2.1	Comparing the Features of Five Similar Websites	13
Table 2.2	Comparative Analysis of Five Models	18
Table 2.3	Google Maps API Web Services	23
Table 2.4	Comparison of Strengths and Weaknesses between	21
	ASP.NET and PHP	
Table 4.1	Multiplicity	71
Table 4.2	admin entity - Store admin information	71
Table 4.3	member entity - Store member information	72
Table 4.4	place entity - Store attractions information	72
Table 4.5	photo entity - Store photos information	73
Table 4.6	feedback entity - Store feedback information	73
Table 4.7	traveltip entity - Store travel tips information	73
Table 4.8	budgetRecord entity - Store budget information saved by	74
	member	
Table 5.1	Hardware Requirements	81
Table 5.2	Software Requirements	81
Table 5.3	Logical Implementation	82
Table 6.1	Home page link	84
Table 6.2	Discover Malaysia page link	85
Table 6.3	Attractions page link	85
Table 6.4	Photo Gallery page link	85
Table 6.5	Accommodation page link	86
Table 6.6	Plan Your Trips page link	86
Table 6.7	Experience page link	86
Table 6.8	Login page link	87
Table 6.9	Member /Admin Login Success	87
Table 6.10	Member /Admin Login Failure	87
Table 6.11	Logout link	88

Bachelor of Computer Science (HONS)

Faculty of Information and Communication Technology (Perak Campus), UTAR.

Table 6.12	Remember Me checkbox	88
Table 6.13	Forgot Password page link	89
Table 6.14	Username textbox and Check Availability link	89
Table 6.15	Password textbox	90
Table 6.16	First Name, Last Name, Contact Number, Email, and	90
	Country textbox	
Table 6.17	"CAPTCHA" image textbox	91
Table 6.18	Registration Form	91
Table 6.19	Attractions' states page link	92
Table 6.20	"Back to Previous" link	92
Table 6.21	"View Image" link	92
Table 6.22	State's photo page link	93
Table 6.23	"Back to Gallery" link	93
Table 6.24	"Search" link	93
Table 6.25	View Profile page link	94
Table 6.26	Update Profile page link	94
Table 6.27	Change Password page link	95
Table 6.28	Check Currency page link	95
Table 6.29	Budget Estimator page link	96
Table 6.30	Budget Planner page link	96
Table 6.31	Travel Budget Calculator page link	97
Table 6.32	View Budget Record page link	97
Table 6.33	"Print" button in View Budget Record page	98
Table 6.34	Path Planning page link	98
Table 6.35	Submit a Travel Tip page link	99
Table 6.36	Feedback page link	99
Table 6.37	Search Places page link	100
Table 6.38	Check Weather Forecast page link	100
Table 6.39	Add Admin page link	101
Table 6.40	View Feedback page link	101

Table 6.41	View Admin / Member Account page link	101
Table 6.42	Delete Admin / Member Account page link	102
Table 6.43	Edit and Delete Existence Photo page link	102
Table 6.44	Upload New Photo page link	103
Table 6.45	Add New Attractions Information page link	103
Table 6.46	Edit and Delete Attractions Information page link	104
Table 6.47	Integration Test Case	105

## LIST OF ABBREVIATIONS

KL	Kuala Lumpur
IT	Information Technology
RAD	Rapid Application Development
XP	Extreme Programming
ASP.NET	Active Server Page.NET
PHP	Hypertext Pre-processor
MS SQL Server	Microsoft SQL Server
SQL	Structured Query Language
AJAX	Asynchronous JavaScript and XML
JSON	JavaScript Object Notation
IIS	Internet Information Services (IIS)
TSP	Travelling Salesman Problem
ERD	Entity Relationship Diagram

## **CHAPTER 1: INTRODUCTION**

## 1.0 Introduction

This chapter discusses the motivation and problem statement of this project, the scope and the objectives, impact, significance and contribution, and lastly the background information of this project. Generally, this chapter is about the overview of this project.

## 1.1 Motivation and Problem Statement

Nowadays, tourism industry is a booming industry. It is a fast growing area. The arrival of tourists to Malaysia is increasing. Nonetheless, there are problems exist among the tourists. The major problems faced by tourists include:

# • There is insufficient travel information provided in travel brochures and some of the existing tourism websites.

Conventionally, tourists only can obtain information from some small brochures or leaflets provided by the hotel or travel agency. Information printed in the brochures or leaflets may not be adequate simply because they are small and limited by the amount of space provided. On the other hand, there are certain website do not provide a clear description of the place of interest such as the map that shows the whole area or the highlight of the attraction is hard to obtain. Without those detailed information, tourists unable to locate the place and plan their journeys beforehand. Difficulty in getting currency information is the other problem that is faced by majority of the tourists. Tourists unable to get the latest currency exchange rate from the existing Malaysia tourism website.

### • Tourists faced the problem of finding accommodation during their journeys.

Finding accommodation is also another difficulty for tourists. Previously, tourists check for the hotels' room availability when they are arrived the destination. This is inconvenient if it happened that the particular hotel is fully occupied. Then they have to spend more time to search for hotel.

## • Existing websites do not provide budget estimating function.

In addition, another problem that is faced by tourists is they fail to plan their budget well. Eventually, they overspend in their journey. Tourists fail to make adjustment to expenses during their journey. This includes meals, hotels as well as the transportation fees. Obviously, it leads them to face a problem of insufficient money is prepared for their whole journey. Trip preparation is needed in order to enjoy the travels. This includes the money to be used during the journey.

## • Tourists have difficulties in planning the order of places to visit.

Furthermore, there are tourists face the problem on deciding which place to visit. This problem occurs when there are multiple attractions in a particular state and tourists plan to visit multiple destinations within a short period. Tourists from foreign countries are unfamiliar to Malaysia. Due to this factor, they might face the problem when they arrive to a state that has many attractions. Tourists probably spend more time on deciding which place to be visited. Therefore, a website that has the functionality to help tourists to plan the places to visit may solve their problem.

## 1.2 Project Scope

In recent years, Malaysia government promotes Malaysia tourism vigorously. Therefore, the aim of this project is to promote Malaysia tourism. This project is focus on the places that can be visited in Peninsula Malaysia. The contents of the project include a brief introduction of the attractions in Peninsula Malaysia and useful information that is needed by tourists. All the information will be presented in English. In order to make this project more attractive, there are some features being embedded; for instance, Currency Converter, Travel Budget Estimator and also Path Planner.

In this project, for the travel budget estimator feature, author will focus on Kuala Lumpur area first. This is simply because it is the capital city of Malaysia. It is

### CHAPTER 1: INTRODUCTION

undoubtedly true that there will be more tourists need this information. This feature will help tourists to estimate the travel expenses which include accommodations and meals. Moreover, author will also develop the Path Planner feature in this project for Kuala Lumpur area first. Without hesitation, tourists that arrival Kuala Lumpur will be more compared to other state. Since Kuala Lumpur (KL) contains numbers of attractions, the added feature can help tourists to plan the order of place to visit. It suggests tourists which attractions to be visit first and which to be the next. It chooses the place that has shortest distance from the place where the tourists located.

## **1.3 Project Objectives**

There are several purposes for developing this project. They are

# • Provide an easy access of comprehensive information about all the places that can be visited in Peninsula Malaysia.

Tourists can obtain information about a particular attraction easily. Tourists can access the website whenever there has internet provided. Therefore, tourists do not have to worry about not getting sufficient information. With the help of this project, travelers get to know more about the place to visit before they start their journey or make their own travel arrangement without the help from travel agency. Additionally, they can save the service fee for travel agents and keep it for their travels.

# • Develop a platform that allows local tourists to explore more about their own country.

Most of the time, people do not realize that their country contains lots of attractions that are worth to visit such as breathtaking beautiful scenery, wonderful cities that offer leisure experience and fascinating people to meet. Hence, local tourists can explore their own country and experience the beauty that lures millions of international tourists to come over through this project.

# • Provide some features that are convenient and can help them in planning their trips.

The new features that will be added to this project are instant hotel booking that allows tourist to check hotel availability and book hotel online, a currency converter that allows tourists to know the latest currency exchange rate, path planning feature that helps tourists to choose the place to visit which has the shortest distance from the place where the tourists located and lastly the simple budget estimating function that helps to estimate travel budget. These features distinguish this project from other tourism websites. With the new added features, tourists get assistance in managing their trips.

### • Help to promote Malaysia Tourism

By promoting tourism, it can increase the income of our country. It has the ability to promote tourism since it can be view by all tourists no matter which country they from as long as they can access to the internet. By completing this project, it can promote tourism in an effective and efficient way simply because it is free and can be viewed by people from all over the world.

### 1.4 Impact, Significance and Contribution

With the completion of this website, tourists can obtain information about the attractions in Peninsula Malaysia easily. Tourists also can get some useful information for their trips. By visiting this tourism website, tourists get to explore more about Malaysia and reduce the time to search for information. There are plenty attractive photos embedded in the website in order to create interest on the tourists. Tourists might be attracted by those scenery photos to visit our country. Meanwhile, it also helps to promote Malaysia tourism. On the other hand, this tourism website helps tourists to plan the order of places to visit by selecting the place that have the shortest distance from where the tourists located. This function is useful when tourists unable to decide which

place to visit first to fully utilized their time there. It suggests the order of place to visit for tourists.

Furthermore, the website can help tourists to estimate travel budget. This is significantly useful for tourists who do not know where to visit in a particular state and how much money to be prepared for their trips. In addition, there is another feature that is embedded in the website which allows tourists to know the latest currency exchange rate of different countries. It brings convenience to tourists, so that they do have to search it from other website. Recently, do not have any Malaysia Tourism websites provide these functionalities. Therefore, it has the ability to attract more tourists to visit the website and discover more places in Malaysia. With the help of this project, it can minimize the problems faced by tourists such as managing their travel budget and so on.

### **1.5 Background Information**

In modern era, information technology (IT) can be considered as one of the most significant development especially the internet. The internet carries extensive range of resources and information. It brings convenience to the public, especially in academic field.

With the incredible growth of internet, it has made a lot of changes to the world. There are many new ways of conducting business have been developed in many sectors; for instance, using website. The creation of website affects many industries such as tourism industry.

Conventionally, whenever people want to go travel, they have to obtain necessary information and book their trips through travel agency. However, with the rapid development of internet, the existence of website has brought convenience to the tourists. Tourists not necessary have to go for travel agents, whereas they just have to visit some travel websites for details and arrange trips according to their needs. Websites provides useful information such as text descriptions, photos and videos allow tourists to understand more about the country and create their interest to visit the place. Additionally,

#### **CHAPTER 1: INTRODUCTION**

website that provides instant hotel booking definitely brings convenience to the tourists. Tourists can check the hotel availability through website.

The internet has a remarkable impact on today's tourism. Website is able to ease the dilemma of the tourists about where to go, what to do as well as where to stay during their travels. The target audience for this project is all tourists from all over the world and also Malaysian local who are willing to have holidays in Peninsula Malaysia.

### 1.6 Summary

In recent years, Internet has become a new channel for obtaining information, promoting and commercializing products conventionally through traditional outlets, advertising and so on. With the rapid development of information technology, Internet has brought us convenience. It saves time for both work and leisure, and communication. For tourism industry, people can promote tourism through website which enables tourists to get adequate information in order to plan their trips in a more efficient way.

This project is to develop a tourism website that allows tourists to get information easily and plan their trips. In this chapter, the objective of the project is clearly identified. So, the project can be developed to meet the goal set. On the other hand, the problem statements were determined. Therefore the project can be designed to help tourists solve problems. For example, budget converting feature help tourists to estimate travel budget and so on. Besides, the project scope also being discussed in this chapter. This project covers in formation of attractions in Peninsula Malaysia and some features will be developed in Kuala Lumpur first. The target audience for this project is anyone who would like to visit Peninsula Malaysia.

## 2.0 Introduction

A literature review is a critical and in depth evaluation of previous research. In this chapter, the research on similar existing websites, methodologies available, algorithms and development tools are done. The description of each reviewed website is shown. Review of similar existing websites is significant in order to have a better proposed solution. Besides, the fact finding and data collection also included in this chapter.

## 2.1 Similar Existing Websites

Some new ideas for developing this project are inspired by referring several existing tourism websites. The backgrounds, strengths and the weaknesses of some similar websites are discovered.

## 2.1.1 Tourism Malaysia Official Website

Tourism Malaysia Official Website provides most of the information about places in Malaysia in order to allow tourists to explore. From this website, tourists can get more information about the attractions in Malaysia, place to stay during vacation, and the date of a certain event or festival. This website has an eye-catching design. The color and design are attractive. Simultaneously, this website is highly navigated. Tourists can navigate easily and find the information they want.

Moreover, this website also has other resources such as a list of travel agents information, e-brochures, fact and figures and so on. Besides, this website also provides a feature which other tourism websites do not provide. It is called "Trip planner". This feature allows tourists to record their own trip about which day to visit which place. Tourists are able to save or download the trips they have planned and recorded. Currently, this website is still in beta version. The screenshot of the website is shown in Figure 2.1.



Figure 2.1 The screenshot of Tourism Malaysia Official Website.

### 2.1.2 Malaysia Travel Guide

Malaysia Travel Guide is one of the websites that provide information regarding tourism Malaysia. This website contains the information about the place of interest in Malaysia and help users to book hotels. However, the information of places to visit provided in this website covers all the attractions in all states in Malaysia except Sarawak. This website has simple navigation. The attractiveness of the website is moderate.

Besides, it also provides lots of facts and stories about Malaysia Tourism that tourists want to know. This website will show tourists the attractions in different states. With the help of this website, tourists get to know more about each of the state in Malaysia. The instant hotel booking feature also embedded in the website. Tourists can book hotel through the website. This is definitely brings convenience to the tourists.

Other than the information of attractions is provided, the author of this website also will post some articles to this website. The content of those articles are related to the place of interest. Moreover, this website also provides some useful links to the tourists. For instance, Cheapest Airline Tickets - <u>www.cheapoair.com</u>. Tourists can easily find the cheapest airline ticket through this website. The screenshot of the website is shown in Figure 2.2.



Figure 2.2 The screenshot of Malaysia Travel Guide website.

### 2.1.3 Virtual Malaysia.com

Virtual Malaysia.com is another website that provides information about tourism in Malaysia. This website can help tourists to book bus tickets online which is able to minimize the worries of tourists that want to go one place from another place. This feature is unique among the websites that have reviewed. The attractiveness of this website is moderate. Nevertheless, the information that is being covered is considered wide. It includes advertisement, travel deals, photo gallery and many. This website is highly navigated. The information provided is categorized and can be found easily.

Furthermore, tourists can login as member and share personal experience. Tourists are asked to share feedback regarding the website. Therefore, improvements can be made if needed.

All websites will have its strength and weaknesses. The weakness of this website is some of the words in the website are overlapped. This affects the appearance of the website. The screenshot of words overlap is showed in Figure 2.3. While one of the strengths of the website is it is multilingual. The website offers the content in more than one language. The screenshot of the website is shown in Figure 2.4.



Figure 2.3 The screenshot of words overlap in the website.



Figure 2.4 The screenshot of Virtual Malaysia.com.

### 2.1.4 Fantastic Malaysia

A website's contents are important in order to attract more tourists to view the website. This is simply because a website that provides adequate information about the attractions in a particular state is able to create the interest of tourist to visit the place. Fantastic Malaysia is another tourism website. Compared to other tourism websites that have been reviewed by the author, the design of Fantastic Malaysia is moderate. It has simple navigation.

Fantastic Malaysia website provides quite a lot of snapshots of the attractions' scenery and also videos which is able to catch the eyes of website viewers. Moreover, it also provides information about Malaysia which includes the tourist arrival & receipt to Malaysia. The exact figure is shown in the website. On the other hand, the website also provides some information about hotels like what most of the website did. Yet, the difference is it shows the price of some of the resorts and hotel, the uniqueness of the resorts/hotel and the activities that can be done around the place.

The weakness of this website is the information about each of the attractions provided is limited compared to other websites. The screenshot of the website is shown in Figure 2.5.



Figure 2.5 The screenshot of Fantastic Malaysia website.

### 2.1.5 SOTA Smart Online Travel Assistant

SOTA Smart Online Travel Assistant is a website which shows all the travel packages the travel agents offered. These travel packages can be categorized into many different categories such as Adventures, Family, Educational and so on. There are many packages being offered and shown in the website based on the countries that user select. For example, when the user select Malaysia, then the website will show all the packages being offered in the selected country.

This websites only show packages and promotions offered. It is different from other websites. The details of the packages offered are shown such as the duration, travel period, destination and the price of the package. This website also provides feedback forms that allows tourist to comment on their website. The screenshot of the website is shown in Figure 2.6.



Figure 2.6 The screenshot of SOTA Travel website.

## 2.1.6 Comparison between Five Similar Websites

Website	Tourism	Malaysia	Virtual	Fantastic	SOTA
	Malaysia	Travel	Malaysia	Malaysia	
Features	Official	Guide			
	Website				
Eye-catching	Yes	Moderate	Moderate	Moderate	Yes
design					
Convenient	Yes	Moderate	Yes	Moderate	Yes
navigation					
Information of	All states in	All states in	All states in	All states in	Not provided.
attractions	Malaysia.	Malaysia.	Malaysia.	Malaysia.	
		Exclude			
		Sarawak			
Promotion/	No	Yes	Yes	No	Yes
Packages offered					
Instant hotel	No	Yes	No	Yes	No
booking					
Sign in/out	No	No	Yes	No	Yes
Sitemap	Yes	No	Yes	No	Yes
Photo Gallery	Yes	No	Yes	No	No
Feedback Forms	No	No	Yes	No	Yes
Advertisement	No	No	Yes	No	No
Search Option	No	Yes	Yes	No	Yes
Contact	Yes	No	Yes	Yes	Yes
Information					

Table 2.1:Comparing the Features of Five Similar Websites.

Table 2.1 shows the comparison of the similar websites. It is clearly shows that out of five similar websites, none of them are having currency converting feature, budget estimating feature and also path planning features. Whereas this project - Online Travel Assistant will add these features. By having these feature, it make it distinguish from other websites. Since the design and convenient navigation is significantly important as it will affect the attractiveness of a website. Therefore, this project will have convenient navigation. This project will cover the information of attractions within peninsula Malaysia. The instant hotel booking feature will also be included. Besides, the feedback/survey form also will be provided in order to get the opinion from the visitors and make any improvements if possible.

### 2.1.7 Proposed Solution

Travel website is absolutely crucial in order to promote tourism in Malaysia. Therefore, an attractive travel website is needed. Since most of the people will spend hours to do online research before taking a vacation. So, a website which contains adequate information definitely helps tourists a lot.

Based on the research that has been done in the previous section, the features of the several websites are figured out. It is the reference to improve the latest system. Online Travel Assistant is more likely to be similar with the existing websites but there will be some extra features embedded in the website; for instance, currency converting feature to allow tourists to check currency rate, budget estimator to estimate travel budget in order to keep tourists away from facing financial problem and path planning function to plan their journeys. Some information provided in the reviewed existing websites and layout design will be taken to the consideration. The proposed solution will make the website become more convenience and is able to help tourists to plan their trips.

Furthermore, this proposed website will have more navigation. Therefore, it can minimize the frustration of visitor for not finding the right information easily.
### 2.2 Methodologies Available

There are several types of methodologies can be use in developing a system. In order to ensure the quality of the system, the use of methodology is significant. This also ensures the consistency and efficiency of the development process.

#### 2.2.1 Waterfall Development



Figure 2.7 Waterfall Development Model (Csse.monash.edu.au 1988)

Waterfall Development proceeds in sequence. It takes every step one-after-theother. By following this method, the project will be divided into many stages thus easing out the whole process. Its development is seen as flowing steadily downwards through the phases. Waterfall development is possible to go backwards but extremely difficult. The basic principle of this model is the project is divided into sequential phases, with some overlap and splash back acceptable between phases. (Shikha maheshwar and Dinesh Ch. Jain 2012)

### 2.2.2 Iterative Development



Figure 2.8 Iterative Development Model (En.wikipedia.org n.d.)

#### CHAPTER 2: LITERATURE REVIEW

Figure 2.8 shows the flow of Iteration Development. The iterative development is a development approach that "cycles" through the development phases, from gathering requirement to delivering functionality in a working release. The word "iterative" means that it involves repetition. (C2.com 2005) As the Figure 2.8 shows the project has to be break into different phases. The breakdown of the project is vital in order to allow the development team to demonstrate result earlier in the process. The project phase should be reviewed few times by software team and system users which provide feedback. The critique gained is then used to determine the next step in the development.



### 2.2.3 Evolutionary Prototyping (RAD)



Evolutionary Prototyping perform analysis, design & implementation phases concurrently to build the first version. The first prototype usually is the first part of the system used by users. In figure 2.9, after the analysis, design and implementation is completed. The system has to show to users to provide feedback before the system can become the prototype. Once the first prototype is done, second prototype is started to build. In the second prototype, the first prototype is re-analyze, re-design and also reimplement. There are more features in second prototype compared to the first one. The process of refining the prototype is repeated before it can become the final system. Each stage the prototype 'evolves' towards the final system.

Evolutionary Prototyping is one of the types of prototyping. It is different from Throwaway Prototyping.

# 2.2.4 Spiral Model



Figure 2.10 Spiral Model (En.wikipedia.org ,n.d.)

Figure 2.10 shows the Spiral Model. This model is known as spiral life cycle model. It combines the features of waterfall development and prototyping development. Spiral Model is more suitable to use for large and complicated project. This is because the cost to develop it is expensive. Spiral Model is focus on risk assessment and minimizing the project risk by breaking the project into smaller segment. (Shikha maheshwar and Dinesh Ch. Jain 2012)

# 2.2.5 Extreme Prototyping (XP)



Figure 2.11 Extreme Programming Development Model

Extreme Programming is also known as agile development. It takes good system development practices to the extreme. There are four values of extreme programming which are communication, simplicity, feedback and courage. It is one of the most known and used of the agile software technique and places more emphasis on adaptability than predictability.

# 2.2.6 Comparison between Methodologies

Features	Waterfall	Iterative	Evolutionary	Spiral	Extreme
	Development	Development	Prototyping	Model	Programming
			(RAD)		
Time Taken	Long	Short	Short	Depends on	Very Short
To Develop				project	
Cost	Low	Low	High	Expensive	Very High
Flexibility	Rigid	Les Flexible	Highly	Flexible	Highly
			Flexible		Flexible
User	Beginning	Intermediate	High	High	High
Involvement					
Complexity	Simple	Simple	Complex	Complex	Complex
of System					
Guarantee of	Less	High	Good	High	Very High
Success					
Changes	Difficult	Easy	Easy	Easy	Difficult
Incorporated					
Expertise	High	High	Medium	High	Very High
Required					
Requirement	Beginning	Beginning	Frequently	Beginning	Frequently
Specification			Changed		Changed

 Table 2.2:
 Comparative Analysis of Five Models

From Table 2.2, author gets to know the features of each of the methodology. All description of the researched methodologies have discussed in section 2.2. Each of the methodology has its advantages and disadvantages. There is no methodology without drawbacks. Therefore, author has to select the most suitable one in order to develop this project. The details of strengths and weaknesses of the reviewed methodologies can be referred to APPENDIX A-1. The chosen methodology will be discussed in Chapter 3.

Faculty of Information and Communication Technology (Perak Campus), UTAR.

#### 2.3 Travelling Salesman Problem (TSP)

Travelling Salesman Problem (TSP) can be known as a classic NP-hard problem. It is a problem that determines the shortest route for visiting a set of locations. Generally, TSP is defined as a problem faced by salesman. A salesman who wants to travel to a couples of cities for exactly once and has to return to the origin location. In order for him to accomplish his mission within a specific time, he has to figure out the shortest route.

TSP can be explained as a undirected weighted graph. This is because the location to be travel are the graph vertices, path are the graph edges and the path's distances is the edges length. (En.wikipedia.org 2013). To solve this problem there are several algorithms that can be used. For instance, local search algorithm, brute-force algorithm , greedy algorithm and so on so forth.

As the explanation above, the problem that is faced by travelers is similar to TSP as they are going to travel to several places within a specific duration. By considering this as a TSP problem, the solution to solve the problem would probably able to figure out the shortest route to visits all the places once. For the solution of TSP, the places will be reorder and can be considered as a suggestion of the order of places for travelers to visit.

Therefore, the path planning feature in this proposed system is actually trying to help travelers to solve this TSP problem. Now, Google has already implement an API which allows developers to use it and solve the problem in tourism field easily. It can optimize the route and show the direction to the places. Therefore ,to implement the path planning features, the Google API will be used simply because it uses the real-world data and it is much more accurate and can be applied in reality. To solve this TSP problem, Google has provided a solution. It is called "Using Waypoint route" function. This function able to figure out the shortest route for visiting a set of places exactly once but do not return to the origin places. This function use a local search function to find solution. It is suitable when travelers just want to plan the order of places to visit and do not plan to set their hotel location as the origin location. The details about this function will be explained in section 2.4 Table 2.3 under Google Directions API.

#### 2.3.1 Local Search Algorithm (2-opt Algorithm)

Local Search algorithm is usually used to find the optimize route. There are several typical algorithm that used to solve TSP. For example, 2-opt algorithm, 3-opt algorithm and others. 2-opt and 3opt algorithm is known as a simple search algorithm. In order to use local search algorithm, the distance and neighbor concept must be defined. 2-opt and 3-opt algorithm are actually works in a similar way. The only difference is the number of connection/edges in a network to be deleted and reconnect it later. Local Search Algorithm is chosen when ones need to improve the solution after Brute Force Algorithm is used. The below diagram illustrate how 2-opt algorithm works.

By using 2-opt algorithm to solve TSP, the solution might not be the optimal but it will be a good one.



Figure 2.12 2-opt algorithm

In the figure above (Figure 2.12), it illustrate how 2-opt algorithm works. At first, two links between the nodes in the best random solution is randomly picked. The links is then replace with other in order to make the route stay connected. From the figure, connection between node 5 and node 1, and connection between mode 4 and 8 with red links are chosen. The connection is then replace with blue links that connected to other nodes.

After the new connection is formed, the total traveled distance must be calculated to check if there is any improvement. If there is improvement for the new ordering, it is then used it and try swap with other random links to figure out if there is any improvement. The links is deleted and reconnect it with all other possible ways. The swapping process is stopped until there is no improvement is found.

#### 2.3.2 Brute Force Algorithm

Brute Force is another common algorithm that used to solve TSP. Brute force algorithm also known as exhaustive search. It is obvious and easier to implement compared to others algorithms. It is able to find a solution if it is exists simply because it compute every possible tour to figure out the optimal solution. Brute Force is usually the technique to be used at the first try.

This algorithm can provide an optimum solution, however it do has a numbers of disadvantages. For instances, sometimes it takes longer time to compute. If only need to compute the solution once and the running time is reasonable, brute force can be a valid approach. Hence, this algorithm is typically used when the problem size is limited.

#### 2.3.3 Greedy Algorithm (Nearest Neighbor Algorithm)

Another type of algorithm that can be used to solve TSP is greedy algorithm. There are plenty examples of greedy algorithm, however not all greedy algorithms are suitable to solve TSP. Nearest neighbor algorithm is one of the example for greedy algorithm that can be used to solve TSP. This algorithm does not provides optimal solution. This algorithm for TSP is to start at any of the city then from the city find the closest unvisited cities, continue until all the cities are visited. At the last point return to the starting point. Nearest neighbor algorithm is a sophisticated version of greedy algorithm which it considers all the closest cities at the stage.

Below is an example on how the Nearest Neighbor Algorithm works.



Figure 2.13 Nearest Neighbor Algorithm

#### CHAPTER 2: LITERATURE REVIEW

Figure 2.13 illustrate how to travel from city 1 to city 6 by having the shortest distance. For instance, start with city 1 then travel to city 4 since it has the lowest cost matrix compared to others cities. Then, the first route is created which is city1-> city4-> city1. After that, consider the two cities in the route- city1 and city4, find the closest city. City3 is closest to city4 . Hence, it is place before city4 . Now the route is city1->city3->city4->city1.

Now, left city2,city5 and city6. Consider the closest city to the route, which is city2 and city6 that has same distance (cost matrix). City 2 and City 6 is place in the route next to the closest city. Therefore, the updated route is city1->city2->city3->city4->city6->city1.

Finally, city5 is 4 units from city3 and city6. It is chosen to insert before city6 to get the near-minimal solution. The final route is city1->city2->city3->city4->city5->city6->city1 which has a cost of 19.

### 2.4 Google API

Google API is the Google latest technology. Google offers several Web API that allow developers to use it to develop application. For this project, there are several Google API and some Google libraries will be used to implement some of the features that help users to plan their trips. Below are some of the API that are provided by Google and will be used in this project.

### 2.4.1 Google Finance API

This web services can check the latest currency rate. Furthermore, it can query the current or historical information about a given current stock symbol. This web services will be used in check currency feature.

### 2.4.2 Google Maps API

Google Maps API provides several web services as an interface for requesting MAP API data. They are: Directions API, Google Places API, Static Maps API,

Street View Image API, Distance Matrix API, Time Zone API and so on so forth. All web services are accessed by using HTTP request and services return data as JSON or XML. Google Maps API web services offer a wide range of web services to developers. Developers can choose the suitable API to be use in their application. In fact, all these API that are categorized under Google Maps API need to use Google Maps. With the help of its mapping technologies, a simple Google Maps can have different functionalities. For this project, there are two API being used in the Path Planning feature and Search Places feature which are Google Directions API and Google Places API. Google Maps API Web services is chosen to be integrated in the proposed system simply because it use the realworld data such as the distances between two cities. Table 2.3 shows the two different API and its functions provided.

API	Functions Provided			
Google Direction API	Google Directions API provides few functions to be integrate			
	to the Google Map, such as Travel Modes, Restriction			
	Using waypoints in route. This API provides direction to the			
	uses when users have select the places on the Google map a			
	start calculate the directions.			
	The function travel modes is allow users to specify the			
	transportation mode to be used when they want calculate the			
	direction. The function restrictions allow users to specify the			
	restrictions when the direction to several places is calculated.			
	For example, avoid tolls and avoid highways. This can be the			
	option when use calculate the directions.			
	Using waypoints route is one of the useful function that is			

Table 2.3	Google Maps API We	b Services
-----------	--------------------	------------

	provided in Google Direction API. By default, the direction		
	service will calculate route through the given waypoints that		
	are being set by user. Waypoints are the places that has been		
	selected. For example the first selected place in the map will		
	be considered as the origin place while the last selected place		
	will be the last place to visit.		
	If Using waypoint route (Optimization) function is used, the		
	waypoints will be rearrange in a more efficient way. Thus the		
	route will be optimized . This is also meant that it suggest		
	users the order of the places to visit. This optimization is also		
	known as an application of Traveling Salesman Problem		
	(TSP). This function solve the TSP problem by reordering the		
	places.		
	The Optimization engine that solve the TSP used local search		
	algorithm to improve the solution. Details of local search		
	algorithm can be referred to the previous section 2.3.1.		
Google Places API	Google Places API offers several Place request for developer		
	to use, such as Place Searches, Place Details, and Place		
	Autocomplete.		
	Place Searches request will return user's location. Place		
	details will show the detailed information for the specific		
	place. Place Autocomplete will provide users autocomplete		
	functionality for text based search.		
	This API will be used to implement the Search Places feature		
	which allows users to search nearby places and search type of		
	places. The search result will be displayed on the Google		
	Map.		

#### 2.5 Development Tools

Since this project final deliverables will be developed in web-based form, the skill of web programming is needed. There are few web programming language can be used. There are ASP.NET and PHP.

#### 2.5.1 ASP.NET

From the research on internet, there are plenty of advantages of using ASP.NET (Active Server Page.NET). ASP.NET was developed by Microsoft ASP.NET which is used to create web pages. ASP.NET is one of the valuable tools for programmers and also developers simply because it allows them to create dynamic Web Sites and rich Web applications using compiled languages like C# and Visual Basic. (Seekdotnet.com 2008)

### 2.5.2 PHP

PHP (Hypertext Pre-processor) is another web programming language that is used to create dynamic website. It is one of the most popular server side scripting languages that is very similar in syntax C language. (Pretechno.com 2006) PHP interact with the user offering customized information. PHP offers many advantages such as it is fast, stable, and easy to use and it is open source server-side scripting language. (Designersplayground.com 2011)

### 2.5.3 Comparison of ASP.NET and PHP

Development Tool	Strengths	Weaknesses
	• It is easy to update and redeploy	• It runs only on Windows platform
ASP.NET	• It can speed up the application execution when a	Longer code path     leads to expensive
	same content part is available for different pages.	memory usage.

 Table 2.4
 Comparison of Strengths and Weaknesses between ASP.NET and PHP

	٠	It has the ability to reduce		
		the amount of codes needed		
		to build a large application	•	Average Development
		dramatically.		time is more for
	•	Source code is safer and		smaller websites.
		robust.		
	٠	It has the ability to create		
		new, customized server		
		controls from existing		
		controls.		
	•	It has full-featured integrated		
		support for XML and Web		
		services.		
	•	It is a cross-platform		
PHP		language. The program can	•	PHP is a server side
		be run on Windows, Linux		language and the
		and many other operating		programs cannot be
		systems (OS).		executed on the client.
	•	It is an open source language	•	Lack of exception and
		and easy to understand and		error handling
		learn.		technique.
	•	It reduces the development	•	Application execution
		time. The website is quite to		time is slower.
		develop.		
	•	It eliminates the client		
		configuration problems since		
		the application it is executed		
		on server.		

According to Table 2.4, the strengths and weaknesses are clearly shown. The details of features comparison for each of the web programming language can be referred to APPENDIX A-6. The selected development tool will be discussed in Chapter 3.

### 2.6 Fact Finding

Fact finding is the formal process that used to gather necessary information or data. It collects information about systems, requirements, and preferences. Below are some of the techniques of fact finding that have been used in this project.

### 2.6.1 Existing Documentation

The study of existing documentation of survey that has been done by others is useful in developing this project. This is simply because author gets to know more about some of the information and can retrieve some of the data from the documentation for the use of this project; for example, the statistic of Malaysia Tourist Arrivals by Country of Nationality. Author gets to know the importance of tourism website. Besides, the statistic of components of expenditure by domestic visitor can be retrieved from the summary findings done by government. The percentage of expenditure for each component is figured out and might be useful in developing the budget estimating feature in the project. The information that is retrieved from the document can be referred to APPENDIX A-7 and APPENDIX A-8.

### 2.6.2 Research and Site Visits

The research and site visits technique is to collect information that is needed from the internet, journals and references book. Author finds information that is related to the attractions in Peninsula Malaysia, and features that can be included in this project from the similar existing websites. On the other hand, information also can be collected from some related forums. The journal that has been referred regarding the methodologies is attached in APPENDIX E-1.

# 2.6.3 Questionnaires

Questionnaire is another fact finding technique that has been used in this project. Questionnaire survey is conducted to collect information and opinions from respondents. There are two types of questionnaire, free format and also fixed format. Free format is the answer of the question can be answered by respondents whereas fixed format is multiple choices, rating and also ranking. The advantages of this technique are it can be answered quickly, it is relatively in expensive, and it can maintain anonymity and provides real facts. The survey questions can refer to APPENDIX B-1 whereas questionnaire analysis refers APPENDIX B-2 to APPENDIX B-8.

### 2.7 Data Collection

Based on the collected relevant data and documents, there are many domestic tourists that come to Malaysia. The number of tourist arrival in the year 2012 is increased compared to the year 2011. The increase of tourists affect the importance of a tourism website because tourist from other countries would like to know more about their travel destination through tourism website. The statistic of Malaysia tourist arrival can refer to APPENDIX A-7. On the other hand, the statistic of components of expenditure by domestic visitor is useful in developing the budget estimation feature in the project. The data can refer to APPENDIX A-8.

According to the questionnaire that has done by 152 people, it shows that 93% of the respondents visit tourism website that is related to their travel destination before they go travel. APPENDIX B-2-1 shows the result. In APPENDIX B-2-2, shows the reasons of respondents not visit website. The pie chart in APPENDIX B-2-3 shows 84% of people plan their trip by their own rather than arranged by agents whereas there is only 1% selected other ways. From the analysis, it shows the importance of tourism website.

In APPENDIX B-3, it shows the importance of different types of information provided in tourism website. From the analysis, it shows that there are majority of respondents select '5-extremely important' for information about tourist attractions, promotion, accommodation, events & festival, contact information and food which have a percentage of 45%, 46%, 38%, 38%, 43% and52% respectively. This significantly shows that this information should be provided. On the other hand, the type of information with

#### CHAPTER 2: LITERATURE REVIEW

higher percentage in the scale of '1-not at all important' and '2-slightly important' are the information about travel agents, video and introduction to the country which have a percentage of 21%,15% and 10% respectively. This reflects that the information is not very important and it is optional to be included in tourism website. Other types of information are moderately important. The level of importance and percentages of each scale according to each type of information can refers to APPENDIX B-3-1 to APPENDIX B-3-12. It is arranged based on the survey questions.

In APPENDIX B-4-1, the pie chart shows that majority of the respondents think that currency conversion will be useful to them. The percentage of respondents select 'Yes' is 95% while only 5% of respondents think it is not useful to them. It can be concluded that adding a currency conversion feature in tourism website is useful.

Moreover, according to the questionnaire, 80% of the respondents able to plan their budget, however there is 19% of respondents fail to plan their budget. The result is shown in APPENDIX B-5-1. From the outcome of the questionnaire shown in APPENDIX B-5-2, it is proved that 75% of respondents have the reason of do not know the cost of living of the destination which leads them fail to plan budget. Besides from APPENDIX B-5-3, author gets to know the types of expenses to be included in budget estimation. Accommodation is the main expenses to include which has a percentage of 85%. Based on collected data from the questionnaire, budget estimation feature can be included in this project to help those fail to plan budget as it has 90% of respondents think that it will be useful. Pie chart in APPENDIX B-5-4 shows the exact result.

The graph in APPENDIX B-6-1 analyzes the common problems faced by respondents during vacation. The outcome reflects the need of having instant hotel booking feature in the tourism website. This is because majority of the respondents face the problem of finding accommodation when travelling. Its percentage is the highest among other problems which is 54%. Thus, instant hotel booking feature is needed.

Furthermore, in order to figure out the needs to include path planning feature in this project, a survey is done to analyze the needs of this feature. From the pie chart shown in APPENDIX B-7-1, more than half respondents (57%) face the difficulties in planning the order of place to visit when travelling. There is 47% of respondents face this problem because of not familiar with the place. Pie chart in APPENDIX B-7-2 demonstrates the analysis result. Therefore, from this point of view, a path planning feature in tourism website will probably help them to minimize the problem. Additionally, the result in APPENDIX B-7-3 shows that 93% of respondents think if a path planning feature is included in a tourism website then it will be helpful to them. So, the analysis has proven that the path planning feature that will be included in this project is helpful to tourists.

From pie chart in APPENDIX B-8-1, author figures out whether respondents have any additional information would like to include. APPENDIX B-8-2 shows the suggestion of additional information that respondents would like to include.

With the help of questionnaire analysis, the website content that is needed by the tourists is discovered.

#### 2.8 Summary

The research on similar existing websites, fact finding for the project and also data collecting were done. The proposed solution was formed by reviewing the strength and weaknesses of similar websites. Besides, the methodologies, development tools available are reviewed. Author can analyze and select the most suitable one to be used in the project. Additionally, the questionnaire analysis was done in order to figure out the facts and prove that the proposed solution is suitable and able to meet user's requirements. From the analysis, author had a better understanding on what users' need and what should be included in the project.

#### **CHAPTER 3: METHODOLOGY**

#### 3.0 Introduction

In this chapter, the chosen methodology for this project and the implementation of project in each phase will be discussed. Besides, the development tool chosen, challenges faced in this project, project schedule and also requirement specification will also be covered in this chapter.

#### 3.1 Methodology Chosen

Methodology can be considered as a set of methods that define the process and order of how something is to be achieved. In order to develop a successful system, a suitable methodology has to be selected. Therefore the flow of the development process can be more consistent and work more efficiently. There are a lot of methodologies that are available to develop a new project. Different kinds of methodologies are used for different types of project. After the reviewed of few methodologies that have been done in the previous chapter, the proposed methodology for this project is Evolutionary Prototyping. It is a kind of Rapid Application Development (RAD).

Evolutionary Prototyping is selected because in this method the initial prototype of the system is presented to the system users. They provide feedback and suggestions to the first prototypes for improvements. After the evaluation of the system has been made, the system is regenerated. The prototype is modified until it meets the requirement of users. Then the final version of the prototype is released. This methodology is suitable for developing websites because the features that will be embedded can modify and upgrade regardless the number of times. The prototype evolves continuously. By applying this methodology, the system can cope with change during and after implementation. Moreover, it helps to overcome the gap between specification and implementation. Figure 3.1 shows the evolutionary prototyping flow.



Figure 3.1 Evolutionary Prototyping Development Flow (Kep3.com 2002)

# 3.2 Application of Chosen Methodology

According to the chosen methodology, there are several phases and steps involved in the development of this project. The process of Evolutionary Prototyping is as below:

# Phase 1: Planning

In this phase, the goals and aims of the project, the users and the range of scope for both contents and functions to be included in the project were identified. The problem statements of the project will also be defined in order to plan the project that will meet the needs of the users. The task analysis was done in this phase so that the problem is fully understood and the reason to have this project is built. It is crucial to have a clear understanding of the project. Therefore, the effort required to build the project can be estimated. The appropriate resources of project need was identified, analyzed, prioritized and arranged. Additionally, the work plan is included in this phase which established what have to be done in a specific period. To achieve this, a Gantt chart was built to schedule the development of the project. This phase was done in Project I.

# Phase 2: Analysis

During this process, the information gathered and requirements were studied and structured. This includes the instructional problem while organizing the goals and objectives. Analysis considers the development tools or any other skill that is needed to complete the project, the information that users requires, and lastly the intended users of the project. Therefore the related data and necessary information was

gathered. The survey that used to collect data was designed and distributed. The questionnaire was analyzed after the adequate numbers of survey was done. All necessary analysis was included in this phase, this includes analyze the strengths and weaknesses of each development tools, methodologies and so on. This phase was completed in Project I.

#### Phase 3: Design

The design phase is where the user interface of the website is designed after the analysis of related components. All the necessary content that is needed will be included such as the sign in / sign out feature. The architecture design and the navigation design for the proposed project were designed. Furthermore, the design of database for storing some information, the related diagram such as ERD diagram, and the design of features such as the budget estimating feature in the project were designed in this phase. The verification plan for the functionality of the project will also be included. This phase was carried in Project II.

#### **Phase 4: Implementation**

The implementation phase of the project consists of the development of the project and the revise of some specifications and requirements for the project. In this phase, the blueprint of the designed phased was formed and the project was started to develop within the limited time. Examination of prototype was executed in this phased to find out the bugs and fixed as early as possible. The prototype was tested whether it can work properly and performed the functions. After the initial prototype was completed, it was released and tested by users. Users will provide feedback and suggestion for improvements. This phase was carried in Project II.

#### Phase 5: Evaluation

The evaluation of users was done constantly in order to ensure the quality of the project whether it is able to meets users requirement. After the prototype was released and tested by the intended users, the feedback provided will be collected for further improvement of the project. The suggestions given were analyzed and used to

evaluate the view and satisfaction of the website and it is used for the next version of system. This phase was carried in Project II.

### Phase 6: Refinement

The project was refined if there was any improvements made based on the analysis of the users' feedback. The prototype was re-implement depends on the users' requirements and allow user to evaluate again. Hence, the system can perform better several times of improvements. This phase was carried in Project II.

## **3.3** Development Tool Chosen

Based on the comparison of strengths and weaknesses shown in Table2.3 and comparison of features in Appendix A-6, there are differences between both programming languages. Author chooses ASP.NET as the web programming language to develop the system rather than PHP. There are several reasons that ASP.NET is chosen.

First and foremost, the reason for choosing ASP.NET as the development tools is it provides easy interactive debugging of pages. Error in the code can be easily detected and debugged by author compared to PHP. On the other hand, ASP.NET also provides server control where as PHP does not provide. This is one of the reasons ASP.NET is chosen. The server control allow author to manage data more efficient and effective. Besides, there is controller inbuilt with Visual Studio. Hence, author does not have to waste time in finding external plug-ins.

Last but not least, the reason of choosing ASP.NET is it can be use in Visual Studio where it is a powerful tool that support many languages compared to PHP. Besides, there are many useful features that are provided in Visual Studio.

As a conclusion, ASP.NET is the programming language that author chosen, Microsoft SQL for database and C# for the main language to code. Microsoft SQL and C# is chosen simply because it is more suitable to work with ASP.NET. The software that used to develop the system is Microsoft Visual Studio 2010.

## **3.4 Implementation Issue and Challenges**

There are some difficult issues and challenges during the implementation of the project. First of all, the project will be developed by using ASP.NET which author has to learn the advanced level of ASP.NET. Since author only has the very basic knowledge of ASP.NET. Additionally, the C# language and Microsoft SQL server are new to author as it has not been learnt. Moreover, it is quite difficult to include all the information that is needed and meet the users' requirements. Hence, more effort is needed. Besides, some facts and information has to be figured out, and skills have to be learnt in order to develop the features that will be included in the project. In addition, author also has to put more effort in finding people to complete the questionnaire in order to get necessary data for the used in developing the project.

## 3.5 Timeline

The timeline for a project plan is significant. This is simple because it allows author to understand the progress of the project and ensure the quality of the project. Meanwhile, it can make sure that the project can complete on time. It helps to manage the time of each phase in project development. The timeline records the tasks done in Planning phase and Analysis phase for Project I and the tasks done in Design phase, Implementation phase, Evaluation phase and Refinement phase for Project II. The Gantt chart which records the actual time spent for the progress of Project I and Project I and Project II can be referred to APPENDIX C-1.

# 3.6 Requirement Specification

In this section, the functional and non-functional requirements will be discussed. Functional requirement is the user requirements where the functions that a user can perform. Non-functional requirement is about the performance of the system.

### 3.6.1 User Requirements

User requirements are categorized in functional requirements. It is based on the user needs towards the website. It is a process where the system has to perform and the information the system must contain. It describes the behavior of the system to be developed. Below are the user requirements for the project.

### • Register

Visitor use their e-mails to register as the member in order to access some of the features. Visitors fill in their e-mails, password and personal information such as name and date of birth and so on.

## • User Login

Users use their e-mail and password to login so they can have the priority to access some features.

### • Add / Edit Personal Information

Users have the priority to update their personal information.

### • Browse Destination

Any visitor of the website can browse the information of attractions provided. The brief introduction and some photos of each of the attractions are shown when it is selected. The attractions allocated in Peninsula Malaysia will be categorized based on the states.

# • Search and Book Hotel

Search and book hotel feature that will be included in the website allows user to search and book hotel instantly.

#### CHAPTER 3: METHODOLOGY

### • Check latest currency exchange rate

This currency converting feature in the website allows users to check the currency exchange rate by entering the currency that they would like to exchange.

# • Estimate travel budget

The budget estimating feature only allows registered users to access. This feature helps user to estimate the travel budget which includes transportation, meals and accommodation.

# • Path planning

Path planning feature in the website help registered users to plan and suggest the order of the places to visit when they have no idea on which place to be visited. Users have to select the places that they want to visit, the first places as the origin place and the last selected place will be automatically set as the last place to visit. The places in between will be rearrange to get the optimize route.

# • Search Places

Search Places feature allows user to search nearby places and search different types of places. This feature can help user to have a better understanding of the geography and plan the places to visit.

# • Check Weather Forecast

This feature lets users to know the weather information, so that users can plan their trips

# • Administrative access

This system allows multiple users to be administrators to have access to the admin page for add, update, delete and view the content of the website. All administrators have to login with the correct username and password.

## 3.6.2 System Performance Definition

System performance is a type of non-functional requirements of the project. It is necessary for a project and it will directly affect the acceptance of the system. The system performance refers to the speed, capacity and reliability of the system. The nonfunctional requirements are as follow:

# • Response Time

The response time is refers to the efficiency of the website that response to the customers within a specific time. It is also known as the time required to load a page. There has always been variety of definitions for response time of the performance requirements. The time unit is normally second or millisecond.

# • System Capacity

The system capacity is important because it has to save all the registered users information to the database. Sufficient database space is required.

# • Reliability

Reliability of the system can maintain the level of performance. This includes it is fault tolerance and the data is easy to restore. Data can be restored in a short period when something goes wrong.

### • Maintenance

Maintenance is important to have a better performance. This includes stability, easy to change and also easy to analyze. Stability needs a long time to reflect and is used to measure declining rate of the figure of performance after a long run. System with poor stability may result in memory leak or database transaction log overflowing. For easy to change means the system should be modified to eliminate the errors to adapt the changes of environment.

### 3.6.3 Design and Verification Plan

### • Determine the objectives and scope of the project

To determine whether the project was developed towards achieving the goals, clear objectives for developing the project must be identified. For this project, the main purpose is to provide travel information to the tourists and promote Malaysia tourism. Thus, by having a clear understanding of the project, a suitable design for the user interface can be determined. Since it is a tourism website, therefore the main page should be designed in an attractive way. This is important in order to attract users. Besides, the scope of the project should be determined so can verify whether the complete project has fully covered the scope. There are some questions that can be addressed to this criteria such as Is the proposed website attractive? And do the website useful to tourists?

## • Understand the users' characteristic

User's characteristics can affect the design of the website as well. Different users will have different opinions and different requirements. Therefore, they will probably have different view for a website. For instance, some users might prefer a simple design interface rather than a more complicated design. Meanwhile, the type of navigation preferred also depends on the characteristics. Some will prefer horizontal while some prefer vertical. Furthermore, the browser that the user prefers will affect the performance of the website. Some questions that can be included in the verification are: What are the browser user usually prefer? Is the website can be run in any browser? Which type of design is chosen by majority of the users?

# • Identity the features that should be included

What feature users need the most? Is the feature working fine? In verification plan, author verified whether the features are needed, useful and can perform well. By having useful feature, the proposed website can meet the users' requirement. This task was accomplished when the problem statement was determined.

### • Test Website

Testing plays a critical role in development of website and in long term maintenance. The website should be tested continuously from the users' feedback.

The testing includes the test of usability and accessibility for the website. The markup of the webpage must be validated. Besides, the website should be tested on multiple browsers and platforms. This is because sometimes the website looks good and works well in one browser does not mean that it will look exactly the same on the other browsers/platforms. The pages should be tested on a variety of display and on different screen of resolutions and with various color settings. Generally, some website with beautiful design is wonderfully contrasted on LCD monitor. However, it might not looks good in CRT monitor. Therefore, it is worth to test. Moreover, the screen resolution and color setting may make the website look slightly different. Thus, the website should be tested in order to display and work properly in different circumstances.

#### 3.7 Summary

The chosen methodology was described at the beginning of this chapter. The reason for choosing Evolutionary Prototyping was clearly defined and tasks to be done in each phase in the methodology were defined. Author had a better understanding of the process of developing the project. The development tool to develop the project is ASP.NET. The reasons of choosing ASP.NET were stated in this chapter too. Besides, the estimated timeline for deliverables and milestones were included to ensure the project to be completed within specific date. The flow of the project was described in Gantt chart format. Besides, problems faced during the implementation of the project and the requirements specifications were stated. As a whole, upon studying and reviewing the steps stated, it was believed that the project can meet the objectives.

#### **CHAPTER 4: SYSTEM DESIGN**

#### **CHAPTER 4: SYSTEM DESIGN**

#### 4.0 Introduction

System design is an essential phase which mainly define how is the system works. The design of the system will be developed based on the documented requirements produced in the Analysis phases. This chapter will describes how all of the pages and information will be linked together. The user interface design for each page, Unified Modeling Language (UML) such as use case diagram, sequence diagram, and Entity Relationship Diagram(ERD) which illustrate the database structure will be covered. In order to have adequate understanding on the system, explanation will be provided whenever it is needed.

#### 4.1 Interface Conceptual Design

Before implement the actual system, a conceptual design should be done. A conceptual design is drawn according to the research. For example, how to design the user interface, what color is more suitable for the user interface, how many web pages can be included, what functionality is needed, and so on.

#### 4.2 Site Architecture

Site architecture describes how all pages are linked together. It can be considered as a sitemap or structure of the website. Site Architecture illustrates all navigation links to major site sections. Figures 4.1, Figure 4.2 and Figure 4.3 show the site architecture of Home Page, Member Page and Admin Page respectively.





Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.





Figure 4.3 Site Architecture of Admin Page

# 4.3 User Interface Design

Basically user interface design is talking about the design of the website. A clean and organized user interface allows user to interacts well with the website and find information needed easily. Besides, a nice user interface also able to catch the user' eyes. Hence, to have a well designed interface, user interface design should match user's requirement. All the user interfaces for this proposed system will be designed using ASP.NET Master page and content place holder. This is simply because it can improve the efficiency. The below diagram shows how is the Master page and it content place holder works. This technique will be implement on the user interface design. Figure 4.4 shows the relationship between Master Page and Content Place Holder.



Figure 4.4 Master Page and Content Place Holder

# 4.3.1 Default Master Page Design

This is the design of default master page. It can be considered as the overall design of the system user interface that all visitors can see. Within this default master page, there is a Content Place Holder which can hold many different pages. For example information needed, photo slider and so on so forth. All pages that need to have this default layout can be placed in this Default Master page's Content Place Holder. The design is shown in Figure 4.5.





#### **CHAPTER 4: SYSTEM DESIGN**

### 4.3.2 Default Page/ Home Page Design

This is the design of a Default Page/ Home Page. This page is one of the pages that is placed in Default Master Page's Content Place Holder. Within this page, it will have its own content. The design is shown in Figure 4.6.



Figure 4.6 Default Page/ Home Page Design

## 4.3.3 Nested Master Page Design

This is a nested Master Page. It is nested in the Content Place Holder of Default Master Page. This is a nested Master page simply because within this page it contains another Content Place Holder which can hold other pages. In this page, there is a tree view navigation allows user to navigate to any pages easily. It display all the navigation links in a tree view. The design is shown in Figure 4.7.





Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

# 4.3.4 Details Page Design

This detail page is refer to all the pages that display information only and do not include any functionalities. For instance, Discover Malaysia Page, Plan Your Trips Page, Checklist Page and Experience Page. The design is shown in Figure 4.8.





# 4.3.5 Attractions Information Page Design

This is the design of Attractions Information Page. In this page, all the attractions information will be displayed and this information is retrieved from database. The design is shown in Figure 4.9.





# 4.3.6 Photo Gallery Page Design

The design of Photo Gallery Page. In Figure 4.10 the photos of the attractions and photo gallery title links allow users to navigate to the photo gallery. Figure 4.11 shows the design of how all the photos in a Photo Gallery are displayed.



Figure 4.10 Photo Gallery Page Design I



Figure 4.11Photo Gallery Page Design II

### 4.3.7 Accommodation Page Design

In this page, users can enter their search criteria and enter "Search" button to search for any hotels information. Users will redirect to another page to view the search result. Figure 4.12 shows the design of Accommodation page.

Book Your Trip Today	
Search For Hotel	Content Place Holder (Nested Master Page)

Figure 4.12 Accommodation Page Design

### 4.3.8 Login Page Design

Figure 4.13 shows the design of Login Page. Registered users or admin can login to the system using the correct username and password.

LOG IN Log in On	line Travel Assistant	
Username:	Forget your Password?	Content Place Holder (Default Master Page)



#### 4.3.9 Register Page Design

Figure 4.14 shows the design of Register Page. A registration form will be shown in this page. Users have to enter the required information in order to register as a member. A "Check Availability" link allows users to check the availability of their username.

r			
REGISTRATION			
Username :		]	
	Check Availabilitv		
Password :		]	
First Name :		]	Content Place
Last Name :		]	Holder
Contact Number :			(Default
Email :			Master Page)
Country :		J	
Type the word:	CAPTCHA image	]	
		Register	

Figure 4.14 Register Page Design

### 4.3.10 Forgot Password Page Design

Figure 4.15 shows the design of Forgot Password Page. User can navigate to this page from the Login Page by clicking "Forgot Password" link.

Lost your Password? Please enter your registered email address. You will receive your login details via email.	
Forget Your Password ? Enter your email address:	Content Place Holder (Default Master Page)
Please wait few second to receive you email Submit	



#### **CHAPTER 4: SYSTEM DESIGN**

### 4.3.11 Change New Password Page Design

Figure 4.16 shows the design of Change Password Page. Registered users and administrators can navigate to this page when they want to change new password. They can only access after login. This page will be placed in Member/ Admin Master Page's Content Page Holder.

Change New Password for your account	
Current Password :	Content Place Holder (Member /Admin Master Page)

Figure 4.16 Change New Password Page Design

#### 4.3.12 Member Master Page Design

Figure 4.17 shows the design of Member Master Page. This master page is used for every pages that a registered user can access after login. Within the master page, it has a Content Place Holder which holds the pages that want to display to users such as Update Profile Page.





#### **CHAPTER 4: SYSTEM DESIGN**

## 4.3.13 Update Member Profile Page Design

Figure 4.18 shows the design of Update Member Profile Page. This page is placed in the Content Place Holder of Member Master Page. Members after login can view their personal details and update any information at any time.



Figure 4.18 Update Member Profile Page

# 4.3.14 Check Currency Page Design

Figure 4.19 shows the design of Check Currency Page. This page allows members to check the latest currency exchange rate. Members key in the currency amount that they would like to exchange and get the exchange rate by clicking "Convert" button designed in the page. The exchange rate will be displayed at the "Result" area.

Checkt	the latest currency exchange rate	
Amou From To :	int:	Content Place Holder (Member Master Page)
	RESULT :	



Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.
# 4.3.15 Path Planning Page Design

Figure 4.20 shows the design of Path Planning Page. An interactive Google Map is included in this page to allows users to click and select the places that they want to go. Users "Click Get Direction" button to start planning the order of places to visit and get to know how to go to that places. The direction will display on direction panel. Click "Start Over" to plan the order of places again.



Figure 4.20 Path Planning Page Design

# 4.3.16 Search Nearby Places Page Design

Users enter Search Nearby Places Page to search any stores and places nearby where they are located. In this page, users can understand more about the places and search nearby places' information . A Google Map is included to show the location of each and every nearby places. Figure 4.21 shows the design of Search Nearby Places Page.



Figure 4.21 Search Nearby Places Page Design

Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

# 4.3.17 Search Type of Places Page Design

Figure 4.22 shows the design of Search Type of Places Page. A Google Map will be placed in Google Maps Panel. Users can type in keywords to filter the places that is found, select the type of places from a dropdown list and also the select different radius which means users can select to search places within a specific distance.



Figure 4.22 Search Type of Places Page Design

# 4.3.18 Weather Forecast Page Design

Figure 4.23 shows the design of Weather Forecast Page. This Page allows users get the up-todate current weather information and also weather forecast for the following 5 days.





Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

#### 4.3.19 Budget Estimator Page Design

Figure 4.24 shows the design of Budget Estimator Page. This page consists of two dropdown list which allows user to select the place and also the travel style. Users click "Estimate" button to see the average daily Travel Cost.

Budget Estimator         Which place are you going?         Select your travel style :         Select your travel style :         Estimate	Content Place Holder (Member Master Page)

Figure 4.24 Budget Estimator Page Design

### 4.3.20 Budget Planner Page Design

Figure 4.25 shows the design of Budget Planner Page. This page is designed to help users to divide the money that they have saved or planned to used in trips into different portion. For example, amount of money that is recommended to used in different category.

Budget Planner Total amount vou have saved up for vour Duration Of Trip: Amount of person : Each person each day may spe	trip :	Content Place Holder (Member
Food: Transportation: Accommodation: Shopping: Expenditure before trip: Other activities:		Master Page)



#### 4.3.21 Travel Budget Calculator Page Design

Figure 4.26 shows the design of Travel Budget Calculator Page. This page allows user to enters the money that they plan to spend or the money that they have spent in different category, then help users to calculated the to the total. A "Save" button is created for users who wants to save the calculated result.

	Travel Budget Calculator			
	Before you go :			
	Air Travel :			
	Transportation:			Content Place
	Hotel & Meals:		$\geq$	(Member
	Sightseeing & Activities:		[	Master Page)
	Other Expenses:			
	TOTAL:			
Calculate	Save			

Figure 4.26 Travel Budget Calculator Page

# 4.3.22 View and Print Budget Record Page

Figure 4.27 shows the user interface of print budget record. After users save their calculated result into database, they can view and print the budget record.

Title	
Budget Record:	Content Place Holder (Member Master Page)
Page: 1 2 3	
Print	



# 4.3.23 Submit Travel Tip Page Design

Figure 4.28 shows the design of Submit Travel Tip Page. This page consists a form which allows users to fill in some details and share the travel tip to other visitors.

Submit Travel Tip			
Title :	]		
City :	]		
Category :	]		Content Place Holder
Tip :		7	(Member Master Page)
Submit			

Figure 4.28 Submit Travel Tip Page Design

# 4.3.24 Feedback Page Design

Figure 4.29 shows the design of Feedback page. This page consists a feedback form that allows user to send feedback to the admin.

	Feedback Form		
Subject :		Co	ntent Place
Feedback :			lder Iember aster Page)
Submit			



# 4.3.25 Admin Master Page Design

Figure 4.30 shows the design of Admin Master Page. This master page is used for every pages that an administrator can access after login. Within the master page, it has a Content Place Holder which holds the pages that want to display to administrators such as Add Admin, Manage Photos Information and so on.



Figure 4.30 Admin Master Page Design

# 4.3.26 Update Admin Profile Page Design

Figure 4.31 shows the design of Update Admin Profile Page. This page allows administrator to view and update their personal information.





Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

### 4.3.27 Add Admin Page Design

Figure 4.32 shows the design of Add Admin page. This page is similar to register page. The only differences is, only administrators are allowed to add another person as an administrator. The Add Admin form require existence administrators to fill in the new administrator details.

Username :	Add a NEW Admin		
Password : First Name : Last Name : Contact No : Email :		Add	Content Place Holder (Admin Master Page)

Figure 4.32 Add Admin Page Design

# 4.3.28 View Feedback Page Design

Figure 4.33 shows the design of View Feedback Page. Administrators can view the feedback sent from any members. This page will include all the details of the feedback.





Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

## 4.3.29 Manage Admin Accounts Page Design

Figure 4.34 shows the design of Manage Admin Accounts Page. Administrators can view most of the details of administrator and can delete any administrator from the database.

	N	Manage Admi	n Accounts				
	Username	First Name	Last Name	Contact No	Email		
Delete Delete							Content Place Holder
Delete						ĺ	( Admin Master Page)
						)	

Figure 4.34 Manage Admin Accounts Page Design

# 4.3.30 Manage Member Accounts Page Design

Figure 4.35 shows the design of Manage Member Accounts Page. Administrators can view all details of all members and can delete any members from the database.



Figure 4.35 Manage Member Accounts Page Design

### 4.3.31 Upload New Photos Page Design

Figure 4.36 shows the design of Upload New Photos Page Design. This page consists of file upload control which allows administrator to choose the photos from computer and upload. Besides, administrators also have to write the description for the uploaded photo. Administrators also can check the photos that uploaded recently.

Qu	uick Navigatio	Des Stat	Upload New Ph Choose File cription : e :	lotos		Content Place Holder ≻ (Admin Master Page)
Pho	to Uploaded	Recently				
ID	Filename	FilePath	Previewimage	description	state	
			image			

Figure 4.36 Upload New Photos Page Design

# 4.3.32 Edit Photo Information Page Design

Figure 4.37 shows the design of Edit Photo Information Page. This page allows administrators to edit the photo information. Additionally, administrators can delete any photos from the database.



Figure 4.37 Edit Photo Information Page Design

#### 4.3.33 Add Attractions Information Page Design

Figure 4.38 shows the design of Add Attraction Information Page. This page allows administrators to add attractions information to the database. Administrators have to entered all the attractions details.



Figure 4.38 Add Attractions Information Page Design

#### 4.3.34 Edit Attraction Information Page Design

Figure 4.39 shows the design of Edit Attraction Information Page. This page allows administrators to edit the attractions information. Additionally, administrators can delete any attractions from the database.



Figure 4.39 Edit Attractions Information Page Design

## 4.4 Use Case Diagram

Use case diagram is used to describe the basic function of the information system. It is a graphic depiction that illustrates how user interact with the elements of the system. Figure 4.40 is the use case diagram for this proposed system. The use case descriptions can be referred to APPENDIX D-1.





# 4.5 Sequence Diagram

Sequence diagram is one kind of interaction diagram. It describes how a group of objects collaborate with each other in some behavior. In sequence diagram, the sequence of messages among the objects are shown. Figures below show all the sequences diagram that capture the behaviors of each scenario in this proposed system.



Figure 4.41 Sequence Diagram for view Home page, Attraction Information page, Photo Gallery page, and Feedback page, Details page



Figure 4.42 Sequence Diagram for search and book hotels



Figure 4.43 Sequence Diagram for User register



Figure 4.44 Sequence Diagram for User / Administrator logout



Figure 4.45 Sequence Diagram for User / Administrator login



Figure 4.46 Sequence Diagram for User / Administrator forgot password



Figure 4.47 Sequence Diagram for User / Administrator change password



Figure 4.48 Sequence Diagram for User / Administrator view and update profile



Figure 4.49 Sequence Diagram for check currency rate, plan path, search places, and check weather forecast



Figure 4.50 Sequence Diagram for post travel tips and feedback



Figure 4.51 Sequence Diagram for calculate travel budget



Figure 4.52 Sequence Diagram for estimate and plan budget



Figure 4.53 Sequence Diagram for add admin accounts and add attraction information



Figure 4.54 Sequence Diagram for delete admin/member account



Figure 4.55 Sequence Diagram for upload new photos



Figure 4.56 Sequence Diagram for update photo information and attractions information

### 4.6 Database Design

Database design is one of the important design phase in order to produces a proper system with accurate information. In this design phase, detailed data models will be produced. A well design database will meet users' need and can be easily accommodate any changes.

### 4.6.1 Entity Relationship Diagram (ERD)

Entity Relationship Diagram is a graphical representation that illustrate the relationship among entities in database. In other words, entity relationship diagram depicts the logical structure of the database. Figure 4.57 shows the entity relationship diagram of the proposed system.



Figure 4.57 Entity Relationship Diagram for Online Travel Assistant

In entity relationship diagram (ERD), a given table in relation to another is known as cardinality. Multiplicity is usually used to denote the cardinality of a given table to another. Table 4.1 shows the meaning of each cardinality.

# Table 4.1: Multiplicity

Symbol	Meaning
11	One-to-One Relationship (Mandatory)
1*	One-to-Many Relationship (Optional)
01	Zero-to One Relationship (Optional)
0*	Zero-to- Many Relationship (Optional)

# 4.6.2 Data Dictionary

Data dictionary is the metadata of dictionary, it contains the descriptions of all data objects in the database. One of the benefit to have data dictionary is it can assist programmers or others to refer whenever it is needed in order to understand more about the system. Tables below shows the data dictionary for each entity in the database.

Entity	Attributes	Description	Data Type	Allow
Name				Null?
admin	aID	Unique identity (Auto generated ID)	int	No
		for admin		
	aUsername	Username created by admin for login	varchar(50)	No
	aPassword	Password created by admin for login	varchar(50)	No
	aFirstname	First name of the admin	varchar(128)	No
	aLastname	Last name of the admin	varchar(128)	No
	aContactno	Contact number of the admin	varchar(50)	No
	aEmail	Email address of the admin	varchar(64)	No
	aCreatedon	The date of the admin account is	datetime	No
		created		
	aModifiedon	The date of the admin account's	datetime	No
		information is modified.		

Table 4.2admin entity - Store admin information

Entity	Attributes	Description	Data Type	Allow
Name				Null?
member	mID	Unique identity (Auto generated ID)	int	No
		for member		
	mUsername	Username created by member for	varchar(50)	No
		login		
	mPassword	Password created by member for	varchar(50)	No
		login		
	mFirstname	First name of the member	varchar(128)	No
	mLastname	Last name of the member	varchar(128)	No
	mContactno	Contact number of the member	varchar(50)	No
	mEmail	Email address of the member	varchar(64)	No
	mCountry	Country of the member come from	varchar(50)	No
	mCreatedon	The date of the member account	datetime	No
		created		
	mModifiedon	The date of the member account's	datetime	No
		information modified.		

Table 4.3member entity - Store member information

Table 4.4place entity - Store attractions information

Entity	Attributes	Description	Data Type	Allow
Name				Null?
place	placeID	Unique identity (Auto generated ID)	int	No
		for attractions		
	placeName	The name of the attraction	varchar(50)	No
	description1	First description of the attraction	varchar(max)	No
	description2	Second description of the attraction	varchar(max)	Yes
	description3	Third description of the attraction	varchar(max)	Yes
	state	The state of the attraction located	varchar(50)	No

Entity	Attributes	Description	Data Type	Allow
Name				Null?
photo	photoID	Unique identity (Auto generated ID)	int	No
		for photo		
	FileName	File name of the photo	varchar(200)	No
	FilePath	Path that stores the photo	varchar(50)	No
	description	Description of the photo	varchar(200)	No
	state	The state of the place in the photo	varchar(50)	No
		belongs		

Table 4.5	photo entity	- Store photos	information
-----------	--------------	----------------	-------------

Table 4.6feedback entity - Store feedback information

Entity	Attributes	Description	Data Type	Allow
Name				Null?
feedback	fID	Unique identity (Auto generated ID)	int	No
		for feedback		
	fUsername	Username of the member who posted	varchar(50)	No
		the feedback		
	fSubject	Subject of the feedback	varchar(150)	No
	fFeedback	Details of the feedback	varchar(max)	No
	fDate	The date of the feedback posted	datetime	No

Table 4.7traveltip entity - Store travel tips information

Entity	Attributes	Description	Data Type	Allow
Name				Null?
traveltip	tipID	Unique identity (Auto generated ID) for	int	No
		travel tips		
	title	The title of the travel tips	varchar(50)	No
	city	The city of the travel tips related	varchar(50)	No
	category	The category of the travel tips	varchar(50)	Yes
	tip	Details of the travel tips	varchar(max)	No

tipUsername	Username of the member who shared	varchar(50)	No
	the travel tips		
tipdate	The date of the travel tips shared	datetime	No

# Table 4.8budgetRecord entity - Store budget information saved by member

Entity	Attributes	Description	Data Type	Allow
Name				Null?
budgetR	recordID	Unique identity (Auto generated	int	No
ecord		ID)		
	tripname	The name of the trip	varchar(Max)	No
	recordUsername	Username of the member who	varchar(50)	No
		saved the budget record		
	passport	Amount of money spent on	decimal(18,2)	No
		passport before travel		
	medication	Amount of money spent on	decimal(18,2)	No
		medication before travel		
	Insurance	Amount of money spent on	decimal(18,2)	No
		insurance before travel		
	childCare	Amount of money spent on child	decimal(18,2)	No
		care before travel		
	petBoarding	Amount of money spent on pet	decimal(18,2)	No
		boarding before travel		
	Luggage	Amount of money spent on	decimal(18,2)	No
		luggage before travel		
	sum1	The total of money spent before	decimal(18,2)	No
		travel (passport, medication,		
		insurance, child care, pet		
		boarding, and luggage)		
	airfare	Amount of money spent on airfare	decimal(18,2)	No
		(air travel)		
	baggage	Amount of money spent on	decimal(18,2)	No
		checked baggage fees (air travel)		

airportParking	Amount of money spent on airport	decimal(18,2)	No
	parking (air travel)		
airportTransfer	Amount of money spent airport	decimal(18,2)	No
	transfer (air travel)		
sum2	The total money spent on air	decimal(18,2)	No
	travel(airfare, checked baggage,		
	airport parking, and airport		
	transfer)		
carRental	Amount of money spent on car	decimal(18,2)	No
	rental		
railTicket	Amount of money spent on rail	decimal(18,2)	No
	tickets		
busFares	Amount of money spent on taxis,	decimal(18,2)	No
	subways and bus		
sum3	The total money spent on	decimal(18,2)	No
	transportation (car rental, rail		
	tickets, taxis, subways and bus		
	fares)		
roomRate	Amount of money spent on	decimal(18,2)	No
	accommodation		
breakfast	Amount of money spent on	decimal(18,2)	No
	breakfast		
lunch	Amount of money spent on lunch	decimal(18,2)	No
dinner	Amount of money spent on dinner	decimal(18,2)	No
snacks	Amount of money spent on snacks	decimal(18,2)	No
sum4	The total money spent on hotels &	decimal(18,2)	No
	meals (room rate, breakfast,		
	lunch, dinner, and snacks)		
tour	Amount of money spent on tour	decimal(18,2)	No
activityFees	Amount of money spent on	decimal(18,2)	No

	activities		
entertainment	Amount of money spent on entertainment	decimal(18,2)	No
souvenirs	Amount of money spent on souvenirs	decimal(18,2)	No
sum5	The total money spent on sightseeing & activities (tour, activity fees, entertainment, shopping and souvenirs)	decimal(18,2)	No
otherExpenses	Amount of money spent on other expenses	decimal(18,2)	No
Total	The overall total money spent for travel (amount of money before go for travel, airfares, transportation, hotels & meals, sightseeing & activities, and other expenses)	decimal(18,2)	No

# 4.7 Summary

The interface conceptual design, site architecture and also all the user interface design are covered at the beginning of this chapter. With these user interface design, author had a better understanding when implement the actual system. A well designed user interface will definitely useful when it comes to implementation phase. On the other hand, sequence diagrams are included in this chapter which it expresses more about the interaction between users and the system. Moreover, a database design also included as it can illustrate the relationship of entities in data model. As a whole, design phase provide a deep understanding to author before system implementation.

# **CHAPTER 5: IMPLEMENTATION AND DEVELOPMENT**

### 5.0 Introduction

Implementation phase can be known as a phase where it describes how the system is developed. The development tools must be prepared before it can start to implement this system. In this chapter, the system requirement to install the system and some explanation on how to develop the system will be included.

# 5.1 System Development

In order to develop Online Travel Assistant, there are several software that have been installed. There are:

### 1. Microsoft Visual Studio 2010 Ultimate

-Use to develop this system

# 2. Microsoft SQL Server 2008 R2

-Use to manage database of Online Travel Assistant.

# 3. Internet Information Server (IIS), previously known as Internet Information Services

-Use to support HTTP(Hypertext Transfer Protocol) and SMTP (Simple Mail Transfer Protocol).

Below are the development tools that has been used to develop this system.

- ASP.NET is used as the main programming language for interfaces design.
- C# is used to complete the code behind for functionality
- JavaScript(JS) is used to code any function that is related to Google Maps API.

# 5.2 System Implementation

In this section, explanation for the implementation of some of the functionality in this system will be included. The explanation will be shown. Below are some of the selected functionality in the system.

# • Send email to inform user his/her username and password used SMTP

In this proposed system, there is a "Forgot Password" link which allows user to click when he/she has forgotten his/her password or username. When this link is clicked, the "Forgot Password" page will be loaded. In this page, the system allow user enter his/her registered email address. After that, an email will be sent to the user to inform the username and password from the website email address.

IIS must be installed in order to set up SMTP service to allow Online Travel Assistant website address to send email to user and also allow this system to interact with database and SMTP service.

IIS(Internet Information Server) is a Microsoft Web Server, it supports several services. For example, FTP service and SMTP service. With the help of Internet Information Manager, author can manage the services easily. SMTP is the short form of Simple Mail Transfer Protocol which is an internet standard for electronic mail. It enable different mail server to be communicate (send and receive email). Figure 5.1 shows how SMTP server works.



Figure 5.1 How does SMTP works. (genesisjava.com. 2011)

# • Search and Book Hotel feature used Third Party Website

This features is implemented by using third party website (hotelcombined.com). All the hotels are actually search from third party website. User will be redirect to the another window to view and book hotels. Figure 5.2 shows how is this features works.



Figure 5.2 Search and Book Hotel

# • Check latest currency rate feature used Google Finance API

This feature allows user to check the latest currency rate, user enters the amount of money that would like to convert and check the latest currency exchange rate from / to the type of currency selected. The data of the currency rate is get from Google Finance API.

# • Path planning feature used Google Directions API

Google Directions API is used in the path planning features. A Google map is shown in the website which allows user to click and select the attractions that they want to go and click "get directions" to know the directions and the order of place to visit.

# • Search Places feature used Google Places API

Google Places API provides numerous library which allows developers to use and develop any application that need to search places according to geo-location. Google Places API is used in the Search Places feature. A Google Maps is shown in the page and display the search result. Users can choose to search nearby places or search the types of places within a specific area. Users need to input search criteria to search places.

# • Weather Forecast feature used Yahoo Weather API

The weather forecast feature in this proposed system used Yahoo Weather API. This API provides RSS feeds with information about the current weather and weather forecast for the following few days. In the proposed system, weather forecast feature allows users to check the current weather and weather forecast. Users can check weather information by selecting the location in a dropdown list provided in the page.

# • "CAPTCHA" image used in Registration form

A "CAPTCHA" image is used in Registration form to avoid spamming. User is required to type the correct word that shown in "CAPTCHA" image before he/she can successfully register as a member.

# 5.3 System Requirement

There are certain requirements have to meet, before the system can be implemented and utilized on client's computer or any other personal computer that wants to implement or utilize the system. Due to the speed and performance of a computer may affect the performance of the system. Therefore, any computer that used to implement or utilizing the system has to install some of the tools or software that are needed. Besides, computers with better specification is recommended.

# 5.3.1 Hardware Requirements

Hardware requirement is the minimum architecture of computer that supports the system. The minimum software requirement to implement and utilize this system. Table 5.1 shows the hardware requirements for this proposed system.

#### CHAPTER 5: IMPLEMENTATION AND DEVELOPMENT

Hardware Description	Minimum Requirement	Recommended
Microprocessor	1.4M Hz	3.2M Hz
RAM	256MB	2GB
Hard Disk	80GB	250GB
Keyboard	101 Keys	106 Keys
Mouse	Serial	USB
Monitor	15" (Colour)	17" (Colour)

# Table 5.1Hardware Requirements

# 5.3.2 Software Requirements

Software requirement is the minimum specification for a software that supports the system. The minimum software requirement to implement and utilize this system. Table 5.2 shows the software requirement that support this proposed system.

# Table 5.2Software Requirements

Software Description	Minimum Requirement	Recommended
Operating System	Microsoft Windows XP	Microsoft Windows 7 / 8
Platform	Microsoft Visual Studio 2010	Microsoft Visual Studio 2010
	Ultimate	Ultimate
Browser	Internet Explorer 6.0 /	Google Chrome
	Firefox 2.0	
Database System	MSSQL Server 2008 Service	MSSQL Server 2008 R2
	Pack 2	
Windows Features	Internet Information Server	Internet Information Server
	(IIS)	(IIS)
Others	Internet Information Server	Internet Information Server
	(IIS) Manager	(IIS) Manager

### CHAPTER 5: IMPLEMENTATION AND DEVELOPMENT

# 5.4 Architectural Model - Logical Implementation

# Table 5.3Logical Implementation



# 5.4.1 Development Layer

In development layer, it is comprised of integrated development environment (IDE) and operating system. Windows 8 is used as the operating system to implement the proposed system.

# 5.4.2 Client Layer

In this layer, it includes all the web development techniques that is used on the client-side. CSS (Cascading Style Sheet) is responsible in designing the user interface and alignment, colour, position of components and so on so forth. However, AJAX(Asynchronous JavaScripts amd XML) and jQuery is used to design photo slider and so on.

# 5.4.3 Server Layer

Server layer is the layer that provides the corporate to make services and resources available on the client side. This proposed system is operated at Windows 8 and the server scripting language is ASP.NET. Internet Information Service (IIS) provides the functionality to response the resource requests and web services. Besides, Microsoft SQL Server 2008 R2 is used for data storage. With Server layer, web services can be called and output as JSON(JavasSript Object Notation), XML or RSS format.

### 5.4.4 Web Services Layer

Web services Layer is the layer that collect all the web services that has been used in this proposed system. The web services that is use is Google Maps API v3 and Yahoo Weather API RSS.

#### 5.5 Online Travel Assistant Screenshot and User Manual

The screenshot for this proposed system can be referred to APPENDIX E-1. However, the User Manual can be referred to APPENDIX F-1.

#### 5.6 Summary

As a whole, this chapter covered the implementation and development of the system. The explanation for some of the feature implementation, software requirements and hardware requirements were included. Furthermore, screenshots of the system and user manual were provided after the implementation was done.

#### CHAPTER 6: SYSTEM TESTING

#### **CHAPTER 6: SYSTEM TESTING**

#### 6.0 Introduction

System testing is one of the important process in software development life cycle. This is simply because by doing system testing, the developers can ensure the quality of the system before it can deliver to the user. System testing tests the entire system which also includes the design of the system and the believed expectation of the customers. In this process, all the function requirement specification will be tested. In order to make sure the system is working fine, all the test cases will be tested and recorded in this chapter.

### 6.1 Unit Testing

Unit testing can be known as one of the most important level in system testing. In unit testing, each and every components in the website will be tested individually with few scenario as it can help developers to determine and eliminate any bugs in the early stage. All the functionality in the components will tested. For instance, the navigation links in the webpage, insert, update and delete the contents in the webpage and so on so forth.

#### 6.2 Test Case

Test case is defined as a set of conditions which can be used to determine whether the system is working properly as it was originally intend to do and meet the user's basic requirement. All the possible test cases was tested on each components of the website. Below are the record of each test case.

#### 6.2.1 Global Navigation Bar

Test Case ID	UT01
Objective	To verify Home page link works correctly in Global Navigation Bar.
<b>Pre-Conditions</b>	Visit Online Travel Assistant Website.
Test Steps	Click on Home page in Global Navigation Bar .
Expected Result	Home page is loaded.
Pass / Fail	Pass

Table 6.1Home page link

# CHAPTER 6: SYSTEM TESTING

Test Case ID	UT02
Objective	To verify Discover Malaysia page link works correctly in Global
	Navigation Bar.
<b>Pre-Conditions</b>	Visit Online Travel Assistant Website.
Test Steps	Click on Discover Malaysia page in Global Navigation Bar.
Expected Result	Discover Malaysia page is loaded.
Pass / Fail	Pass

# Table 6.2Discover Malaysia page link

# Table 6.3Attractions page link

Test Case ID	UT03
Objective	To verify Attractions page link works correctly in Global Navigation
	Bar.
<b>Pre-Conditions</b>	Visit Online Travel Assistant Website.
Test Steps	Click on Attractions page in Global Navigation Bar.
Expected Result	Attractions page is loaded.
Pass / Fail	Pass

# Table 6.4Photo Gallery page link

Test Case ID	UT04
Objective	To verify Photo Gallery page link works correctly in Global Navigation
	Bar.
<b>Pre-Conditions</b>	Visit Online Travel Assistant Website.
Test Steps	Click on Photo Gallery page in Global Navigation Bar.
Expected Result	Photo Gallery page is loaded.
Pass / Fail	Pass

### CHAPTER 6: SYSTEM TESTING

Test Case ID	UT05
Objective	To verify Accommodation page link works correctly in Global
	Navigation Bar.
<b>Pre-Conditions</b>	Visit Online Travel Assistant Website.
Test Steps	Click on Accommodation page in Global Navigation Bar.
Expected Result	Accommodation page is loaded.
Pass / Fail	Pass

# Table 6.5Accommodation page link

Table 6.6Plan Your Trips page link

Test Case ID	UT06
Objective	To verify Plan Your Trips page link works correctly in Global
	Navigation Bar.
<b>Pre-Conditions</b>	Visit Online Travel Assistant Website.
Test Steps	Click on Plan Your Trips page in Global Navigation Bar.
Expected Result	Plan Your Trips page is loaded.
Pass / Fail	Pass

# Table 6.7Experience page link

Test Case ID	UT07
Objective	To verify Experience page link works correctly in Global Navigation
	Bar.
<b>Pre-Conditions</b>	Visit Online Travel Assistant Website.
Test Steps	Click on Experience page in Global Navigation Bar.
Expected Result	Experience Page is loaded.
Pass / Fail	Pass
## 6.2.2 Login/Logout Page

## Table 6.8Login page link

Test Case ID	UT08
Objective	To verify Login link works correctly in Quick Navigation Bar.
<b>Pre-Conditions</b>	Visit Online Travel Assistant Website.
Test Steps	Click on Login page.
Expected Result	Login page is loaded.
Pass / Fail	Pass

### Table 6.9 Member /Admin Login Success

Test Case ID	UT09
Objective	To test weather login page works correctly.
<b>Pre-Conditions</b>	Click on Login page and Login page is loaded.
Test Steps	1. Insert correct username and password.
	2.Click "Login" button.
Expected Result	Login successfully. The system is then redirect member to Member page
	and redirect admin to Admin page. The username is displayed on the
	page respectively.
Pass / Fail	Pass

Table 6.10Member /Admin Login Failure

Test Case ID	UT10
Objective	To test whether Login page works correctly.
<b>Pre-Conditions</b>	Click on Login page and Login page is loaded.
Test Steps	1. Insert incorrect username and password.
	2. Click "Login" button.
Expected Result	User/ Administrator fail to login. A login failure message appears in the
	login page and required user/administrator to re-enter username and
	password.

Pass / Fail	Pass

## Table 6.11Logout link

Test Case ID	UT11
Objective	To verify Logout link works correctly in Member / Admin page.
<b>Pre-Conditions</b>	Login successfully.
Test Steps	Click on Logout link.
Expected Result	Logged out from the website and direct to Login page.
Pass / Fail	Pass

#### Table 6.12Remember Me checkbox

Test Case ID	UT12
Objective	To verify Remember Me checkbox works correctly.
Pre-Conditions	Checked Remember Me checkbox before login to the website.
Test Steps	1. Insert correct username and password.
	2. Checked Remember Me checkbox.
	3. Click "Login" button.
	4. Click on Logout link to logout from the website.
	5. Click on Login page.
Expected Result	Logout and click on Login page again, the Remember Me checkbox is
	automatically checked. The username and password is displayed on the
	textbox of the respective field and able to login successfully without
	enter the username and password again.
Pass / Fail	Pass

Test Case ID	UT13
Objective	To verify Forgot Password page link works correctly.
<b>Pre-Conditions</b>	Login page is loaded.
Test Steps	1. Click on Forgot Password link.
	2. Enter registered email address.
	3. Click "Submit" button.
Expected Result	Receive an email which include the username and password.
Pass / Fail	Pass

## Table 6.13Forgot Password page link

## 6.2.3 Register Page

Table 6.14Username textbox and Check Availability	link
---	------

Test Case ID	UT14
Objective	To verify username textbox and Check Availability link works correctly.
<b>Pre-Conditions</b>	Click on Register page and Register page is loaded.
Test Steps	1. Insert any username.
	2. Click on Check Availability link to verify the existing of username.
Expected Result	If username is not exist in the database, a message with the word
	"Available" will display. If username is already exist in database, an
	error message will display.
Pass / Fail	Pass

Test Case ID	UT15
Objective	To verify password validation works correctly.
<b>Pre-Conditions</b>	Click on Register page and Register page is loaded.
Test Steps	1. Insert password into password textbox with any characters or leave it
	blank.
	2. Insert input into the next textbox.
Expected Result	<ul><li>2. Insert input into the next textbox.</li><li>Password textbox will show a symbol instead of any characters on the</li></ul>
Expected Result	<ul><li>2. Insert input into the next textbox.</li><li>Password textbox will show a symbol instead of any characters on the textbox as it will hide the password value. An error message will display</li></ul>
Expected Result	<ul><li>2. Insert input into the next textbox.</li><li>Password textbox will show a symbol instead of any characters on the textbox as it will hide the password value. An error message will display to notify the incorrect format or the textbox is empty.</li></ul>

#### Table 6.15Password textbox

## Table 6.16 First Name, Last Name, Contact Number, Email, and Country textbox

Test Case ID	UT16
Objective	To verify First Name, Last Name, Contact Number, Email, and Country
	textbox validation works correctly.
<b>Pre-Conditions</b>	Click on Register page and Register page is loaded.
Test Steps	1. Fill in First Name, Last Name, Contact Number, Email, and Country
	textbox.
	2. Fill in the next textbox.
Expected Result	An error message will display to notify the incorrect format or the
	textbox is empty.
Pass / Fail	Pass

Test Case ID	UT17
Objective	To verify "CAPTCHA" image textbox validation works correctly.
Pre-Conditions	Click on Register page and Register page is loaded.
Test Steps	1. Type incorrect word shown in "CAPTCHA" image or leave the
	textbox empty.
	2. Click "Register button"
Expected Result	An error message will show when the incorrect word is entered or when
	the textbox is empty.
Pass / Fail	Pass

## Table 6.17 "CAPTCHA" image textbox

## Table 6.18Registration Form

Test Case ID	UT18
Objective	To verify the registration form works correctly.
<b>Pre-Conditions</b>	All mandatory field is filled.
Test Steps	Click "Register" button to submit the registration form.
Expected Result	If all the information is entered correctly, the registration form will be
	submitted and an success message will show.
	If the word shown in "CAPTCHA" image is entered incorrectly, the
	registration form will not be submitted and required to re-enter.
Pass / Fail	Pass

## 6.2.4 Attractions Page

Test Case ID	UT19
Objective	To verify all different Attractions' states page link work correctly in
	Attractions page.
<b>Pre-Conditions</b>	Attractions page is loaded.
Test Steps	1. Select different attractions' states that shown in the tree view
	navigation bar on the page.
	2. Click on the attractions' states page link
	3. View the result.
Expected Result	Attractions' states page is loaded. All the attractions from that selected
	states are correctly display on the page.
Pass / Fail	Pass

Table 6.19Attractions' states page link

## Table 6.20 "Back to Previous" link

Test Case ID	UT20
Objective	To verify the "Back to Previous" link works correctly.
<b>Pre-Conditions</b>	Attractions' states page is loaded.
Test Steps	Click on "Back to Previous" link
Expected Result	Back to the previous page which is the Attractions page.
Pass / Fail	Pass

#### Table 6.21 "View Image" link

Test Case ID	UT21
Objective	To verify the "View Image" link works correctly.
<b>Pre-Conditions</b>	Attractions' states page is loaded.
Test Steps	Click on "View Image" link
Expected Result	Redirect to the state's photo page.
Pass / Fail	Pass

## 6.2.5 Photo Gallery Page

Test Case ID	UT22
Objective	To verify all different State's photo page link work correctly
Pre-Conditions	Photo Gallery page is loaded.
Test Steps	Click on of the State's photo page link under a photo.
Expected Result	State's photo page will be loaded. All photos in the particular state will
	be shown.
Pass / Fail	Pass

Table 6.22State's photo page link

## Table 6.23"Back to Gallery" link

Test Case ID	UT23
Objective	To verify the "Back to Gallery" link works correctly.
<b>Pre-Conditions</b>	Photo Gallery page is loaded.
Test Steps	Click on "Back to Gallery" link.
Expected Result	Return to the Photo Gallery page.
Pass / Fail	Pass

#### 6.2.6 Accommodation Page

Table 6.24 "Search" link

Test Case ID	UT24
Objective	To verify the "Search" link works correctly.
<b>Pre-Conditions</b>	Accommodation is loaded.
Test Steps	1. Enter all the required search criteria into the respective textbox.
	2. Click "Search" button
Expected Result	Redirect to another page where it shows the results of all hotels.
Pass / Fail	Pass

## 6.2.7 Member / Admin Profile Page

Test Case ID	UT25
Objective	To verify View Profile page links work correctly.
<b>Pre-Conditions</b>	Login successfully and Member / Admin page is loaded.
Test Steps	Click on View Profile page link.
Expected Result	View profile information.
Pass / Fail	Pass

Table 6.25View Profile page link

## Table 6.26Update Profile page link

Test Case ID	UT26
Objective	To verify Update Profile page links work correctly.
<b>Pre-Conditions</b>	Login successfully and Member / Admin page is loaded.
Test Steps	1. Click on Update Profile page
	2. Edit selected field.
	3. Click "Update" button.
Expected Result	Profile information is updated. Latest profile information is displayed.
Pass / Fail	Pass

Test Case ID	UT27
Objective	To verify Change Password page link works correctly.
Pre-Conditions	Login successfully and Member / Admin page is loaded.
Test Steps	1. Click on "Change Password" link.
	2. Fill in required information such as current password and new
	password.
	3. Click "Update" button.
Expected Result	The password will be updated and a update success message will be
	displayed. User/ Administrator required to login a again to use the new
	password.
Pass / Fail	Pass

## Table 6.27Change Password page link

## 6.2.8 Member Page Functionality

Test Case ID	UT28
Objective	To verify Check Currency page link works correctly.
<b>Pre-Conditions</b>	Login successfully and Member page is loaded.
Test Steps	1. Click Check Currency page link in Member page global navigation
	bar.
	2. Enter the amount of money that wish to convert.
	3. Choose the currency type.
	4. Click "Convert" button.
Expected Result	The latest currency exchange rate will display on the Check Currency
	page.
Pass / Fail	Pass

Test Case ID	UT29
Objective	To verify Budget Estimator page link works correctly.
Pre-Conditions	Login successfully and Member page is loaded.
Test Steps	1. Click on Budget Estimator page link in Member page global
	navigation bar.
	2. Enter required information.
	3. Click "Estimate" button.
Expected Result	The estimated budget for each category will display on the Budget
	Estimator page.
Pass / Fail	Pass

## Table 6.29Budget Estimator page link

## Table 6.30Budget Planner page link

Test Case ID	UT30
Objective	To verify Budget Planner page link works correctly.
<b>Pre-Conditions</b>	Login successfully and Member page is loaded.
Test Steps	1. Click on Budget Planner page link in Member page global navigation
	bar.
	2. Enter the amount of money that has been save for the trip.
	3. Click "Plan" button
Expected Result	The amount of money that can be spent on each category based on the
	amount of money entered is planned and will display on Budget Planner
	page.
Pass / Fail	Pass

Test Case ID	UT31	
Objective	To verify Travel Budget Calculator page link works correctly.	
Pre-Conditions	Login successfully and Member page is loaded.	
Test Steps	1. Click on Travel Budget Calculator page link in Member page global navigation bar.	
	2. Enter the amount of money that will probably spend/ plan to spend /	
	already spent on each category.	
	3. Click "Calculate" button to calculate the total amount of money for the	
	trip.	
	4. Click "Save " button to save the record and print it for reference.	
Expected Result	The total amount of money is calculated and the result will display on the	
	Travel Budget Calculator page.	
	If the "Save" button is clicked, all the record will be save in to database	
	and appears save success message.	
Pass / Fail	Pass	

## Table 6.31Travel Budget Calculator page link

### Table 6.32View Budget Record page link

Test Case ID	UT32
Objective	To verify View Budget Record page link works correctly.
<b>Pre-Conditions</b>	Login successfully and Member page is loaded.
Test Steps	Click on View Budget Record page link in Member page global navigation bar.
Expected Result	The travel budget that has been saved in the database will display on View Budget Record page.
Pass / Fail	Pass

Test Case ID	UT33
Objective	To verify "Print" button in View Budget Record page works correctly.
<b>Pre-Conditions</b>	View Budget Record page is loaded
Test Steps	Click "Print" button in the View Budget Record page.
Expected Result	The user's printer will be connected and ready to print the record.
Pass / Fail	Pass

## Table 6.33"Print" button in View Budget Record page

### Table 6.34Path Planning page link

Test Case ID	UT34	
Objective	To verify Path Planning page link works correctly.	
Pre-Conditions	Login successfully and Member page is loaded.	
Test Steps	"Get Direction" link	
	1. Click on Path Planning page link in Member page global navigation	
	bar.	
	2. Select travel attractions on the map.	
	3. Select the preference options such as avoid toll, avoid highway and	
	optimize the route.	
	4. Click "Get Direction" button to display the route.	
	<u>"Start Over" link</u>	
	1. Plan a path and click "Get Direction" button.	
	2. Click "Start Over" button on the Path Planning page to clear all the	
	marked travel attractions and the direction result.	
Expected Result	"Get Direction" link	
	The route is planned and the direction to those attractions will be shown.	
	<u>"Start Over" link</u>	
	All marked attractions and direction result are clear. User can re-select	
	the travel attractions.	
Pass / Fail	Pass	

Test Case ID	UT35
Objective	To verify Submit a Travel Tip page link works correctly.
Pre-Conditions	Login successfully and Member page is loaded.
Test Steps	1. Click on Submit a Travel Tip page link in Member page global
	navigation bar.
	2. Enter the required information such as the tip that would like to share.
	3. Click "Submit" button.
Expected Result	The travel tip stored in database and able to share with other travellers.
	The submit success message will be displayed.
Pass / Fail	Pass

## Table 6.35Submit a Travel Tip page link

## Table 6.36Feedback page link

Test Case ID	UT36
Objective	To verify Feedback page link works correctly.
<b>Pre-Conditions</b>	Login successfully and Member page is loaded.
Test Steps	1. Click on Feedback page link in Member page global navigation bar.
	2. Enter the feedback.
	3. Click "Submit" button.
Expected Result	Feedback stored in database and show success message.
Pass / Fail	Pass

Test Case ID	UT37
Objective	To verify Search Places page link works correctly.
Pre-Conditions	Login successfully and Member page is loaded.
Test Steps	1. Click on Search Places page link in Member page global navigation
	bar.
	2. Select Search Nearby Places or Search Type of Places link.
	3. Navigate to the respective page.
	4. Enter Search criteria to search places.
	5. Search result is displayed on Google Map.
Expected Result	Search results display on Google Map.
Pass / Fail	Pass

## Table 6.37Search Places page link

Table 6.38Check Weather Forecast page link

Test Case ID	UT38
Objective	To verify Check Weather Forecast page link works correctly.
<b>Pre-Conditions</b>	Login successfully and Member page is loaded.
Test Steps	<ol> <li>Click on Check Weather Forecast page link in Member page global navigation bar.</li> <li>Select the location from dropdown list.</li> </ol>
	<ul><li>3. Click "Check" button.</li><li>4. The weather information for the location will be displayed.</li></ul>
Expected Result	Weather information of the selected location display on the page.
Pass / Fail	Pass

## 6.2.9 Admin Page Functionality

Table 6.39	Add Admin	page	link
------------	-----------	------	------

Test Case ID	UT39
Objective	To verify Add Admin page link works correctly.
<b>Pre-Conditions</b>	Login successfully and Admin page is loaded.
Test Steps	1. Click on Add Admin page link in Member page global navigation bar.
	2. Enter new admin details.
	3. Click "Submit" button.
Expected Result	New admin details will be added to the database. A add success message
	will be display.
Pass / Fail	Pass

#### Table 6.40View Feedback page link

Test Case ID	UT40	
Objective	To verify View Feedback page link works correctly.	
<b>Pre-Conditions</b>	Login successfully and Admin page is loaded.	
Test Steps	Click on View Feedback page link in Member page global navigation	
	bar.	
Expected Result	All Feedback from members will be display on the page.	
Pass / Fail	Pass	

Table 6.41View Admin / Member Account page link

Test Case ID	UT41	
Objective	To verify View Admin / Member Account page link works correctly.	
<b>Pre-Conditions</b>	Login successfully and Admin page is loaded.	
Test Steps	Click on View Admin /Member Account page link in Member page	
	global navigation bar.	
Expected Result	All Admin / Member account details will be displayed on the page.	
Pass / Fail	Pass	

Test Case ID	UT42	
Objective	To verify Delete Admin / Member Account page link works correctly.	
<b>Pre-Conditions</b>	Admin / Member Account page can be viewed.	
Test Steps	1. Click "Delete" button beside the admin/member account that would	
	like to be deleted.	
	2. Click "confirm" button in the confirmation alert box.	
Expected Result	A confirmation message will be shown in a alert box. After "confirm"	
	button is clicked, a delete success message will be shown.	
Pass / Fail	Pass	

## Table 6.42Delete Admin / Member Account page link

Table 6.43Edit and Delete Existence Photo page link

Test Case ID	UT43		
Objective	To verify Edit and Delete Existence Photo page link works correctly.		
Pre-Conditions	Login successfully and Admin page is loaded.		
Test Steps	Edit Existence Photo Information		
	1. Click on Edit and Delete Existence Photo page link.		
	2. Click "Edit" link beside the information that would like to update.		
	3. Edit the current information.		
	4. Click "Update" link to update or "Cancel" link to cancel edit.		
	Delete Existence Photo		
	1. Click on Edit and Delete Existence Photo page link.		
	2. Click "Delete" button beside the photo that would like to be deleted		
	from database.		
	3. Click "confirm" button in the confirmation alert box.		
Expected Result	Edit Existence Photo Information		
	The photo information will be updated and will be displayed on the page.		
	Delete Existence Photo		
	The selected existence photo will be deleted from the database and will		
	not be shown on the page anymore.		
Pass / Fail	Pass		

Test Case ID	UT44	
Objective	To verify Upload New Photo page link works correctly.	
Pre-Conditions	Login successfully and Admin page is loaded.	
Test Steps	1. Click on Upload New Photo page link.	
	2. Browse image file location.	
	3. Click "Upload" button.	
Expected Result	Image will uploaded and save to database. A upload success message	
	will be displayed.	
Pass / Fail	Pass	

## Table 6.44Upload New Photo page link

Table 6.45Add New Attractions Information page link

Test Case ID	UT45	
Objective	To verify Add New Attractions Information page link works correctly.	
<b>Pre-Conditions</b>	Login successfully and Admin page is loaded.	
Test Steps	1. Click on Add New Attractions Information page link	
	2. Enter attractions information.	
	3. Click "Add" button.	
Expected Result	Attraction information will be added to the database and a add success	
	message will be displayed.	
Pass / Fail	Pass	

Test Case ID	UT46		
Objective	To verify Edit and Delete Attractions Information page link works		
	correctly.		
Pre-Conditions	Login successfully and Admin page is loaded.		
Test Steps	Edit Attractions Information		
	1. Click on Edit and Delete Attractions Information page link.		
	2. Click "Edit" link beside the information that would like to update.		
	3. Edit the current information.		
	4. Click "Update" link to update or "Cancel" link to cancel edit.		
	Delete Attractions Information		
	1. Click on Edit and Delete Attractions Information page link.		
	2. Click "Delete" button beside the attraction information that would like		
	to be deleted from database.		
	3. Click "confirm" button in the confirmation alert box.		
Expected Result	Edit Attractions Information		
	The attractions information will be updated and will be displayed on the		
	page.		
	Delete Attractions Information		
	The selected attractions will be deleted from the database and will not be		
	shown on the page anymore.		
Pass / Fail	Pass		

## Table 6.46 Edit and Delete Attractions Information page link

#### 6.3 Integration Testing

Integration testing is another testing process that group all the units of the system and tested in various ways. One of the ways is test in different browsers. Table 6.1 shows one of the integration test that was tested.

Test Case ID	IT01
Objective	To ensure Online Travel Assistant can be run on different browsers
Test Environment	Google Chrome, Internet Explorer 10
Expected Result	Online Travel Assistant able to run properly in different browsers.
Pass / Fail	Pass

#### 6.4 Summary

In order to ensure Online Travel Assistant can work properly, unit testing and integration testing is a must. Generally, the testing phase plays an important role in developing any system. There might be some situation that author was not realized until the testing was done. As a whole, the testing report able to help author to fixed some of the bugs.

#### **CHAPTER 7 CONCLUSION**

#### 7.0 Introduction

In this chapter, the conclusion of this proposed system will be covered. This includes the project review, achievement, system limitation and last but not least the future enhancement of this proposed system.

#### 7.1 **Project Review**

First and foremost, the reason to develop this project is to provide an easy access of information about the attractions in Peninsula Malaysia and provides some convenient features that may help them in planning their trips. A tourism website with substantial travelling information is needed by tourists before travelling especially self-help travellers. There are problems exist among the tourists such as insufficient information provided in travel brochures and some existing website, have difficulties in estimating their travel budget, planning the order of places to visit and so on.

Based on the problem faced, a proposed solution was formed to solve or minimize the current issues. For this project, some features such as budget estimating and path planning feature will cover all the cities in peninsula Malaysia. The proposed website will make to be more convenience in order to allows users to navigate and get information. Therefore, the design and layout of the system is made to be simple and easy to use. Users require lesser time to understand how the system is actually works.

Basically, this system not only design to provide information to travellers, it also allows administrators to manage the tourism information to be shared on the website. Authorized staff with username and password can login to the admin page to manage some of the information to be provided, membership of members and also unauthorized any administrators.

In order to develop the system, Microsoft Visual Studio 2010 Ultimate is chosen as the development software and MS SQL Server 2008 used to manage database. The system is fully implemented after go through several phases. With the help of testing phase, majority of the bugs in the system are solved. The summary of each phase is covered at the last section of each chapter.

#### 7.2 Achievement

The proposed system has provided an information platform that meets some of the requirements of travellers. Some tourism information is included in the website. For example, the attractions information, photo gallery and some of the features that allow travellers to get real time information. The functions provided in the website may help travellers to plan their trips.

In this proposed system, a budget estimating feature was embedded. The budget estimating feature which includes three sub functions, they are budget estimator, budget planner and travel budget calculator. This feature is designed to help travellers to have a better understanding on how to plan their budget, what is the living standard in Malaysia and last but not least allow travellers to keep track of their budget during the trips.

Furthermore, the feature that allow travellers to check the latest currency exchange rate is successfully included in the proposed system. This feature gets the real time currency information to users without require users to go through a complex procedure. Users do not need to proceed to other websites in order to check the currency. Instead, this proposed system allows users to get latest currency information easily while they are browsing tourism information.

Moreover, a Google Map was embedded in this system. With help of Google Maps API, users able to plan the order of places to visit and get the direction to reach the places. There are few functionality also built in Google Maps such as allow user to know the weather of each location, search nearby places, and also search type of places easily. Besides, the search and book hotel feature in this proposed system also bring conveniences to users. User can search and book the hotel easily with the help of third party websites.

On the other hand, this proposed system also provides management function. This function is provided to any administrators to manage the information to be store in the database and share on the website. For instance, add, update, delete and view photos and attractions information.

#### 7.3 Limitation

In overall, the objectives stated in this proposed system were accomplished. Although the system was tested using several possible test cases, yet there are some limitation in this system. Below are the limitation of the proposed system.

#### • Attractiveness of User Interface

The user interface for this proposed system is not attractive enough, if compared to some of the tourism website. For the available tourism websites, their user interface are quite colourful and consists more photos and videos. However, the user interface for the proposed system is more likely to be designed in a simple way. Although the user interface is not as colourful as other websites, yet the information can be presented clearly. Light colour is chosen as the main colour of user interfaces.

#### • Tourism information

Due to this proposed system not only designed to provide tourism information to users, but also provides management function to administrator. The tourism information in this proposed system is not as complete as the available tourism websites. In this proposed system, it is only included some basic tourism information.

#### • Search engine of the website

For this proposed system, one of the limitations is website does not include the search website which allows users to search for a particular information . Users only able to search information through site map, but not using the search engine that allows users to enter keywords.

#### 7.4 Future Enhancement

In order to make the proposed system satisfy users' needs, there are several improvement can be done. Below are some of the future enhancement.

save trips

#### • Google Maps calculate round trip

Use Google Maps API to calculate the route trip which is and application of TSP (Travelling Salesman Problem). Reorder the places to visit by setting the first place to visit same as the last places to visit. This function will be very useful when travellers want to plan the order of places to visit start from hotel and back to the hotel after they have visited all the places.

#### • Show top hotels in Google Maps

An additional functionality in this proposed system would probably attract more users and help users in planning their trip. It is undoubtedly true that, travellers will find hotels near their travel location. Hence, if the Google maps that is already integrated in the system can recommend the top hotels near the travel location to users, it will be another useful information.

#### • Provide more tourism information

To make the system to be more useful to users, there is a need to provide more tourism information.

#### • Share tourism information to social networking site

Another attractive features that can be added to system would probably is allow users to share any tourism information in the website to their social networking site, such as Facebook or Twitter. Users can share or recommend any useful information to their friends and family easily.

#### 7.5 Summary

This chapter conclude the proposed system. The overall project review, achievement and limitation of the system and last but not least the future enhancement of the system. After this proposed system is completed, this proposed system has gone through the system testing phase. Most of the bugs are discovered and solve. The details of system design , and system testing was covered in the previous chapters.

Overall, this proposed system has provided several functionalities that may help travellers to plan their trips. Additionally, this proposed system also design to have administrative access. Therefore, administrator can maintain some of the information to be shared to the visitors.

Although, there might be limitation for the system, yet those limitation will not affect much the performance of the system as the system has already full filled the basics users' requirement. Due to time constraint, some of the features are listed as future enhancement in order to make the system to be more user friendly, attractive and more useful to travellers.

#### REFERENCES

#### REFERENCES

C2.com 2005, *Iterative Development*. Available from: <<u>http://c2.com/cgi/wiki?IterativeDevelopment</u>> [Accessed 24 July 2012].

Csse.monash.edu.au 1988, *CSE2305 Topic 13: The Software Development Process*. Available from: <<u>http://www.csse.monash.edu.au/~jonmc/CSE2305/Topics/07.13.SWEng1/html/text.htm</u> 1> [23 July 2012].

dchamber 2011, *Shortest Path Algorithm Comparison*. Available from: <<u>http://rebustechnologies.com/shortest-path-algorithm-comparison/</u>> [Accessed 21 July 2012].

Designersplayground.com 2011, *The Advantages of PHP | Designer's Playground*. Available from: <<u>http://www.designersplayground.com/pr/the-advantages-of-php/</u> >[ Accessed 15 July 2012].

Edsger Wybe Dijkstra, *Single-Source Shortest Path Problem*, Power Point Slides, The University of Texas at Austin.

Eguide.com.my 2011, *Malaysia Travel Guide | Malaysia places of Interest, Hotels & Information, everything you need to know about Malaysia Tourism*. Available from: < <u>http://www.eguide.com.my/</u>> [Accessed 17 July 2012].

Ehow.com 2008, *The Effects of the Internet on Marketing Tourism / eHow.com*. Available from: <<u>http://www.ehow.com/info\_8066641\_effects-internet-marketing-</u> tourism.html> [Accessed 13 July 2012].

En.wikipedia.org 2012, *Tourism Malaysia - Wikipedia, the free encyclopedia*. Available from: <<u>http://en.wikipedia.org/wiki/Tourism\_Malaysia</u>> [Accessed 26 June 2012].

En.wikipedia.org 2012, *Internet - Wikipedia, the free encyclopedia*. Available from: <<u>http://en.wikipedia.org/wiki/Internet</u>> [Accessed 27 June 2012].

En.wikipedia.org n.d., *Iterative and incremental development - Wikipedia, the free* encyclopedia. Available from: <<u>http://en.wikipedia.org/wiki/Iterative\_and\_incremental\_development</u> >[ Accessed 23 July 2012].

En.wikipedia.org 2012, *Spiral model - Wikipedia, the free encyclopedia*. Available from:< <u>http://en.wikipedia.org/wiki/Spiral\_model</u>> [Accessed 28 July 2012].

En.wikipedia.org 2001, *Bellman–Ford algorithm - Wikipedia, the free encyclopedia.* Available from: <<u>http://en.wikipedia.org/wiki/Bellman%E2%80%93Ford\_algorithm</u>> [Accessed 9 Aug 2012].

Fantasticmalaysia.com 2012, *Fantastic Malaysia Travel - Malaysia's most exciting Website*. Available from: <<u>http://www.fantasticmalaysia.com/</u> >[ Accessed 18 July 2012].

Kep3.com 2002, *KEP3 - Articles*. Available from: <<u>http://kep3.com/en/30Services/60SwDevelopment/Articles/DevMethod.html</u>/> [Accessed 13 Aug 2012].

Pretechno.com 2006, *PRECISION: Where and when to use PHP, ASP or ASP.NET*. Available from: <<u>http://www.pretechno.com/i/where-and-when-to-use-php-asp-asp.net.html</u> > [Accessed 19 Aug 2012].

Sbp-romania.com 2012, *Feature comparison*. Available from: <<u>http://www.sbp-</u> <u>romania.com/Articles/migrating-feature-comparison.aspx</u>> [Accessed 19 Aug 2012]. Seekdotnet.com 2008, *12 Advantages of ASP.NET / Windows Hosting Blog SeekDotNet*. Available from: <<u>http://www.seekdotnet.com/blog/asp-net/12-advantages-of-asp-net/</u>> [Accessed 13 July 2012]. Shikha maheshwar and Dinesh Ch. Jain 2012, A Comparative Analysis of Different types of Models in Software Development Life Cycle. *International Journal of Advanced Research in Computer Science and Software Engineering*, Volume 2 (5, May 2012)

Jageshwar Tripathi 2009, Advantages & disadvantages of various SDLC models. 10 April 2009. Software Methodologies: Blog. Available from: <<u>http://softwaremethodologies.blogspot.com/2009/04/advantages-disadvantages-of-various.html</u>> [Accessed 19 July 2012].

Sotanetwork.com 2012, *SOTA / Smart Online Travel Assistant*. Available from: <<u>http://www.sotanetwork.com/index.cfm</u> > [18 July 2012].

Tdaxp.blogspirit.com 2005, *Dreaming 5th Generation War : tdaxp*. Available from: <<u>http://tdaxp.blogspirit.com/archive/2005/07/20/dreaming-5th-generation-war.html</u> > [Accessed 18 July 2012].

Tourism.gov.my 2012, *Official Website of Tourism Malaysia - Experience the Best Time of Your Life*. Available at: <<u>http://www.tourism.gov.my/intl\_en/home</u> >[ Accessed 17 July 2012].

Train-srv.manipalu.com 2012, *MT-UnIt-10-Dynamic Programming-1*. Available at: < <a href="http://train-srv.manipalu.com/wpress/?p=163337">http://train-srv.manipalu.com/wpress/?p=163337</a>> [Accessed 21 July 2012]. Virtualmalaysia.com 1999, *Malaysia Tourism | Destination | Travel Packages | Hotel | Events*. Available from: <<u>http://www.virtualmalaysia.com/</u>> [Accessed 18 July 2012].

Waterfall-model.com 1970, *Waterfall Model*. Available from: <<u>http://www.waterfall-model.com/</u> >[18 July 2012].

Y.W.Chang n.d., *Unit8 Graph*. Available from: <<u>http://cc.ee.ntu.edu.tw/~ywchang/Courses/Alg/unit8.pdf</u>> [Accessed 08 Aug 2012]. genesisjava.com. 2011. *SMTP – An Unsung Hero in the Making*. Available from:<<u>http://blog.genesisjava.com/tag/smtp/</u>> [Accessed 03 August 13].

Google Developers. 2013. *Finance Services*. Available at: <u>https://developers.google.com/apps-script/reference/finance/</u>. [Accessed 15 August 13].

En.wikipedia.org. 2013. *Travelling salesman problem*. Available at:<u>http://en.wikipedia.org/wiki/Travelling\_salesman\_problem</u>. [Accessed 15 August 13].

plus.google.com. 2012. *Research at Google*. Available at:<u>https://plus.google.com/+ResearchatGoogle/posts/fcDYLZjHnRj</u>. [Accessed 17 August 13].

en.wikipedia.org. (2013). *Local Search (Optimization)*. Available at: < <u>http://en.wikipedia.org/wiki/Local\_search\_(optimization).></u> [Accessed 17 August 2013.]

en.wikipedia.org. (2013). *Brute-force search*. Available at: <a href="http://en.wikipedia.org/wiki/Brute-force\_search.">http://en.wikipedia.org/wiki/Brute-force\_search.</a> Accessed [17 August 2013.]

en.wikipedia.org. (2013). 2-opt. Available at: <a href="http://en.wikipedia.org/wiki/2-opt">http://en.wikipedia.org/wiki/2-opt</a>. > [Accessed 17 August 2013.]

APPENDIX A

# **APPENDIX** A

## APPENDIX A-1 Comparison of Strengths and Weaknesses among Methodologies

Methodology	Strengths	Weaknesses
Waterfall Development	<ul> <li>Complete one phase before next phase is started. Fault can be detected easily from the initial phases and will be seal off for correction.</li> <li>Get know which stage is in progress easily.</li> <li>Easy to use.</li> </ul>	<ul> <li>Time taken to complete each stage is very long</li> <li>Possible to go back but extremely difficult.</li> </ul>
Iterative Development	<ul> <li>It is much better model of the software process.</li> <li>It allows feedback to proceeding stages.</li> <li>It can be used for project wherein the requirements are not well understood.</li> </ul>	<ul> <li>It is not easy to manage this model.</li> <li>No clear milestones in the development process.</li> <li>No stage is really finished.</li> </ul>
Evolutionary Prototyping (RAD)	<ul> <li>Time to deliver is less.</li> <li>Changing requirements can be accommodate.</li> <li>Cycle time can be short with use of powerful RAD tools.</li> <li>Progress can be measured.</li> <li>The system is more likely to meet the user requirements.</li> </ul>	<ul> <li>Management complexity is more.</li> <li>Suitable only when requirements are well known.</li> <li>Required users involvement.</li> </ul>
Spiral Model	<ul> <li>Changing requirement can be accommodated.</li> <li>Requirements can be captured more accurately.</li> <li>Users see the system early.</li> </ul>	<ul> <li>Management is more complex</li> <li>End of the project may not be known early.</li> <li>Not suitable for small and low risks projects</li> </ul>

Agile Development /Extreme	<ul> <li>Promote teamwork and cross training</li> <li>Functionality can be</li> </ul>	• Not suitable for handling complex dependencies.
Programming	<ul> <li>developed rapidly.</li> <li>Resource requirements are minimum.</li> <li>Suitable for fixed or changing requirements</li> </ul>	<ul> <li>More risk of sustainability, maintainability and extensibility.</li> <li>Strict delivery management dictates the scope,</li> </ul>

Features	РНР	ASP.NET
Coding languages	C, C++. It also supports some OOP concepts.	More than <b>25 languages</b> supported, among which the most widely used are Visual Basic .NET and C#. A developer can choose one language but still be able to use components from any other supported language.
Compiling logic	It can be compiled and can be run as an executable.	Compilation supported, in both dynamically and pre-compiled modes.
Output caching (full page)	No native support.	Supported. By <b>any combination</b> of one or several URL parameters, browser type or custom function ASP.NET caches different versions of a page.
Output caching (partial page)	No native support.	Native support through the use of User Controls. Using the <b>Cache API</b> , data and other objects can be cached with complex expiration rules.
External components	PHP can call a variety of packages and the ZEND engine can be manually modified by the developer because it is in open source.	Broad support for native C libraries, COM objects as well as assemblies written in any .NET compatible language, including Managed C++.
Database access	PHP has drivers for most available databases on the market, as well as open source databases.	ASP.NET directly supports OLE-DB and ODBC, while including native drivers for Microsoft SQL Server and Oracle.
Database output	PHP returns datasets as variables, so they are outputted like any other variable.	ASP.NET has templated data binding to server-side controls for ease of development, and a developer can choose <b>manual looping</b> according to his preferences.
XML Web services	PHP packages support Web services based on Apache AXIS engine and others.	<b>Extensive</b> and <b>flexible standards-</b> <b>compliant support</b> is provided which make Web services easy to publish and consume.
XML / XSLT	Are supported in add-on packages and libraries.	ASP.NET provides comprehensive and easy to use support for XML DOM, XSLT, validation, while enabling lightweight stream-oriented parsing for XML documents.
Built-in functionality	Built-in functions that cover	ASP.NET brings <b>direct access</b> to the

#### **APPENDIX A-2** Comparison of the Features of ASP.NET and PHP

Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

	many common tasks for a Web-based application. Java class libraries can also be accessed with additional work.	entire .NET framework class libraries, which encompass a vast amount of functionality.
Session State	PHP has cookie based session management.	With or without cookies session state, by using a single server in-memory store, a centralized state server or a database back-end. The extensible architecture allows <b>custom state modules</b> to replace built-in options. The cookieless sessions require only a configuration change to be enabled.
Debugging	Does not offer direct extensive debugging support. Several products from third-parties and Zend are available for debugging and testing.	ASP.NET includes extensive tracing and environment information that can be included in the same page or a separate one. <b>Microsoft Visual</b> <b>Studio .NET</b> enables easy interactive debugging of pages while executing, on top of debugging fro client-side scripting and SQL Server stored procedures.
Regular expressions	PHP supports POSIX and Perl compatible regular expressions syntax.	<b>Perl-5</b> compatible regular expression support, with extra features like right-to- left matching, precompiled expressions, named groups or <b>full Unicode support</b> . ASP.NET allows the user to specify a function to be called while making a regular expression replace operation.
Error handling	Although it does not support error trapping, it has various error-handling functionality and logging.	Has <b>support for structured exception</b> <b>handling</b> , by adding a "finally" block after code that executes regardless of errors it may contain, for raising custom exceptions, and specifying custom error pages for different types of unrecoverable errors.
Image manipulation	PHP has no built-in actual support, except for third- party components that can be installed.	Through the <b>.NET System.Drawing</b> <b>classes</b> , ASP.NET includes extensive image creation and manipulation facilities.
Data caching	Limited data native Data Caching.	<b>Extensive cache API</b> that allows almost any type of data to be stored, with expiration based upon usage, time, or dependency upon a file or another cached item. ASP.NET also allows user-defined functions to be called when given item is removed from the cache.

Internalization	Unicode full support.	Unicode strings and various character encodings supported. Rather than requiring different functions to be called, date, number, and currency functions are culture-aware, altering their output according to the type of culture they are currently set to. ASP.NET includes support for using resource files to dynamically localize an application.
Code re-usability	PHP has user defined functions, the ability to create Classes, and included files.	Has User Controls, Server Controls, custom classes, and included files.
Threading	Good threading model.	<b>Full support</b> . Simultaneous page requests take place in separate threads, and moreover, each page is able to spawn its own threads in order to perform simultaneous or asynchronous work.
Integrated development environment	From free to several hundred dollars, PHP can be completed by a bundle of development tools with a broad range of capabilities.	Visual Web Developer Express Edition , Visual Studio .NET , Borland C# Builder andMacromedia Dreamweaver MX also support ASP.NET.

## APPENDIX A-3 Malaysia Tourist Arrival by Country of Nationality Mac 2012



MALAYSIA TOURIST ARRIVALS BY COUNTRY OF NATIONALITY MAC 2012								
NO	COUNTRY OF NATIONALITY	MARCH			JANUARY - MARCH			
NO		2011	2012	Growth %	2011	2012	Growth %	
1	SINGAPORE	1,017,864	975,489	(4.2)	2,961,152	2,721,140	(8.1)	
2	INDONESIA	157,957	183,520	16.2	433,683	520,679	20.1	
3	CHINA	96,098	128,795	34.0	300,842	390,256	29.7	
4	BRUNEI	128,508	125,786	(2.1)	297,921	291,091	(2.3)	
5	THAILAND	122,594	109,448	(10.7)	329,314	309,666	(6.0)	
6	INDIA	46,799	48,226	3.0	138,510	155,477	12.2	
7	JAPAN	29,598	40,271	36.1	86,351	112,017	29.7	
8	UNITED KINGDOM	33,675	37,651	11.8	93,839	103,720	10.5	
9	AUSTRALIA	43,305	37,591	(13.2)	139,190	118,451	(14.9)	
10	PHILIPPINES	26,546	36,934	39.1	71,206	101,586	42.7	
11	IRAN	20,315	20,826	2.5	40,195	41,366	2.9	
12	U.S.A	18,241	20,774	13.9	49,186	57,492	16.9	
13	SOUTH KOREA	16,505	19,315	17.0	62,644	76,977	22.9	
14	TAIWAN	16,795	16,774	(0.1)	45,847	56,549	23.3	
15	VIETNAM	12,859	16,535	28.6	34,131	45,769	34.1	
16	GERMANY	12,480	13,603	9.0	34,701	36,710	5.8	
17	FRANCE	11,014	13,080	18.8	29,539	36,401	23.2	
18	CANADA	7,272	8,146	12.0	21,081	23,453	11.3	
19	NETHERLANDS	6,273	7,072	12.7	19,383	21,494	10.9	
20	NEPAL	6,395	7,005	9.5	20,331	20,476	0.7	
21	MYANMAR	6,848	6,767	(1.2)	19,555	18,757	(4.1)	
22	PAKISTAN	5,633	6,739	19.6	16,352	20,734	26.8	
23	SAUDI ARABIA	3,546	6,708	89.2	11,277	20,585	82.5	
24	BANGLADESH	5,775	6,532	13.1	17,922	18,666	4.2	
25	NEW ZEALAND	4,696	5,186	10.4	13,115	15,391	17.4	
26	SWEDEN	5,552	4,576	(17.6)	18,218	14,741	(19.1)	
27	SRI LANKA	4,086	4,352	6.5	11,664	12,896	10.6	
28	RUSSIA	3,202	4,351	35.9	12,395	15,823	27.7	
29	ITALY	3,330	3,472	4.3	10,534	10,745	2.0	
30	CAMBODIA	3,863	3,252	(15.8)	11,589	9,310	(19.7)	
31	DENMARK	1,970	2,753	39.7	6,100	7,498	22.9	
32	LAOS	2,216	2,468	11.4	6,770	8,018	18.4	
33	NORWAY	1,794	2,463	37.3	5,424	6,337	16.8	
34	FINLAND	1,952	2,427	24.3	7,623	9,059	18.8	
35	SWITZERLAND	2,073	2,359	13.8	6,245	7,009	12.2	
36	SOUTH AFRICA	2,435	2,354	(3.3)	6,702	6,389	(4.7)	
37	UAE	1,252	2,289	82.8	3,612	4,014	11.1	
38	KAZAKHSTAN	1,613	1,975	22.4	5,251	6,579	25.3	
39	IRELAND	1,878	1,667	(11.2)	5,876	4,791	(18.5)	
40	OMAN	952	1,371	44.0	3,485	5,276	51.4	
41	AUSTRIA	1,130	1,345	19.0	3,480	3,867	11.1	
42	UZBEKISTAN	720	874	21.4	2,539	3,571	40.6	
43	TURKEY	756	816	7.9	2,157	2,442	13.2	
44	BRAZIL	789	779	(1.3)	2,109	2,151	2.0	
45	OTHERS	53,189	27,290	(48.7)	121,342	87,119	(28.2)	

Source : Tourism Malaysia with the cooperation of Immigration Department

Components	Total Exp (RM m	Total Expenditure (RM million)		Percentage Share (%)	
·	2010	2011	2010	2011	(%)
Shopping	8,914	13,149	25.7	31.0	5.3
Transport	8,098	10,019	23.4	23.7	0.3
Food & beverages	7,975	9,691	23.0	22.9	-0.1
Accommodation	6,130	5,028	17.6	11.9	-5.7
Expenditure before the trip/ packages/entrance fees/ tickets	894	1,097	2.6	2.6	0.0
Other activities	2,667	3,362	7.7	7.9	0.2
Total Expenditure	34,679	42,346	100.0	100.0	

## APPENDIX A-4 Components of Expenditure by Domestic Visitors In 2011
## **APPENDIX B**

#### APPENDIX B-1 Survey Questions

## **Survey Questions**

This questionnaire is used to figure out what should be included in a tourism website. Please help to complete the following survey, your help is very much appreciated. All information collected will be kept in strict confidence for statistical purpose only.

#### Q1 : Gender

- Male
- Female

#### Q2 : Age

- Onder 20
- 20-39
- 40-59
- 60 or above

#### Q3 : E-mail address (Optional)

#### Q4 : Do you visit any tourism website before you go travel?

- Yes
- No

#### Q5 : Please state your reason. If the answer to the above question is "No".

#### Q6 : How do you plan your trip?

Plan your own trip by searching related information through internet, books or friends

- Arranged by travel agents
- Other:

# Q7 : Please rate the importance of each of the following types of information on a scale of 1 to 5, where 1 is not at all important , and 5 is extremely important. How important is the information to you?

	1 - Not at all important	2	3	4	5 - Extremely Important
Introduction to the country	$\odot$	$\odot$	$\odot$	$\odot$	$\odot$
Tourist Attractions	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\odot$
Travel Deals / Promotions	$\odot$	$\odot$	$\odot$	$\odot$	$\odot$
Photo Gallery	$\odot$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Video	$\odot$	$\bigcirc$	$\odot$	$\odot$	$\odot$
Accommodation	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\odot$
Food	$\odot$	$\bigcirc$	$\odot$	$\bigcirc$	$\odot$
Culture	$\odot$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$
Events & Festival	$\odot$	$\bigcirc$	$\odot$	$\bigcirc$	$\odot$
Traveler Experience	$\odot$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\odot$
Travel Agents	$\odot$	$\odot$	$\odot$	$\odot$	$\odot$
Contact Information	$\bigcirc$	$\bigcirc$	$\odot$	$\odot$	$\odot$

#### Q8 : If tourism website includes a currency converter , do you think it will be useful to you?

- Yes
- No

Q9 : Do you able to plan your travel budget well before you go on vacation?

- Yes
- No

#### Q10 : If the answer to the above question is "No" , then what is / are the possible reasons?

- Do not know the cost of living of the destination.
- Lack of budget guide in tourism website.
- Do not have enough time to plan the budget.
- Shortage of tourism website that cater to helping you budget.
- Other:

```
Bachelor of Computer Science (HONS)
```

Faculty of Information and Communication Technology (Perak Campus), UTAR.

Q11 : What is /are the expenses that you will take into consideration when planning your budget?

Accommodation
Meals
Souvenirs
Entertainment

Interspondence		Transportation
----------------	--	----------------

Other:

Q12 : If a budget estimating feature is added to the tourism website, will it be useful to you?

Yes

No

#### Q13 : What is/are the common problems that you faced before/during your journey?

- Finding a place to stay once you've arrived.
- Do not know what to bring.
- Lost/ Damaged luggage.
- Scams
- Illness
- Crime
- Lost or stolen money / passport
- Other:

#### Q14 : Do you face any difficulties in planning the order of place to visit?

- Yes
- No

## Q15 : If the answer to the above question is "Yes", then what is the possible reason that make you face the difficulties?

- Not familiar with the place.
- O not get any advice from tourism website.
- Troublesome
- Other:

Q16 : Do you think a path planning feature in the tourism website will be helpful to you? This feature helps you to decide which place to visit first to fully utilized your time.

- Yes
- No

Q17 : Do you have any additional information want to include in tourism website ?

- Yes
- No

#### Q18 : If the answer to the above question is "Yes", please state.

Submit

APPENDIX B

## APPENDIX B-2 Analysis on the Importance of Tourism Website to Respondents

## APPENDIX B-2-1 The Number of Respondents Visit Tourism Website before Travel



#### APPENDIX B-2-2 The Reasons of Respondents Not Visit Tourism Website

Q5 : Please stat	e your reason. If the answer to the above question is "No".	
	get more information as a guideline see what is so special & what i can't miss	
out	Because i like bag packing travel. Does	
not entrust webs	ite displayed information especially tourism website not	
necessary	At times I don't plan, if the hotel provides for tour services. Make sure the tr	ip
flows is smooth	and do not miss some attractive places. no Free and easy	
travel	WAN GO JUST GO! I just visit my own country i also	5
dunnosix sens	e it's unnecessary get more information an guides before the	
trip.	Preparation is important as I can save much time when travelling. I did not plan to go	
travel.		

#### APPENDIX B-2-3 The Types of Respondents' Ways in Planning Trip



#### **APPENDIX B-3** Analysis on the Importance of Different Types of Information

## APPENDIX B-3-1 Percentages of Respondents' Opinion in Identifying the Importance of Introduction to Country

Q7 : Please rate the importance of each of the following types of information on a scale of 1 to 5, where 1 is not at all important , and 5 is extremely important. How important is the information to you? - Introduction to the country

 1 - Not at all important
 2
 1%



#### APPENDIX B-3-2 Percentages of Respondents' Opinion in Identifying the

#### **Importance of Tourist Attractions**

Q7 : Please rate the importance of each of the following types of information on a scale of 1 to 5, where 1 is not at all important , and 5 is extremely important. How important is the information to you? - Tourist Attractions



1 - Not at all important	0	0%
2	5	3%
3	25	16%
4	51	34%
5 - Extremely Important	68	45%

## APPENDIX B-3-3 Percentages of Respondents' Opinion in Identifying the Importance of Travel Deals/Promotions

Q7 : Please rate the importance of each of the following types of information on a scale of 1 to 5, where 1 is not at all important , and 5 is extremely important. How important is the information to you? - Travel Deals / Promotions



### APPENDIX B-3-4 Percentages of Respondents' Opinion in Identifying the

#### **Importance of Photo Gallery**

Q7 : Please rate the importance of each of the following types of information on a scale of 1 to 5, where 1 is not at all important , and 5 is extremely important. How important is the information to you? - Photo Gallery



## APPENDIX B-3-5 Percentages of Respondents' Opinion in Identifying the

#### **Importance of Video**

Q7 : Please rate the importance of each of the following types of information on a scale of 1 to 5, where 1 is not at all important , and 5 is extremely important. How important is the information to you? - Video



1 - Not at all important	3	2%
2	20	13%
3	62	41%
4	45	30%
5 - Extremely Important	18	12%

## APPENDIX B-3-6 Percentages of Respondents' Opinion in Identifying the Importance of Accommodation



## APPENDIX B-3-7 Percentages of Respondents' Opinion in Identifying the

#### Importance of Food

Q7 : Please rate the importance of each of the following types of information on a scale of 1 to 5, where 1 is not at all important , and 5 is extremely important. How important is the information to you? - Food



## APPENDIX B-3-8 Percentages of Respondents' Opinion in Identifying the

#### **Importance of Culture**

Q7 : Please rate the importance of each of the following types of information on a scale of 1 to 5, where 1 is not at all important , and 5 is extremely important. How important is the information to you? - Culture



1 - Not at all important	1	1%
2	8	5%
3	43	28%
4	50	33%
5 - Extremely Important	47	31%

## APPENDIX B-3-9 Percentages of Respondents' Opinion in Identifying the Importance of Events & Festival

 Q7 : Please rate the importance of each of the following types of information on a scale of 1 to 5, where 1 is not at all important , and 5 is extremely important. How important is the information to you? - Events & Festival

 1 - Not at all im...
 0

 2
 8
 5%



#### APPENDIX B-3-10 Percentages of Respondents' Opinion in Identifying the



#### **Importance of Traveler Experience**

#### APPENDIX B-3-11 Percentages of Respondents' Opinion in Identifying the

#### **Importance of Travel Agents**

Q7 : Please rate the importance of each of the following types of information on a scale of 1 to 5, where 1 is not at all important , and 5 is extremely important. How important is the information to you? - Travel Agents 1 - Not at all important 9 6%



## APPENDIX B-3-12 Percentages of Respondents' Opinion in Identifying the

#### **Importance of Contact Information**

Q7 : Please rate the importance of each of the following types of information on a scale of 1 to 5, where 1 is not at all important , and 5 is extremely important. How important is the information to you? - Contact Information



15%

31%

26%

20%

## **APPENDIX B-4** Analysis on the Currency Converting Feature

## APPENDIX B-4-1 Percentages of Respondents Think Currency Conversion Feature Will Be Useful



### APPENDIX B-5 Analysis on the Budget Estimating Feature



#### **APPENDIX B-5-1 Percentages of Respondents Unable to Plan Budget**

## APPENDIX B-5-2 Possible Reasons that Make Respondents Unable to Plan Budget Well

#### Q10: If the answer to the above question is "No", then what is / are the possible reasons?



Do not know the cost of living of the destination.	30	75%	
Lack of budget guide in tourism website.	19	48%	
Do not have enough time to plan the budget.	6	15%	
Shortage of tourism website that cater to helping you budget.	12	30%	
Other	1	3%	

People may select more than one checkbox, so percentages may add up to more than 100%.

### APPENDIX B-5-3 Types of expenses Respondents Will Include in Travel Budget



on when planning your budget?		
Accommodation	129	85%
Meals	117	77%
Souvenirs	55	36%
Entertainment	104	69%
Transportation	109	72%
Other	3	2%

People may select more than one checkbox, so percentages may add up to more than 100%.

## APPENDIX B-5-4 Percentages of Respondents Think Budget Estimation Feature Will Be Useful



## APPENDIX B-6 Analysis on the Common Problems Faced By Respondents



APPENDIX	<b>B-6-1</b>	Common l	Problems	Faced b	y Res	pondents	during v	vacation
----------	--------------	----------	----------	---------	-------	----------	----------	----------

Finding a place to stay once you've arrived.	80	54%
Do not know what to bring.	45	30%
Lost/ Damaged luggage.	31	21%
Scams	36	24%
Illness	62	42%
Crime	41	28%
Lost or stolen money / passport	52	35%
Other	6	4%

People may select more than one checkbox, so percentages may add up to more than 100%.

#### APPENDIX B

### APPENDIX B-7 Analysis on the Path Planning Feature

## APPENDIX B-7-1 Percentages of Respondents Face Difficulties in Planning the Order of Place to Visit



## APPENDIX B-7-2 Possible Reasons that Make Respondents Face Path Planning Difficulty



## APPENDIX B-7-3 Percentages of Respondents Think the Path Planning Feature Will Be Helpful



#### **APPENDIX B-8** Analysis on the Suggestion from Respondents

## APPENDIX B-8-1 Percentages of Respondents Think That There Is Additional Information Can Be Included



#### APPENDIX B-8-2 Additional Information Respondents Would Like to Include

Q18 : If the a	answer to the above que	estion is "Yes", please state.			
weather	forecast	Customer review or forum			
discussion.					
	recommendation of trav	/eling spot, plan, and map.	Flight guidance	the pricing	
rate					every popular
places that a	attract tourist should state	ed the prices clearly so peoples or	ly can know their own		
budget.		Maybe can include the	top 5 or top 10 hotel or plac	ce to visit in the	website which
suggested t	oy users. So the other us	er can refer to these information to	select the place to visit or s	tay. =P	Firstly,add in the
address of t	he tourist attraction so th	e we can search it using google m	ap or other GPS devices.Se	econdondly,the	website should
add in more					

APPENDIX C

## **APPENDIX C**



### APPENDIX C-1 Gantt Chart

## **APPENDIX D**

## APPENDIX D-1 Use Case Description

## APPENDIX D-1-1 Use Case Description for Register

Use Case Name: Register	<b>ID:</b> 1	Importance Level: High		
Primary Actor: User	Use Case Type:	Details, Essential		
Stakeholders and Interests:				
User- User wants to register as a member a	nd try some additio	onal features of the system and		
share some travel tips to other users				
Brief Description: This use case describes	how user can regis	ter as a member.		
Trigger: User has interest to register as a n	ew member and en	ter the Register page.		
Relationships:				
Association: User				
Include: Add member				
Extend: -				
Generalization: -				
Normal Flow of Events:				
1) User accesses the website and clicks on the Register page.				
2) User fills in his/her details and enters the	correct words show	wn in CAPTCHA image.		
3)User clicks "Submit" button to register as a new member.				
S-1: Incorrect words in CAPTCHA image is entered.				
S-2: Correct words in CAPTCHA image is	S-2: Correct words in CAPTCHA image is entered.			
4)Successfully registered as a member and a	able to login.			
Sub flows:				
S-1: Incorrect words in CAPTCHA image i	is entered.			
1) The system required user to reenter the w	vords.			
S-2: Correct words in CAPTCHA image is	s entered.			
2)The availability of the chosen username w	vill be checked before	ore added to database.		
Alternate/Exceptional Flows: -				

Use Case Name: Add Member	<b>ID:</b> 2	Importance Level: High	
Primary Actor: User	Use Case Type: 1	Details, Essential	
·			
Stakeholders and Interests:			
User- User's details will be added to the dat	abase.		
Brief Description: This use case describes	how user's information	tion is added to the database.	
Trigger: User has filled in his/her informat	ion in register page	and clicked "Register" button.	
Relationships:			
Association: User			
Include: -			
Extend: -			
Generalization:			
Normal Flow of Events:			
1)The system check the availability of user	name from the data	base.	
S-1: Username is available.			
S-2:Username is not available.			
Sub flows:			
S-1: Username is available.			
1)Username is unique, all user's information is stored in database.			
2)User is redirected to the Login page.			
S-2:Username is not available.			
1)User fails to register as a new member.			
2)Return to Register page and requires to choose another username.			
Alternate/Exceptional Flows: -			

## APPENDIX D-1-2 Use Case Description for Add Member

## APPENDIX D-1-3 Use Case Description for Login

Use Case Name: Login	<b>ID:</b> 3	Importance Level: High	
Primary Actor: User Administrator	Use Case Type:	Details Essential	
	obe ouse Type.		
Stakeholders and Interests:			
User- User wants to access to the member p	page and try some	additional features which may	
help in planning trip.			
Administrator- Administrator wants access	to the admin page a	and manage information to be	
provided			
Brief Description: This use case describes	how user /administ	rator can login to the system	
Trigger: User / Administrator clicks on the	e Login page and en	nters his/her password.	
Relationships:			
Association: User, Administrator			
Include: Verification			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)User /Administrator enters the Login page	2.		
2) User / Administrator can click "Forget Password" link if he/she has forgotten his/her			
username and password.			
S-1: "Forget Password" link is clicked.			
3)User / Administrator enters his/her userna	me and password.		
4) User's / Administrator's username and pa	ssword will be veri	fied.	
5) User / Administrator is now able to access member page / admin page.			
Sub flows:			
S-1: "Forget Password" link is clicked.			
1) User / Administrator is redirected to Forg	get Password page.		
2) User / Administrator enters his/her regist	ered email address		
3) User / Administrator clicks "Submit" but	ton and waits for fe	ew second.	

Faculty of Information and Communication Technology (Perak Campus), UTAR.

3) User / Administrator will receive an email which includes his/her username and password.

Alternate/Exceptional Flows: -

### APPENDIX D-1-4 Use Case Description for Verification

Use Case Name: Verification	<b>ID:</b> 4	Importance Level: High	
Primary Actor: User, Administrator	Use Case Type: ]	Details, Essential	
Stakeholders and Interests:			
User- User's username and password have to	o be verified before	e user is allowed to try some	
additional features.			
Administrator- Administrator's username an	nd password have to	b be verified before	
administrator is allowed to manage informa	tion.		
Brief Description: This use case describes	how user's / admin	istrator's username and	
password are being verified.			
Trigger: User/Administrator enters his/her	username and pass	sword into Login page.	
Relationships:			
Association: User, Administrator			
Include: -			
Extend: Show Error Message			
Generalization: -			
Normal Flow of Events:			
1)The system compares the username and p	assword that are en	tered with the username and	
password that are stored in database.			
S-1: Username and Password are matched.			
S-2: Username and Password are not matched.			
Sub flows:			
S-1: Username and Password are matched.			
1) User/Administrator can access to member page / admin page.			
2)The system redirects User/Administrator to his / her respective page.			

Bachelor of Computer Science (HONS)

Faculty of Information and Communication Technology (Perak Campus), UTAR.

S-2: Username and Password are not matched.

1)Error message is shown.

2) User/Administrator do not have authority to access member page / admin page.

3) The system requests user / administrator to reenter the username and password.

Alternate/Exceptional Flows: -

### APPENDIX D-1-5 Use Case Description for Show Error Message

Use Case Name: Show Error Message	<b>ID:</b> 5	Importance Level: High	
Primary Actor: User, Administrator	Use Case Type:	Details, Essential	
Stakeholders and Interests:			
User- Notify user that he/she has entered an	invalid username	or password.	
Administrator - Notify administrator that he	e/she has entered ar	invalid username or password.	
Brief Description: This use case describes	when the error mes	ssage will be shown.	
Trigger: User/Administrator enters an inva	alid username or pa	ssword.	
Relationships:			
Association: User, Administrator			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)An invalid username or password is entered.			
2) Error message will show to the user/administrator.			
3)The system requires user/administrator to enter the correct username and password.			
Sub flows: -			
Alternate/Exceptional Flows: -			

## APPENDIX D-1-6 Use Case Description for Change Password

Use Case Name: Change Password	<b>ID:</b> 6	Importance Level: Normal	
Primary Actor: User, Administrator	Use Case Type:	Details, Essential	
Stakeholders and Interests:			
User / Administrator wants to change his/he	er login password.		
Brief Description: This use case describes	how user / admini	strator can change his/her login	
password.			
Trigger: User / Administrator clickson Ch	ange Password pag	ge.	
Relationships:			
Association: User, Administrator			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)User/Administrator login to the system.			
2)User/Administrator clicks Change Passw	ord page.		
3)User/Administrator enters his/her current password.			
4) User/Administrator enters his/her new password.			
5) User/Administrator clicks "Update" button.			
6)User/Administrator new password will be	e updated.		
7)The system requires user/administrator to login again with new password.			
Sub flows: -			
Alternate/Exceptional Flows: -			

## APPENDIX D-1-7 Use Case Description for Logout

Use Case Name: Logout	<b>ID:</b> 7	Importance Level: High	
Primary Actor: User, Administrator	Use Case Type: ]	Details, Essential	
Stakeholders and Interests:			
User/Administrator wants to logout his/her	account.		
Brief Description: This use case describes	how user/administr	cator can logout from his/her	
account.			
Trigger: User/Administrator clicks the Log	gout button after lo	gin.	
Relationships:			
Association: User, Administrator			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1) User/Administrator is login to the system.			
2)User/Administrator clicks the "Logout" button			
3)User/Administrator is logout from his/her account.			
Sub flows: -			
Alternate/Exceptional Flows: -			

## APPENDIX D-1-8 Use Case Description for View Profile

Use Case Name: View Profile	<b>ID:</b> 8	Importance Level: High	
Primary Actor: User, Administrator	Use Case Type:	Details	
Stakeholders and Interests:			
User- User wants to view his/her personal p	rofile.		
Administrator - Administrator wants to view	v his/her personal p	profile.	
Brief Description: This use case describes	how user/administr	rator can view his profile after	
login.			
Trigger: User/Administrator clicks on Prof	file page.		
Relationships:			
Association: User, Administrator			
Include: -			
Extend: Update Profile			
Generalization: -			
Normal Flow of Events:			
1)User/Administrator login to the system.			
2)User/Administrator can view member/ administrator	min page's global n	avigation.	
3)User/Administrator clicks on Personal Pro	3)User/Administrator clicks on Personal Profile page.		
4) User/Administrator views his/her personal information			
Sub flows: -			
Alternate/Exceptional Flows: -			

## APPENDIX D-1-9 Use Case Description for Update Profile

Use Case Name: Update Profile	<b>ID:</b> 9	Importance Level: Normal	
Primary Actor: User, Administrator	Use Case Type:	Details	
Stakeholders and Interests:			
User- User wants to update his/her personal	profile.		
Administrator - Administrator wants to upd	ate his/her persona	l profile.	
Brief Description: This use case describes	how user/administ	rator can update his/her profile.	
Trigger: User/Administrator clicks "Edit"	button in his/her P	rofile page.	
Relationships:			
Association: User, Administrator			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)User/Administrator enters Profile page.			
2) User/Administrator clicks "Edit" button.			
2)User/Administrator edits his/her information.			
3)User/Administrator clicks "Update" button and the latest information will save to database.			
Sub flows: -			
Alternate/Exceptional Flows: User/Admi	nistrator has chang	ed of mind and hit the "cancel".	

APPENDIX	<b>D-1-10</b>	Use Case Description for Browse Attractions
----------	---------------	---

Use Case Name: Browse Attractions	<b>ID:</b> 10	Importance Level: High	
Primary Actor: User	Use Case Type:	Details, Essential	
Stakeholders and Interests:			
User- User wants to know attractions' inform	nation.		
Brief Description: This use case describes	how user can brow	vse attractions information.	
<b>Trigger:</b> User clicks on Attraction page.			
Relationships:			
Association: User			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)User clicks on Attraction page.			
2)From the tree view navigation, user selects the city of the attractions.			
3)User views all the attractions' information for the selected city.			
Sub flows: -			

Alternate/Exceptional Flows: User has changed of mind and hit the "Back to previous page".

APPENDIX	<b>D-1-11</b>	Use Case Description for View Photo	Gallery
----------	---------------	-------------------------------------	---------

Use Case Name: View Photo Gallery	<b>ID:</b> 11	Importance Level: High	
Primary Actor: User	Use Case Type: Details, Essential		
Stakeholders and Interests:			
User- User wants to know view the photos	of the each attraction	ons	
Brief Description: This use case describes	how user can view	photos gallery.	
Trigger: User clicks on Photo Gallery pag	e		
Relationships:			
Association: User			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)User clicks on Photo Gallery page.			
2)User selects the title of the photo gallery.			
3)User views all the photos for the selected title.			
Sub flows: -			
Alternate/Exceptional Flows: User has changed of mind and hit the "Back to previous page".			

APPENDIX	<b>D-1-12</b>	Use Case Desci	ription for	Search	Book Hotel
----------	---------------	----------------	-------------	--------	------------

Use Case Name: Search / Book Hotel	<b>ID:</b> 12	Importance Level: High		
Primary Actor: User	Use Case Type:	Details, Essential		
Stakeholders and Interests:				
User- User wants to know search or book he	otel for his/her trip.			
Brief Description: This use case describes	how user can searc	h /book hotel from the website.		
<b>Trigger:</b> User clicks on Accommodation p	age.			
Relationships:				
Association: User				
Include: -				
Extend: -	Extend: -			
Generalization: -				
Normal Flow of Events:				
1)User clicks on Accommodation page.				
2)User fills in the needed information, such destination and date.				
3)User clicks the "Search" button.				
4)User is redirected to another page to view all the hotels and user is able to click "Book"				
button to book a hotel.				
Sub flows: -				
Alternate/Exceptional Flows: -				

Use Case Name: Estimate Travel Budget	<b>ID:</b> 13	Importance Level: High	
Primary Actor: User	Use Case Type: Details, Essential		
Stakeholders and Interests:			
User- User wants to estimate how much he/	she will probably s	pent in a particular city.	
Brief Description: This use case describes	how user can estim	nate his/her travel budget.	
Trigger: User clicks on Budget Estimator	page after login.		
Relationships:			
Association: User			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)User login to the system.			
2)User clicks on Budget Estimator page .			
3)User selects the city he/she would like to go.			
4)User selects the type of budget he/she wants.			
5)User clicks "Estimate" button.			
6)User views the information of budget for few categories, such as accommodation, meals and			
so on so forth.			
Sub flows: -			
Alternate/Exceptional Flows: -			

## APPENDIX D-1-14 Use Case Description for Plan Budget

Use Case Name: Plan Budget	<b>ID:</b> 14	Importance Level: High		
Primary Actor: User	Use Case Type:	Details, Essential		
~				
Stakeholders and Interests:				
User- User wants to know how to divide the	e money that he/she	e has saved for the trip to		
different portion and use it during the trip.				
Brief Description: This use case describes	how user can divid	e his/her money into different		
portion.				
Trigger: User clicks on Budget Planner pa	ge after login.			
Relationships:				
Association: User				
Include: -				
Extend: -				
Generalization: -	Generalization: -			
Normal Flow of Events:				
1)User login to the system.				
2)User clicks on Budget Planner page .				
3)User enters the amount of money he/she plans to spend on the trip, duration of the trip, and				
amount of people.				
4)User clicks "Calculate" button.				
5)User checks how much money is divided into each categories.				
Sub flows: -				
Alternate/Exceptional Flows: -				

Use Case Name: Calculate Travel	<b>ID:</b> 15	Importance Level: High	
Budget			
Primary Actor: User	Use Case Type:	Details, Essential	
Stakeholders and Interests:			
User- User wants to plan his/her travel spen	ding or want to kee	ep track of his/her expenses.	
Brief Description: This use case describes	how user can plan	his/her spending and calculate	
the total cost for the travel.			
Trigger: User clicks on Travel Budget Cal	culator page after l	ogin.	
Relationships:			
Association: User			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)User login to the system.			
2)User clicks on Travel Budget Calculator page .			
3)User enters the amount of money he/she plans to spend for each categories or the amount of			
money he/she has spent on that categories.			
4)User clicks "Calculate" button.			
5)The total cost for the travel is calculated.			
6)User can save the records and print it for references.			
Sub flows: -			
Alternate/Exceptional Flows: -			

## APPENDIX D-1-16 Use Case Description for Print Record

Use Case Name: Print Record	<b>ID:</b> 16	Importance Level: Normal	
Primary Actor: User	Use Case Type: ]	Details, Essential	
Stakaholdow and Interests			
Stakenoiders and interests:			
User- User wants to print his/her calculated	travel cost.		
Brief Description: This use case describes	how user can plan	his/her spending and calculate	
the total cost for the travel.			
Trigger: User clicks "Save and Print" butto	on after the travel c	ost is calculated.	
Relationships:			
Association: User			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)User login to the system.			
2)User clicks on Travel Budget Calculator page .			
3)User enters the amount of money he/she plans to spend for each categories or the amount of			
money he/she has spent on that categories.			
4)User clicks "Calculate" button.			
5)The total cost for the travel is calculated.			
6)User can save the records and print it for references.			
Sub flows: -			
Alternate/Exceptional Flows: -			

Use Case Name: Check Currency	<b>ID:</b> 17	Importance Level: High		
Exchange Rate				
Primary Actor: User	Use Case Type:	Details, Essential		
Stakeholders and Interests:				
User- User wants to check the latest currenc	y exchange rate.			
Brief Description: This use case describes	how user can checl	k the latest currency exchange		
rate.				
Trigger: User clicks on Check Currency pa	age after login.			
Relationships:				
Association: User				
Include: -				
Extend: -	Extend: -			
Generalization: -				
Normal Flow of Events:				
1)User login to the system.				
2)User clicks on Check Currency page .				
3)User enters the amount of currency.				
4)User select the type of currency that he/she want to exchange from and exchange to.				
5)The currency exchange rate will be shown.				
Sub flows: -				
Alternate/Exceptional Flows: -				

### APPENDIX D-1-17 Use Case Description for Check Currency Exchange Rate
Use Case Name: Plan Travel Path	<b>ID:</b> 18	Importance Level: High
Primary Actor: User	Use Case Type: Details, Essential	
Stakeholders and Interests:		
User- User wants to plan the order of places	s to visits.	
Brief Description: This use case describes	how user can plan	the order of places to visits.
<b>Trigger:</b> User clicks on Path Planning pag	e after login.	
Relationships:		
Association: User		
Include: -		
Extend: -		
Generalization: -		
Normal Flow of Events:		
1)User login to the system.		
2)User clicks on Path Planning page.		
3)User selects the places that he/she would like to go in the Google Map.		
4)User clicks "Get Direction" button.		
5)Search Result will be displayed in Google Map.		
5)The direction to those places and the order of places to visit is shown in direction panel.		
Sub flows: -		
Alternate/Exceptional Flows: -		

APPENDIX	D-1-19	<b>Use Case Description for Search Places</b>
----------	--------	---

Use Case Name: Search Places	<b>ID:</b> 19	Importance Level: High
Primary Actor: User	Use Case Type:	Details, Essential
Stakeholders and Interests:		
User- User wants to search nearby places a	nd type of places a	round where they are located.
Brief Description: This use case describes	how user can sear	ch nearby places and type of
places around where they are located.		
Trigger: User clicks on Search Places page	e after login.	
Relationships:		
Association: User		
Include: -		
Extend: -		
Generalization: -		
Normal Flow of Events:		
1)User login to the system.		
2)User clicks on Search Places page.		
3)User choose to search nearby places or search type of places.		
4)User is redirected to the respective page - Search nearby places page/ Search type of places		
page.		
5)Enter the search criteria.		
6)Search result will be displayed in the Google Map.		
Sub flows: -		
Alternate/Exceptional Flows: -		

Use Case Name: Check Weather	<b>ID:</b> 20	Importance Level: High	
Forecast			
Primary Actor: User	Use Case Type:	Details, Essential	
Stakeholders and Interests:			
User- User wants check current weather and	I the weather foreca	ast for the following five days.	
Brief Description: This use case describes	how user check the	e weather information.	
Trigger: User clicks on Weather Forecast	page after login.		
Relationships:			
Association: User			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)User login to the system.			
2)User clicks on Weather Forecast page.			
3)User select the location from the dropdown list.			
4)User clicks "Check" button.			
5)Weather information will be displayed in the page.			
Sub flows: -			
Alternate/Exceptional Flows: -			

## **APPENDIX D-1-20** Use Case Description for Check Weather Forecast

APPENDIX	D-1-21	Use Case Description for Submit Travel	Гір
----------	--------	--	-----

Use Case Name: Submit Travel Tip	<b>ID:</b> 21	Importance Level: Normal
Primary Actor: User	Use Case Type: ]	Details, Essential
Stakeholders and Interests:		
User- User wants to share some travel tips to	o other users.	
Brief Description: This use case describes	how user can share	some travel tips to other users.
Trigger: User clicks on Submit Travel Tip	page after login.	
Relationships:		
Association: User		
Include: -		
Extend: -		
Generalization: -		
Normal Flow of Events:		
1)User login to the system.		
2)User clicks on Submit Travel Tip page .		
3)User enter the title and category of travel	tip.	
4)User enters the travel tip that he/she would like to share.		
5)User clicks "Submit" button.		
6)The travel tip is submitted.		
7)The travel tip is stored in database.		
8)The travel tip is published and share in the website.		
Sub flows: -		
Alternate/Exceptional Flows: -		

Use Case Name: Give Feedback	<b>ID:</b> 22	Importance Level: Normal
Primary Actor: User	Use Case Ty	y <b>pe:</b> Details, Essential
Stakeholders and Interests:		
User- User wants to give feedback.		
Brief Description: This use case describes	how user can	give feedback regarding the website.
Trigger: User clicks on Feedback page af	ter login.	
Relationships:		
Association: User		
Include: -		
Extend: -		
Generalization: -		
Normal Flow of Events:		
1)User login to the system.		
2)User clicks on Feedback page .		
3)User enters his/her feedback.		
4)User clicks "Submit" button.		
5)The feedback is submitted.		
6)User's feedback is saved in database.		
Sub flows: -		
Alternate/Exceptional Flows: -		

# APPENDIX D-1-23 Use Case Description for View Feedback

Use Case Name: View Feedback	<b>ID:</b> 23	<b>Importance Level:</b> Normal	
Primary Actor: Administrator	Use Case Type: Details, Essential		
Stakeholders and Interests:			
Administrator- Administrator wants to view	v feedback from us	ers.	
Brief Description: This use case describes	how administrator	can view feedback from user.	
Trigger: Administrator clicks on View Fe	edback page after l	ogin.	
Relationships:			
Association: Administrator			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)Administrator login to the system.			
2) Administrator clicks on View Feedback page .			
3) Administrator view all the feedback from users.			
Sub flows: -			
Alternate/Exceptional Flows: -			

# APPENDIX D-1-24 Use Case Description for Manage Admin Accounts

Use Case Name: Manage Admin	<b>ID:</b> 24	Importance Level:
Accounts		Normal
Primary Actor: Administrator	Use Case Type: Details, Essential	
Stakeholders and Interests:		
Administrator- Administrator wants to creat	e, view, and delete	any admin account.
Brief Description: This use case describes	how administrator	can manage admin accounts.
<b>Trigger:</b> Administrator clicks on Manage A	Admin page after lo	ogin.
Relationships:		
Association: Administrator		
Include: -		
Extend: -		
Generalization: -		
Normal Flow of Events:		
1)Administrator login to the system.		
2) Administrator clicks on Manage Admin	page.	
3) Administrator view all admin accounts an	nd part of their pers	sonal information.
4)Administrator can add new administrators	or delete any adm	inistrators from database.
S-1: Add new administrators.		
S-2: Delete any administrators.		
5)Database is updated		
Sub flows:		
S-1: Add new administrators.		
1)Administrator enter information of the new administrator.		
2)Click "add" button to store information to database		
3)New administrator is added to the database.		
S-2: Delete any administrators.		
1)Select the Administrator to delete.		

2)Click "delete" button.

2)The selected administrator is deleted from database.

Alternate/Exceptional Flows: -

#### **APPENDIX D-1-25 Use Case Description for Manage Member Accounts.**

Use Case Name: Manage Member	<b>ID:</b> 25	Importance Level:	
Accounts		Normal	
Primary Actor: Administrator	Use Case Type:	Details, Essential	
Stakeholders and Interests:			
Administrator- Administrator wants to view	, and delete any m	ember account.	
Brief Description: This use case describes	how administrator	can manage member	
accounts.			
Trigger: Administrator clicks on Manage I	Member page after	login.	
Relationships:			
Association: Administrator			
Include: -			
Extend: -			
Generalization: -			
Normal Flow of Events:			
1)Administrator login to the system.			
2) Administrator clicks on Manage Member page.			
3) Administrator view all member accounts and part of their personal information.			
4)Administrator can delete any members from the database.			
5)Database is updated.			
Sub flows: -			
Alternate/Exceptional Flows: -			

## **APPENDIX D-1-26 Use Case Description for Manage Photos Information**

Use Case Name: Manage Photos	<b>ID:</b> 26	Importance Level: Normal
Information		
Primary Actor: Administrator	Use Case Type:	Details, Essential
Stakeholders and Interests.		
Administrator- Administrator wants to ad	ld view edit and d	lelete any photos information
from database		letter any photos information
Brief Description: This use case describ	es how administrat	tor can manage photos
information.	es now administration	tor can manage photos
<b>Trigger:</b> Administrator clicks on Manag	e Photos Informat	ion page after login.
Relationships:	·	
Association: Administrator		
Include: -		
Extend: -		
Generalization: -		
Normal Flow of Events:		
1)Administrator login to the system.		
2) Administrator clicks on Manage Photo	os Information pag	je.
3) Administrator view all the photos info	rmation.	
4)Administrator can add, edit and delete	any photos.	
S-1: Add new photos.		
S-2: Edit photos information.		
S-2:Delete Photos		
5)Database is updated.		
Sub flows:		
S-1: Add new photos.		
1)Administrator clicks on "Add New Pho	oto" page.	
2)Administrator uploads new photos and	the photos' descrip	otion.

3)Administrator clicks "Upload" button.

S-2: Edit photos information.

1)Administrator clicks on "Edit Existence Photos" page.

2)Administrator can edit any information related to that selected photos.

3)Administrator clicks "Update" link.

S-3:Delete Photos

1)Administrator clicks on "Edit Existence Photos" page.

2)Administrator clicks "Delete" link on the selected photo's row.

3)A "Delete" confirmation alert window pop up, administrator clicks "Confirm" to delete the

selected photos and the photos description.

Alternate/Exceptional Flows: -

#### APPENDIX D-1-27 Use Case Description for Manage Attractions Information

Use Case Name: Manage Attractions	<b>ID:</b> 27	Importance Level: Normal				
Information						
Primary Actor: Administrator	Use Case Type: ]	Details, Essential				
Stakeholders and Interests:						
Administrator- Administrator wants to add,	view, edit and dele	ete any attractions information				
from database.						
Brief Description: This use case describes how administrator can manage attractions						
information.						
Trigger: Administrator clicks on Manage	Attractions Informa	ation page after login.				
Relationships:						
Association: Administrator						
Include: -						
Extend: -						
Generalization: -						
Normal Flow of Events:						

1)Administrator login to the system.

2) Administrator clicks on Manage Attractions Information page.

3) Administrator view all the attractions information.

4)Administrator can add, edit and delete any attractions.

S-1: Add new attractions.

S-2: Edit attractions information.

S-2:Delete attractions.

5)Database is updated.

#### Sub flows:

S-1: Add new attractions.

1)Administrator clicks on "Add New Attractions" page.

2)Administrator enter new attractions' name and its description

3)Administrator clicks "Add Attractions" button.

S-2: Edit attractions information.

1)Administrator clicks on "Edit Attractions Information" page.

2)Administrator can edit any attractions information.

3)Administrator clicks "Update" link.

S-3:Delete Attractions

1)Administrator clicks on "Edit Attractions Information "page.

2)Administrator clicks "Delete" link on the selected photo's row.

3)A "Delete" confirmation alert window pop up, administrator clicks "Confirm" to delete the selected attractions.

Alternate/Exceptional Flows: -

# **APPENDIX E**

#### APPENDIX E-1 Screenshots

#### APPENDIX E-1-1 Default Page / Home Page



Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

#### APPENDIX E

### APPENDIX E-1-2 Details Page

This details page includes Discovery Malaysia Page, Plan Your Trips Page and Experiences Page.



# APPENDIX E-1-3 Attractions Information Page

HOME	Back to previous page
Discover Malaysia	View Photos of Kuala Lumpu
Practival Info	Petronas Twin Towers
Culture	
Attractions	Soaring to a neight of 451.9 metres, the 86-storey twin structure is Ruaia Lumpur's crown jewel, wajestic by day and dazzing at night, the PETRONAS Twin Towers is inspired by Tun Mahathir Mohamad's vision for Malaysia to be a global player. Together with master
Kuala Lumpur	architect Cesar Pelli, the international icon powerfully captures the nation's ambitions and aspirations.
Perlis	
Kedah	
Penang	
Perak	BBKLCC
Kelantan	
Terengganu	Featured as the world's fourth best shopping city in CNNGo, Kuala Lumpur is indeed a shopper's paradise. Case in point: Three of the
Selangor	word s to largest mails are in r.c., while year-round sales offer the best bang for your buck.
Pahang	The BBKLCC stretch from Bukit Bintang to Kuala Lumpur City Centre, in particular, will leave you spoilt for choice with its abundant
Putrajaya	signature malls within the area. The shopping district is also well-connected via a covered pedestrian walkway and an efficient network
Negeri Sembilan	of public transportation.
Melaka	
Johor	
Islands,Beaches	Petrosains 'The Discovery Centre'
City Excitement	Petrosains is a Science Discovery Centre that uses a fun and interactive approach to tell the story of the science and technology of the
Nature,Adventure	petroleum industry. Its concept and contents revolve specifically around the science of petroleum, yet embrace all the general sciences.
Cultural Attractions	The hands-on approach adopted by Petrosains puts an emphasis on the fun and excitement of learning rather than on the rigorous memoriestion of scientific facts
Photos Gallery	
Accommodation	Petrosains Sdn. Bhd. was incorporated to extend PETRONAS' commitment as a socially responsible corporate citizen in providing a rich
Plan Your Trips	and stimulating environment aimed to ennance science interacy and instill in Malaysians a passion for acquiring scientific knowledge. In addition to opening a window of information on the history and development of petroleum and its related products, the centre also

Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

# APPENDIX E-1-4 Photo Gallery Page I



# APPENDIX E-1-5 Photo Gallery Page II



## **APPENDIX E-1-6 Accommodation Page**

HOME	Simple steps to search and book a hotel
Discover Malaysia	Click to search some <u>Hotel Packages</u> offered by SOTA
Practival Info	
Culture	Book your trip today
Attractions	
Kuala Lumpur	Cooreb for Untels
Perlis	
Kedah	Where?
Penang	
Perak	e.g. city, region, district or specific hotel
Kelantan	
Terengganu	Check-in Check-out
Selangor	🗔 Day 💌 Month 🔍 📴 Day 💌 Month 🔍
Pahang	
Putrajaya	I don't have specific dates yet
Negeri Sembilan	Guests
Melaka	2 adults in 1 room
Johor	
Islands,Beaches	
City Excitement	
Naturo Advonturo	

APPENDIX E-1-7 Login Page - Member

				S. 🖉	Only search this	website
TR	ONLINE	ASSISTAL	NT	HOME Login	Register My Acc	count
Welcome	to a Peninsular Malays	ia Tourism Inform	ation Site!		Login a	s <u>MEMBER</u> / <u>ADMI</u>
HOME	Discover Malaysia	Attractions	Photos Gallery	Accommodation	Plan Your Trips	Experiences
LOGI	N Log In O	nline Travel Assist	tant	Not a member ye	et?	
				Register NOW!!	It is easy and FREE !	
Username						
Username Password				What you can de	with a Opline Travel /	Account?
Username Password	er Me		Forget your pass	What you can do	o with a Online Travel A	Assitant Account?

# APPENDIX E-1-8 Login Page - Admin

		SS 🧖	Only search this	website
INE	NT	HOME Login	Register My Acc	count
ASSIS IA	nation Site!	•	Login a:	s <u>MEMBER</u> / <u>ADMI</u>
ia Attractions	Photos Gallery	Accommodation	Plan Your Trips	Experiences
	Log in to Adn	nin Page		
Username:				
Password :				
Remember Me		Forget your pa	assword?	
			Sign In	
	Asassista Aalaysia Tourism Inform iia Attractions	ASSISTANT Alaysia Tourism Information Site! ia Attractions Photos Gallery IN Log in to Adm Username: Password : Remember Me	ASSISTANT Adaysia Tourism Information Site!  ia Attractions Photos Gallery Accommodation  IN  Log in to Admin Page Username: Password: Remember Me	INE       ASSISTANT         Adaysia Tourism Information Site!       Login a         ia       Attractions       Photos Gallery       Accommodation       Plan Your Trips         IN       Intername:       Intername: <td< td=""></td<>

APPENDIX E-1-9 Register Page

	e to a Peninsular Malay	sia Tourism Infor	mation Site!		Login as	MEMBER / ADMIN
HOME	Discover Malaysia	Attractions	Photos Gallery	Accommodation	Plan Your Trips	Experiences
First Nam Last Nam Contact N	e:		What you o	can do with a Online T	ravel Assitant Account	17
			0			

Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

\_\_\_\_

# APPENDIX E-1-10 Forgot Password Page

TR	ONLINE	ASSISTAN	NT			
Welcom	e to a Peninsular Malays	ia Tourism Inform	ation Site!		Login a	as MEMBER / ADA
HOME	Discover Malaysia	Attractions	Photos Gallery	Accommodation	Plan Your Trips	Experiences
Back to Lo	<u>q in Page</u>	Lost your pass	word? Please enter y vill receive vour login	our registered email ac details via email. ^^	ddress.	
Back to Lo	<u>o in Page</u>	Lost your pass You w	word? Please enter y vill receive your login	our registered email ac details via email. ^^	idress.	
Back to Lo	o In Page	Lost your pass You w	word? Please enter y vill receive your login Forget Your P	our registered email ac details via email. ^^ assword !	ldress.	

## APPENDIX E-1-11 Change New Password Page

Change new password for your account.	
Current password :	
New password :	
Confirm password :	
Update	
After update,Please Login again to use the new password.	
 8 Consident 2013 Online Travel Assistant	

			YM		
TRAVEL	NLINE				6
Welcome meiyi	ogout				
Personal Profile 🕨	Check Currency Plan Your Budg	et	Weather Forecast	Travel Tip Fe	edbac
Chnage Password	Vou can undate vou persona	I profile Apytime -)			
	Tou can upuate you persona	Personal Profile			
	User ID	6			
	Username :	meiyi			
	First Name :	MeiYi			
	Last Name :	Tan			
	Contact Number :	012-895-0833			
	Email Address :	cherry-meiyi@hotmail.com			
	Country :	Malaysia			

# APPENDIX E-1-12 Update Member Profile Page

## APPENDIX E-1-13 Check Currency Page

The monotony unit of the co	untru in Pinardit Molove	is and is written as PM	or MVP				
The exchange rate is value	ed at USD1 = RM3.15. N	lotes are available in F	01 M 11K. RM1, RM5, RM10, RM20, F	RM50, and RM100 de	enominations, while coins a	are issued in 5,	10, 20 and
50 sen (cents) denominatio	ons.						
Foreign currencies can be	exchanged at banks ar	nd money changers.					
		Check the	latest currency ex	change rate.			
		Amount:	100				
		From	United States Dollars	¢			
		Trom.	United States Donars	3			
		To:	India Rupees Rs	*			
			-				
			Convert				
		L					
			RESULT				
			ILEGOLI.				

# APPENDIX E-1-14 Budget Estimator Page

You are now at : <u>Budget Estimator</u> Click to try others: <u>Budget Planner</u>	Travel Budget Calculator	
-The average cost	ts that can be used by travelers as a starting point and a guideline t -it helps to know roughly how much everything costs in Malaysia	to determine their own travel budgets. Ia before arrival.
	Budget Estimator	
	Which place are you going?	
	Kuala Lumpur	
	Budget (Cheap)	
	Estimate	
1	Average Daily Travel cost (RM) : 41.15	
	Accommodation (RM) :	26.23
	Food (RM) :	9.4
	Water (RM) : Local transportation (RM) :	1.4
1	Entertainment (RM) :	4.33
	Communication (RM) :	0.5
	Tips and handouts (RM) : Souvenirs (RM) :	0.13
	Alcohol (RM) :	11.58

Copyright 2013 Online Travel Assistant

	This calculator is designed to help you to divide you money into different port This may eliminate the problem of overspen This is just a suggestion, you may adjust according to your n
	Budget Planner
Total amount you have saved up for the trip(in $\ensuremath{RM}\xspace)$ :	Convert your <u>ourrency</u> in to Ringgit Malaysia(RM) before proceed.
Duration of trip:	
Amount of person:	
	<b>Plan</b>
	Manage your money during the trip in Malaysia Each person each day may spend :
Food & Beverage	Manage your money during the trip in Malaysia Each person each day may spend : es (RM):
Food & Beverage Transportation (R	Manage your money during the trip in Malaysia Each person each day may spend : es (RM): M):
Food & Beverage Transportation (R Accommodation	Manage your money during the trip in Malaysia Each person each day may spend : es (RM): (RM):
Food & Beverage Transportation (R Accommodation Shopping (RM):	Manage your money during the trip in Malaysia Each person each day may spend : es (RM): IM): (RM):
Food & Beverage Transportation (R Accommodation Shopping (RM): Expenditure befo	Manage your money during the trip in Malaysia Each person each day may spend : es (RM): M(): (RM): we the trip / packages/ entrance fee/ tickets (RM):

# APPENDIX E-1-15 Budget Planner Page

& Print Budget Record	Travel Bud	get Calculator	
	Enter the Name of Your Trip		
	BEFORE YOU GO		
	Passports,visas		
	Vaccinations & medications		
	Travel Insurance		
	Child care		
	Pet boarding		
	Luggage		
	AIR TRAVEL		
	Airfare(total for all travelers)		
	Checked Baggage Fees		
	Airport Parking (total for all days)		
	Airport Transfers		
	TANSPORTATION		
	Car rental (total for all days)		
	Rall Tickets(total for all travellers)		
	Taxis, Subways, Bus Fares		
	HOTELS & MEALS		
	Room Rate (total for all nights)		
	Breakfast		
	Lunch		
	Dinner		
	Snacks		
	SIGHT SEEING & ACTIVITIES		
	Tours		
	Activity Fees(golf,hourseback riding,etc)		
	Entrance Fees(amusement parks,zoos)		
	Enntertainment (movies,bowling)		
	Shopping, souvenins		
	OTHER EXPENSES		
	TOTAL		
	Calculate		
	Save		

# APPENDIX E-1-16 Travel Budget Calculator Page

Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

## **APPENDIX E-1-17 View and Print Budget Record Page**

Below is the example of Budget Record Page

Your Record ID	1
Trip Name:	Kuala Lumpur Tri
BEFORE YOU GO TRIP	6.00
Passport	1.00
Medication	1.00
Insurance	1.00
Child Care	1.00
Pet Boarding	1.00
Luggage	1.00
AIR TRAVEL	8.00
Air Fare	2.00
Baggage	2.00
Airport Parking	2.00
Airport Transfer	2.00
TRANSPORTATION	9.00
Car Rental	3.00
Rail Ticket	3.00
Bus Fares	3.00
HOTELS & MEALS	20.00
Room Rate	4.00
Breakfast	4.00
Lunch	4.00
Dinner	4.00
Snacks	4.00
SIGHTSEEING & ACTIVITIES	25.00
Tour	5.00
Activity Fees	5.00
Entrance Fees	5.00
Entertainment	5.00
Souvenirs	5.00
OTHER EXPENSES	5.00
TOTAL(Overall)	73.00



## APPENDIX E-1-18 Path Planning Page







## APPENDIX E-1-20 Search Type of Places Page

### APPENDIX E-1-21 Weather Forecast Page



E-14

APPENDIX E-1-22	Submit Travel Tip Page
-----------------	------------------------

Submit a Travel Tip Did you have a great experience on yo here as well. If you have some insider Submit a tip for fellow travelers by con	ur trip? Use this form to pass along a few suggestions. Did you have a few missteps along the way? You can warn other travelers information pass it along to help a fellow traveler out. Know a good restaurant? Found a good hotel? Want to share something fun to do? ipleting the form below.	
Title (Required)		
City (Required)		
Category		
Tip (Required)		
Submit	Cancel	
	Copyright 2013 Online Travel Assistant	

# APPENDIX E-1-23 Feedback Page

	Feedback Form	
Subject :		
Subject.		
-		
Feedback:		
L		
Submit		

1		
	ONLINE	
TRAVE	ASSIST	ANT
You are now sig	n in as ADMIN admin <b>Log</b>	jout
Edit Profile	Change Password Ad	dd Admin 🛛 View Feedback Manage Account 🔸 Manage Information
	You can edit you p	personal profile Anytime. =)
		Admin Profile
	alD	2
	aUsername	admin
	aFirstname	MeiYi
	aLastname	Tan
	aContactno	012-895-0833
	aEmail	cherry-meiyi@hotmail.com
	Edit	

# APPENDIX E-1-24 Update Admin Profile Page

#### APPENDIX E-1-25 Add Admin Page

	Ad	d a NEW adr	nin.		
	sername:				
	Check	Availability			
F	assword:				
F	irst Name :				
L	.ast Name:				
c	Contact Number:				
E	imail:				
			Add		

## APPENDIX E-1-26 View Feedback Page

		Feedb	ack from members			
Feedback	<u>D</u> <u>Username</u>	<u>Subject</u>	Feedback	<u>Date</u>		
1	meiyi	Test Feedback	This is the first feedback	13/7/2013 7:14:48 I	РМ	
2	meiyi	Second Test	This is the second feedback.	13/7/2013 7:18:08 I	РМ	
3	lisa	Give Feedback	This is lisa first feedback. Thank yo	u 13/7/2013 7:22:53 I	РМ	

APPENDIX E-1-27 Manage Admin Accounts Page

				Manage	Admin Accounts			
ļ	D <u>Username</u>	<u>Firstname</u>	<u>Lastname</u>	<u>Contactno</u>	<u>Email</u>	<u>Createdon</u>	<u>Modifiedon</u>	
Delete 2	2 admin	MeiYi	Tan	012-895-0833	cherry-meiyi@hotmail.com	14/7/2013 11:42:59 PM	14/7/2013 11:42:59 PM	

APPENDIX E-1-28 Manage Member Accounts Page

				Mana	ge Member Accour	nts		
I	) Username	e Firstname	Lastname	Contactno	Email	Country	Created On	Modified On
Delete 6	meiyi	MeiYi	Tan	012-895-0833	cherry-meiyi@hotmail.com	Malaysia	18/7/2013 12:35:46 AN	18/7/2013 12:35:46 AM
Delete 7	lisa	Lisa	Foo	017-552-8964	lisafoo@hotmail.com	Singapore	18/7/2013 2:34:16 PM	18/7/2013 2:34:16 PM

# APPENDIX E-1-29 Upload New Photo Page

		Upload New Pho	otos to photo ga	llery ]	
		State: Upload			
Photo	s uploaded recently				
Photo	S uploaded recently FileName	FilePath	Preview Image	description	state
Photo photoIC	s uploaded recently FileName Chicken rice.jpg	FilePath photos/Chicken rice.jpg	Preview Image	description Chicken rice	state Penang
Photo photoID 13 12	s uploaded recently FileName Chioken rice.jpg Chioken rice.jpg	FilePath photos/Chicken rice.jpg photos/Chicken rice.jpg	Preview Image	description Chicken rice Chicken rice	state Penang Penang

APPENDIX E-1-30 Edit Photo Information Page

Upload New pho	otos to Photo	o Gallery E	Edit Existence Photos	5		
	<u>Kuala Lumpur</u> <u>Putrajaya</u> Pe	<u>Penang Langkawi Island</u> erak Cameron Highland <u>s</u> Te	Genting Highlands <u>Negeri Sr</u> rengganu Johor Bahru <u>K</u> e	embilan <u>Melaka</u> elantan		
	Kuala Lumpur	hotoID <u>FileName</u>	<u>FilePath</u>	Preview Image	description	<u>state</u>
	Edit Delete 4	ki1.jpg	photos/ki1.jpg	AA	Petronas towers at night	KL
	Edit Delete 5	kl2.jpg	photos/kl2.jpg	Lunt -	KLCC Aquarium	KL
	<u>Edit</u> <u>Delete</u> 6	Suria KLCC mall.jpg	photos/Suria KLCC mall.jpg		Suria KLCC mall	KL
	Edit Delete 7	KLCC park.jpg	photos/KLCC park.jpg		KLCC Park	KL
	<u>Edit</u> Delete 8	Dolphin statue in KLCC park.jpg	photos/Dolphin statue in KLCC park.jpg	Į,	Dophinstatue in KLCC park	KL

Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

Edit Attractions In	nformation	
	Add New Attractions	
	* Required field	
	* Attraction's Name:	
	* Description 1:	
	Description 2:	
	Description 3:	
	* State	
	Add attraction	

# APPENDIX E-1-31 Add Attractions Information Page

## APPENDIX E-1-32 Edit Attractions Information Page

<u>Add New Attracti</u>	<u>ONS</u> <u>Perlis Kedah I</u> <u>Pahang Kuala Lu</u>	<u>Penang</u> <u>Pei</u> impur <u>Putra</u>	Edit Attraction Click to Jun rak <u>Kelantan Terenggan</u> jaya Negeri Sembilan M	n <b>s Information</b> np to the part <u>selangor</u> l <u>elaka Johor</u>		
	Kuala Lumpur <u>placel</u> <u>Edit Delete</u> 1	D placeName Petronas Twin Towers	description1 Soaring to a height of 451.9 metres, the 88-storey twin structure is Kuala Lumpur's orown jewel. Majestio by day and dazziling at night, the PETRONAS Twin Towers is inspired by Tun Mahathir Mohamad's vision for Malaysia to be a global player. Together with master architect Cesar Pelli, the international icon powerfully captures the nation's ambitions and assimilation	description2	<u>description3 stat</u> KL	
	<u>Edit Delete</u> 3	BBKLCC	Featured as the world's fourth best shopping oity in CNNGo, Kuala Lumpor is indeed a shopper's paradise. Case in point: Three of the world's 10 largest malls are in KL, while year-round sales offer the best bang for your buck.	The BBKLCC stretch from Bukit Bintang to Kuala Lumpur City Centre, in particular, will leave you spoit for choice with its abundant fashion, food and entertainment options. Lose yourself in the huge selection of local and international brands a valiable across nine signature malls within the area. The shopping district is alise well-connected via a covered pedestrian walkway and an efficient	KL	

Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

# **APPENDIX F**

#### APPENDIX F

#### APPENDIX F-1 User Manual

This user manual is for website Administrators, Members, and Visitors. The topics to be explained in this user manual can referred to the content page of user manual at page F-3.



#### CONTENTS

#### **CHAPTER 1: INSTALLATION GUIDE**

1.0	Installation of Internet Information Services (IIS)	F-5
1.1	How to use the system	F-10

#### **CHAPTER 2: GETTING STARTED**

2.0	Online Travel Assistant Home Page	F-11
2.1	Details Page	F-11
2.2	Search and Book Hotels	F-12
2.3	Login to the website	F-13
2.4	Register as a member	F-14
2.5	Logout from the website	F-15

#### **CHAPTER 3: ADMINISTRATOR PAGE'S FUNCTIONALITY**

3.1	Update Profile	F-16
3.2	Change New Password	F-16
3.3	Add Admin	F-17
3.4	View Feedback	F-17
3.5	Manage Admin/Member Account	F-17
3.6	Manage Photo Information	
	3.6.1 Upload Photos	F-18
	3.6.2 Edit Photos	F-19
3.7	Manage Attractions Information	
	3.7.1 Add New Attractions	F-20
	3.7.2 Edit Attractions	F-21
PTFR 4	4. MEMBER PACE'S FUNCTIONALITY	

# **CHAPTER 4: MEMBER PAGE'S FUNCTIONALITY**

4.1	Update Profile	F-22
4.2	Change New Password	F-22

#### APPENDIX F

4.3	Check Currency	F-23
4.4	Estimate Budget	F-23
4.5	Plan Budget	F-25
4.6	Calculate Travel Budget	F-25
4.7	Plan the Path	F-27
4.8	Search Nearby Places	F-29
4.9	Search Types of Places	F-29
4.10	Check Weather Forecast	F-30
4.11	Submit Travel Tip	F-31
4.12	Give Feedback	F-31

#### **CHAPTER 1: INSTALLATION GUIDE**

#### **1.0** Installation of Internet Information Services (IIS)

In order to use this system, Internet Information Services (IIS) is required. FYPcsharp is the name of the system.

1. Navigate to the Control Panel > Program > Turn Windows features on or off.

2. Check all the boxes that is shown in the figures below.

	Windows Features -		×
Turr	n Windows features on or off		(?)
To tu checl	rn a feature on, select its check box. To turn a feature off, cle k box. A filled box means that only part of the feature is turne	ear its ed or	5 1.
	<ul> <li>NET Framework 3.5 (includes .NET 2.0 and 3.0)</li> <li>Windows Communication Foundation HTTP Activation</li> <li>Windows Communication Foundation Non-HTTP</li> <li>NET Framework 4.5 Advanced Services</li> <li>ASP.NET 4.5</li> <li>WCF Services</li> <li>Internet Explorer 10</li> <li>Internet Information Services</li> <li>FTP Server</li> <li>Web Management Tools</li> <li>IS 6 Management Console</li> <li>IIS Management Scripts and Tools</li> <li>IIS Management Service</li> <li>World Wide Web Services</li> <li>NET Extensibility 3.5</li> <li>Application Development Features</li> <li>ASP</li> <li>ASP.NET 3.5</li> <li>ASP.NET 4.5</li> <li>GGI</li> <li>ISAPI Extensions</li> <li>ISAPI Extensions</li> <li>ISAPI Filters</li> <li>Server-Side Includes</li> <li>WebSocket Protocol</li> </ul>	ation	
-	ОК С	ance	:I

<b>.</b>	Windows Features -	- ×
Turn	Windows features on or off	0
To turr check l	n a feature on, select its check box. To turn a feature off, cle box. A filled box means that only part of the feature is turne	ar its ed on.
	Common HTTP Features	^
	Directory Browsing	
	HTTP Errors	
	HTTP Redirection	
	Static Content	
	🛛 📔 WebDAV Publishing	
	Health and Diagnostics	
	🔲 📔 Custom Logging	
	HTTP Logging	
	Logging Tools	
	Request Monitor	
	Performance Features	
	Upnamic Content Compression	
	Basic Authentication	
	Request Filtering	
	URL Authorization	~
<		>
	ок с	ancel

- 3. Click "OK" to proceed.
- 4. The IIS is setup.
### **1.1** How to use the system

- 1. Copy the published FYPcsharp folder toC:\inetpub\wwwroot
- 2. Navigate to Search and type "run" in the search box.
- 3. Type "INETMGR" and press "OK"

	Run	×
	Type the name of a program, folder, document, or Internative resource, and Windows will open it for you.	et
Open:	INETMGR	~
	OK Cancel Browse	

4. A new window is pop up. A Connection panel will be shown at the right hand side. Expand the Connection panel.

5. Expand Sites > Default Web Site > FYPcsharp

6. Right click FYPcsharp folder and click on "Convert to Application". FYPcsharp folder is now change to FYPcsharp application.



7. Right click on FYPcsharp Application and click on "Edit permission"

8. Click "Edit".

9. Navigate to Security Tab and located IIS\_IUSRS(MEIYI-PC\IIS\_IUSRS)

L	FYPcsh	arp Prope	erties		×
General Sharing	Security	Customize			
Object name: 0	:\inetpub\	www.root\FYf	ocsharp		
Group or user nan	nes:				
Administrator & Users (MEIY	s (MEIYI-P I-PC\Users	C\Administrat )	ors)		^
💐 IIS_IUSRS (	MEIYI-PC\	IIS_IUSRS)			
Structure Structure	llar			>	*
To change permis	sions, click	Edit.		Edit	
Permissions for IIS	_IUSRS		Allow	Deny	
Full control					^
Modify					
Read & execute	е		$\checkmark$		
List folder conte	ents		$\checkmark$		
Read			$\checkmark$		
Write					$\mathbf{v}$
For special permis click Advanced.	sions or ad	vanced settin	igs,	Advanced	
Learn about acce	ss control a	and permission	ns		
	0	К	Cancel	Арр	ly

10. Check "Allow" for full control. Click "Apply" then click "OK"

11. Right click on FYPcsharp Application and click "Manage Application" > "Advance Settings"

12. Make sure the boxes are inserted as below.

۵	(General)		
	Application Pool	DefaultAppPool	
	Physical Path	C:\inetpub\wwwroot\F	YPcsharp
	Physical Path Credentials		
	Physical Path Credentials Logon	ClearText	
	Preload Enabled	False	
	Virtual Path	/FYPcsharp	
۵	Behavior		
	Enabled Protocols	http	
\p	plication Pool		
Ap ap	<b>plication Pool</b> oplicationPool] Configures this ap plication pool.	plication to run in the spe	cified

13. Navigate to "Application Pools" at the right hand side Connection panel. Right click to add Application pools. Make sure the values are inserted as below.

Ac	d Application	Pool ? ×
Name:		
ASP.NET V4.0		
.NET Framewo	rk version:	
.NET Framewo	rk v4.0.30319	~
Managed pipe	line mode:	
Integrated	~	
✓ Start applica	ation pool immed	liately
[	ОК	Cancel

14. Navigate to "Application Pools" > Right click on ASP.NET v4.0 > Advanced Settings" Make Sure the value in Identity of Process Model is LocalSystem.

15.Click on "FYPcsharp" at the Connections Panel. In the middle panel, click " Connection String"

16. Click "Add"

17. Replace the server name to the user's computer name.

18. Click on "FYPcsharp" at the Connection panel > Click "Authentication" on the right.

19. Disable all others except "Anonymous Authentication"

21. Click on "FYPcsharp" at the Connection panel. On the right, click "Database Manager" and then expand "FYP ConnectionString".

22. User will be able to modify the database here.

23. Open a browser and type "locahost/FYPcsharp" and start to use the system.

24. These steps only have to conduct once for each computer.

#### **CHAPTER 2: GETTING STARTED**

### 2.0 Online Travel Assistant Home Page

This is the Home Page of Online Travel Assistant. Click any links in the page will navigate to the respective page. Each Page will have its own contents.



# 2.1 Details Page

Details page is known as any pages in this website that is information only and do not contain any other special features. For instance, Discovery Malaysia display any information that is related to Malaysia. Attractions Page display attractions information and Photo gallery page display all the photos for a particular places. All the links that can be seen in Home page can be viewed by any visitors. The layout of details page has slightly differences with the home page.



#### 2.2 Search and Book Hotels

Fill in the search criteria and click the search button to check the search results in another page. Some search criteria is mandatory.

#### Book your trip today

Search for Hotels				
Where?				
e.g. city, region, district or specific hot	el			
Check-in	Check-out			
Day V Month V	Day [	▼ Month ▼		
I don't have specific dates yet				
Guests				
2 adults in 1 room Search				

Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

#### 2.3 Login to the website

All the fields are required. Administrators or members who want to login to the system must key in the correct password and username. Please select Login as ADMIN if you are a administrator, while select Login as MEMBER if you are member. you will be direct to two different page.

Click "Remember Me " checkbox if you want to save your username and password for this website. Cookies will be created and save for 30 days.

LOGIN		
	Log In Online Travel Assistant	
Username :		
Password :		
Remember Me		Forget your password?
		Login
Sign in to your account =)		

Click "Forgot Password" link if you have forgotten you password. You will be redirected to another page to fill in your registered email address. You will receive an email that inform you your username and password within a few second after you have click "Submit" button.

Lost your password? Please enter your registered email address. You will receive your login details via email. ^^ Forget Your Password ! Enter you email address : Submit

Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

-

Please wait few second to receive your email.

### 2.4 Register as a member

You can register as a member of the website as long as you have completed the registration form.

The link below username textbox "Check Availability" allows users to check the existences of the username in database. A "CAPTCHA" image is a required field which can avoid spamming from others. Click "Register" button to submit the registration form.

# REGISTRATION

Already have an account? Sign in NOW !

Username:		]
	Check Availability	
Password:		]
First Name :		]
Last Name:		]
Contact Number		]
Email:		]
Country:		]
Type the word	GTUG9	-
	Register	1

An error message will appear if the username is already existed in the database. Registration will not be successful.

Username:	meiyi	
	Check Availability	
	Username is ALREADY EXISTS- NOT AVAILABLE !	

# 2.5 Logout from the website

You can click "Logout" button when you have already Login.



## **CHAPTER 3: ADMINISTRATOR PAGE'S FUNCTIONALITY**

#### 3.1 Update Profile

You can view your personal profile by clicking the "Update Profile" button. If you want to update your information, you can click "Edit " button to update. After editing, click "Update " button to update or click "Cancel".

You can edit you personal profile Anytime. =)				
	Admin Profile			
alD	2			
aUsername	admin			
aFirstname	MeiYi			
aLastname	Tan			
aContactno	012-895-0833			
aEmail cherry-meiyi@hotmail.com				
Edit				

#### 3.2 Change New Password

If you want to change new password for your account. You can click "Change New Password" to navigate to the page. Enter the old password and the new password, then click "Update" button to update your new password.



Current password :	
New password :	
Confirm password	
Update	
After update,Please Login	again to use the new password.

If the confirm password does not match with the new password. an error message will occur.

Password Mismatch

Bachelor of Computer Science (HONS)

Faculty of Information and Communication Technology (Perak Campus), UTAR.

# 3.3 Add Admin

You can add any admin into the database. This Page is same as Register page. Click "Check Availability " to check the existence of the username in database.

Username:	
	Check Availability
Password:	
First Name :	
Last Name:	
Contact Numbe	r:
Email:	
	Add

# Add a NEW admin.

## 3.4 View Feedback

You can view the feedback from any members by clicking the "View Feedback" link.

# Feedback from members

Feedback ID	<u>Username</u>	Subject	Feedback	<u>Date</u>
1	meiyi	Test Feedback	This is the first feedback	13/7/2013 7:14:48 PM
2	meiyi	Second Test	This is the second feedback.	13/7/2013 7:18:08 PM
3	lisa	Give Feedback	This is lisa first feedback. Thank you	13/7/2013 7:22:53 PM

# 3.5 Manage Admin/ Member Account

Click "Manage Admin Account" or "Manage Member Account" to view all the accounts and delete the accounts.

#### Manage Admin Accounts

	D	<u>Username</u>	<u>Firstname</u>	Lastname	Contactno	<u>Email</u>	<u>Createdon</u>	<u>Modifiedon</u>
Delete	2	admin	MeiYi	Tan	012-895-0833	cherry-meiyi@hotmail.com	14/7/2013 11:42:59 PM	14/7/2013 11:42:59 PM

F-17

#### Manage Member Accounts

	ID	Username	Firstname	Lastname	Contactno	Email	Country	Created On	Modified On
<u>Delete</u>	6	meiyi	MeiYi	Tan	012-895-0833	cherry-meiyi@hotmail.com	Malaysia	18/7/2013 12:35:46 AM	18/7/2013 12:35:46 AM
Delete	7	lisa	Lisa	Foo	017-552-8964	lisafoo@hotmail.com	Singapore	18/7/2013 2:34:16 PM	18/7/2013 2:34:16 PM

If a "Delete" link is click, a message is pop up to confirm. Click "OK" if you confirm to delete the account.

0	The page at localhost:21708 says:
Are y	ou sure you want to delete this Account?
	OK Cancel

# 3.6 Manage Photo Information

#### 3.6.1 Upload Photos

Browse the image file location on your computer and click "Upload" to upload the photo to the database after you have enter the description of the photo and the state of the photo. The uploaded photo will be displayed in the Photo Gallery of the website.

lo file chosen	

After the photo is uploaded, a successful message will displayed.

```
Image File is successfully uploaded.
```

You can view the photos that uploaded recently.

Photos uploaded recently



## 3.6.2 Edit Photos

All photos are categorized into different groups depends on the state of the photo. Therefore, click the state link to navigate to part that shows the particular states' photo. Click "Edit" link to edit the information of the photos and click "Delete" link to delete the photo and its information.

#### Edit Existence Photos

Kuala Lumpur Penang Langkawi Island Genting Highlands Negeri Sembilan Melaka Putrajaya Perak Cameron Highlands Terengganu Johor Bahru Kelantan Kuala Lumpur photoID **FileName FilePath** Preview Image description state Petronas towers at Edit Delete 4 KL kl1.jpg photos/kl1.jpg night Edit Delete 5 kl2.jpg photos/kl2.jpg KLCC Aquarium KL

When the "Edit" button is clicked. You can edit the information. Click "Update" to save the changes or click "Cancel" to return to the original information.

	photolD	<u>FileName</u>	<u>FilePath</u>	Preview Image	description	<u>state</u>
Update Cancel Delete	4	kl1.jpg	photos/kl1.jpg		Petronas towers at nigh KL	

Click "Delete" link to delete the photo. A message will pop up to confirm the deletion. Click "OK" to confirm delete.

0	The page at localhost:21708 says: ×
Arey	you sure you want to delete this photo?
	OK Cancel

## 3.7 Manage Attractions Information

# 3.7.1 Add New Attractions

Fill in the attractions information and click "Add Attractions" button to add the attractions information to database and displayed it in the website.

* Required field	
* Attraction's Name:	
* Description 1:	
Description 2:	
Dependence 2:	
Description 5.	
• Circle	
State	
Add attraction	

A success message is display when the attraction information is successfully added to the database.



#### **3.7.2 Edit Attractions**

All attractions are categorized into different groups depends on the state of the attraction belongs to. Therefore, click the state link to navigate to part that shows the particular states' attractions. Click "Edit" link to edit the information of the attractions and click "Delete" link to delete the attractions from the database. The deleted information will be removed from the website.

#### Edit Attractions Information

Click to Jump to the part

<u>Perlis</u> Pahang	<u>Kedah</u> Kual	Penano a Lumpur	<u>Perak Kelantan</u> <u>Putrajaya Negeri S</u>	<u>Terengganu Sela</u> embilan <u>Melaka</u>	angor Johor		
Kuala Lump	ur						
	<u>placeID</u>	<u>placeName</u>	description1	description2		description3	state
Edit <u>Delete</u>	1	Petronas Twin Towers	Soaring to a height of 451.9 metres, the 88-storey twin structure is Kuala Lumpur's crown jewel. Majestic by day and dazzling at night, the PETRONAS Twin Towers is inspired by Tun Mahathir Mohamad's vision for Malaysia to be a global player. Together with master architect Cesar Pelli, the international icon powerfully captures the nation's ambitions and aspirations.				KL

When the "Edit" button is clicked. You can edit the information. Click "Update" to save the changes or click "Cancel" to return to the original information.

Kuala Lumpur

placel	) placeName	description1	description2	description3	<u>state</u>
Update Cancel Delete 1	Petronas Twin Towers	Soaring to a height of 451			KL

Click "Delete" link to delete the photo. A message will pop up to confirm the deletion.

Click "OK" to confirm delete.



## **CHAPTER 4: MEMBER PAGE'S FUNCTIONALITY**

#### 4.1 Update Profile

You can view your personal profile by clicking the "Update Profile" button. If you wants to update your information, you can click "Edit " button to update. After editing, click "Update " button to update or click "Cancel".

(ou can update you personal profile Anytime. =)				
P	ersonal Profile			
User ID	6			
Username :	meiyi			
First Name :	MeiYi			
Last Name :	Tan			
Contact Number :	012-895-0833			
Email Address :	cherry-meiyi@hotmail.com			
Country :	Malaysia			
Edit				

#### 4.2 Change New Password

If you want to change new password for your account. You can click "Change New Password" to navigate to the page. Enter the old password and the new password, then click "Update" button to update your new password.



Current password :	
New password :	
Confirm password	
Update	
After update,Please <u>Login</u>	again to use the new password.

If the confirm password does not match with the new password. an error message will occur.

Password Mismatch

# 4.3 Check Currency

You can check the latest currency enter the amount of money to exchange, select the currency type from the dropdown list and click "Convert" to get the latest currency exchange rate.

	-	
Amount:	100	
From:	United States Dollars \$	~
To:	India Rupees Rs	~
	Convert	

Check the latest currency exchange rate.

The latest currency exchange rate will be display at the result panel.



#### 4.4 Estimate Budget

Select the place and select the travel style in order to know the estimated budget.

Budget Estimator
Which place are you going?
Kuala Lumpur 🗸
Select your travel style
Budget (Cheap) 🗸
Estimate

After the "Estimate" button is clicked. The result will be displayed.

Average Daily Travel cost (RM) : 41.15	
Accommodation (RM) :	26.23
Food (RM) :	9.4
Water (RM) :	1.4
Local transportation (RM) :	4.76
Entertainment (RM) :	4.33
Communication (RM) :	0.5
Tips and handouts (RM) :	0.13
Souvenirs (RM) :	8.63
Alcohol (RM) :	11.58

#### 4.5 Plan Budget

You enter the amount of money, duration of trip and amount of people in to the respective textbox. Then click "Plan" button to plan how much money can be spend in different category. The result will be display on the same page.



#### 4.6 Calculate Travel Budget

You are required to fill in all the textbox that is provided. Click "Calculate" button to calculate the money that you have spent or the total money that you plan to spend in the trip. Below is part of the content of the calculator.

#### Travel Budget Calculator

Enter the Name of Your Trip	
BEFORE YOU GO	
Passports,visas	
Vaccinations & medications	
Travel insurance	
Child care	
Pet boarding	
Luggage	

Bachelor of Computer Science (HONS) Faculty of Information and Communication Technology (Perak Campus), UTAR.

You can click "Save" button to save the budget calculated.

# Save

Saved budget record can be viewed in future or print it. The diagram below shows the example of budget record.

Your Budget Record				
Your Record ID	1			
Trip Name:	Kuala Lumpur Trip			
BEFORE YOU GO TRIP	6.00			
Passport	1.00			
Medication	1.00			
Insurance	1.00			
Child Care	1.00			
Pet Boarding	1.00			
Luggage	1.00			
AIR TRAVEL	8.00			
Air Fare	2.00			
Baggage	2.00			
Airport Parking	2.00			
Airport Transfer	2.00			
TRANSPORTATION	9.00			
Car Rental	3.00			
Rail Ticket	3.00			
Bus Fares	3.00			
HOTELS & MEALS	20.00			
Room Rate	4.00			
Breakfast	4.00			
Lunch	4.00			
Dinner	4.00			
Snacks	4.00			
SIGHTSEEING & ACTIVITIES	25.00			
Tour	5.00			
Activity Fees	5.00			
Entrance Fees	5.00			
Entertainment	5.00			
Souvenirs	5.00			
OTHER EXPENSES	5.00			
TOTAL(Overall)	73.00			

Print

When click print, the below page will pop up.

0		DI	V Contents	s - Google Chrome			- 🗆		×
🗅 a	bout:blank								
Re	Print			nons Return to Travel Budget Calculator	Div/Carlina		1	Ŷ	^
	Total: 2 sheet	s of paper		You have saved the following data. You may print it	for reference during your trip.		_	'	
				Your Bu	dget Record	_			
Yc			1	Your Record ID	1				
		Print Cancel		Trip Name:	Kuala Lumpur Trip				
				BEFORE YOU GO TRIP	6.00				
				Passport	1.00				
			^	Medication	1.00				
	Destination	Canon MX350 series		Insurance	1.00				
	Destination			Child Care	1.00				
				Pet Boarding	1.00				
		Change		Luggage	1.00	_			
				AIR TRAVEL	8.00				
				Air Fare	2.00	_			
				Baggage	2.00	_			
	Pages	All		Airport Parking	2.00	_			
				Airport Transfer	2.00	_			
				TRANSPORTATION	9.00	_			
		e.g. 1-5, 8, 11-13		Car Rental	3.00	_			
		2		Rail Ticket	3.00	_			
				Bus Fares	3.00	_			
				HOTELS & MEALS	20.00	_			
				Room Rate	4.00	_			
	Copies	1 + -		Breakfast	4.00	_			
				Lunch	4.00	_			
				Dinner	4.00	_			
				Snacks	4.00	_			
	Lavout	Portrait		SIGHTSEEING & ACTIVITIES	25.00	_			
	Layout	O Politan		Tour	5.00	_			
		o		Activity Fees	5.00	_			
		Landscape		Entrance Fees	5.00	_			
				1 · · · · · · · · · · · · · · · · · · ·		10			~

### 4.7 Plan the Path

You can click on the map to plot the places that you want to go, then select the travel mode to travel. By default, it will be driving. After you have marked all the places, click "Get direction" button to calculate the route. When the "View map with traffic info" is clicked, the map will show the traffic information . Different colour represent different traffic situation. Click "Start Over", if you want to plan a new route.

The diagram below shows the map without traffic information.



The diagram below shows the map with traffic information.



#### 4.8 Search Nearby Places

Enter the place that you are located, and the nearby places will be displayed on the map and the name of the nearby places will be listed.



#### 4.9 Search Type of Places

Select the types of places that you want to search, and select the radius. Click "Search Places" button to search the type of places at the location. The result of the search will be displayed on the map.

Keyword (optional):	
	$\equiv$
Type:	
Hotel	~
	=
Radius:	
500	¥
Search Places	

#### 4.10 Check Weather Forecast

Select the location from the dropdown list provided, click "Check Weather" to get the weather information. Below shows the example of weather information for a specific location.

Conditions for Kuala Lumpur, MY at 4:00 am MYT
<i>~</i>
Current Conditions:
Mostly Cloudy, 79 F
Forecast:
Mon - Scattered Thunderstorms. High: 87
Low: 76
Tue - Scattered Thunderstorms. High: 88
Low: 76
Wed - Isolated Thunderstorms. High: 90
Low: 76
Thu - Scattered Thunderstorms. High: 90
Low: 76
Fri - Scattered Thunderstorms. High: 89
Low: 76
Full Forecast at Yahoo! Weather
(provided by The Weather Channel)

The diagram below show the map that can display the weather information.



# 4.11 Submit Travel Tip

Enter the travel tip that you would like to share in the give blank space. Click "Submit button" to submit . Click "Cancel" to leave the page.

Title (Required)	
City (Required)	
Category	
Tip (Required)	
Submit	Cancel

#### 4.12 Give Feedback

Enter the subject and feedback. Click "Submit " button to submit and store feedback to database.

Feed	back	Form

Subject :	
Feedback :	
Submit	

# **APPENDIX G**

#### **APPENDIX H-1 Journal**



Available online at: <u>www.ijarcsse.com</u>

A Comparative Analysis of Different types of Models in Software Development Life Cycle

Ms. Shik ha mahes hwari<sup>1</sup> Research Scholar in Dept.of C.S.E. S.V.I.T.S. Indore(M.P) shikhamahes hwari 0906@gmail.com **Prof.Dines h Ch. Jain<sup>2</sup>** *Reader, S.V.I.T.S.Indore* dineshwebsys@gmail.com

Abstract- In the present scenario all software systems are imperfect because they cannot be built with mathematical or physical

Abstract- in the present scenario an software systems are imperfect because they cannot be built with manematical or physical certainty, Hence in this research paper the comparison of various software development models has been carried out. According SDLC each and every model have the advantage and drawbacks so in this research we have to calculate the performance of each model on behalf of some important features. The concept of system lifecycle models came into existence that emphasized on the need to follow some structured approach towards building new or improved system. Many models were suggested like waterfall, Iterative model, prototype model, spiral model etc.

Keywords- Software Development Process, S DLC, phase of SDLC models, Comparative analysis of model, four models.

#### I. INTRODUCTION

A software development process, also known as a software development life cycle (SDLC), is a structure imposed on the development of a software product. It is often considered as a subset of system development life cycle. There are several models for such processes, each describing approaches to a variety of activities that take place during the process.

Software Engineering (SE) is the application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software, and the study of these approaches; that is, the application of engineering to software because it integrates significant mathematics, computer science and practices whose origins are in Engineering. Various processes and methodologies have been developed over the last few decades to improve software quality, with varying degrees of success. However, it is widely agreed that no single approach that will prevent project stat are large, complicated, poorly-specified, and involve unfamiliar aspects, are still particularly vulnerable to large, unanticipated problems.

A software development process is a structure imposed on the development of a software product. There are several models for such processes, each describing approaches to a variety of tasks or activities that take place during the process. It aims to be the standard that defines all the tasks required for developing and maintaining software. Software Engineering processes are composed of many activities, notably the following:

© 2012, IJARCSSE All Rights Reserved

- Requirements Analysis ,
- Specification
- Software architecture
- Implementation
- Testing
- Documentation
- Train ing and Support
- Maintenance

Software development teams, taking into account its goals and the scale of a particular project, and have a number of well-established software development models to choose from. Therefore, even though there are number of models each software Development Company adopts the bestsuited model, which facilitates the software development process and boosts the productivity of its team members. There are four types of Model are:

- 1 Waterfall
- 2 Iterative
- 3. Prototype
- 4. Spiral.
- II. PHASES OF SDLC

Problem solving in software consists of these activities:

- Understanding the problem
- Deciding a plan for a solution
- Coding the planned solution
- Testing the actual program

For large systems, each activity can be extremely complex and methodologies and procedures are needed to perform it efficiently and correctly. Furthermore, each of Page | 285

the basic activities itself may be so large that it cannot be handled in single step and must be broken into smaller steps. For example, design of a large software system is always broken into multiple, distinct design phases, starting from a very high level design specifying only the components in the system to a detailed design where the logic of the components is specified. The basic activities or phases to be performed for developing software system are

- · Determination of System's Requirements
- Design of system
- Development (coding) of software
- System Testing



Fig1. Software Development Life Cycle

#### III. SOFTWARE DEVELOPMENT MODELS A) Original Waterfall Model

The Waterfall model is a conventional, linear, sequentional or traditional waterfall software life cycle model. It is a sequential development approach, in which development is seen as flowing steadily downwards through the phases of requirements analysis, design, implementation, testing (validation), integration, and maintenance.

1) Basic Principles

- Project is divided into sequential phases, with some overlap and splash back acceptable between phases.
- Emphasis is on planning, time schedules, target dates, budgets and implementation of an entire system at one time.
- Tight control is maintained over the life of the project via extensive written documentation, formal reviews, and approval/signoff by the user and information technology management occurring at the end of most phases before beginning the next phase.

2) Advantage of original water model:

- Each stage has well defined deliverable or milestone.
- · It is simple to use and understand.

© 2012, UARCSSE All Rights Reserved

 It acts as template into which methods for analysis, design, code test and maintenance can be placed.



#### Fig2. Original Waterfall Model

3) Disadvantage of original water model:

- The biggest disadvantage of the waterfall model is one of its greatest advantages. You cannot go back a step; if the design phase has gone wrong, things can get very complicated in the implementation phase.
- Often, the client is not very clear of what he exactly wants from the software. Any changes that he mentions in between may cause a lot of confusion.
- Small changes or errors that arise in the completed software may cause a lot of problems.
- Another major disadvantage of the waterfall model is that, until the final stage of the development cycle is Complete, a working model of the software does

not lie in the hands of the client.

B) Iterative Waterfall Model

- Basic Principles
   The problems with the Waterfall Model created a
  demond for a new particular of data larger and the second second
- demand for a new method of developing systems which could provide faster results, require less up-front information and offer greater flexibility.
- Iterative model, the project is divided into small parts. This allows the development team to demonstrate results earlier on in the process and obtain valuable feedback from system users.

Page | 286

#### www.ijarcsse.com

 each iteration is actually a mini-Waterfall process with the feedback from one phase providing vital

Information for the design of the next phase.



Fig3. It erative waterfall model

2) Advantages-

- It is much better model of the software process.
- It allows feedback to proceeding stages.
- It can be used for project wherein the requirements are not well understood.

2) Disadvantages-

- It is not easy to manage this model.
- No clear milestones in the development process.
- No stage is really finished.

C) Prototyping Model

Software prototyping is the development approach of activities during software development, the creation of prototypes, i.e., incomplete versions of the software program being developed.

1) Basic Principles

- Not a standalone, complete development methodology, but rather an approach to handling selected parts of a larger, more traditional development methodology.
- Attempts to reduce inherent project risk by breaking a project into smaller segments and providing more ease-of-change during the development process.
- User is involved throughout the development process, which increases the likelihood of user acceptance of the final implementation.
- Small-scale mock-ups of the system are developed following an iterative modification process until the Prototype evolves to meet the users

requirement .

 While most prototypes are developed with the expectation that they will be discarded, it is

© 2012, UARCSSE All Rights Reserved

#### www.ijarcsse.com

possible in some cases to evolve from prototype to working system.

 A basic understanding of the fundamental business problem is necessary to avoid solving the wrong problem.



#### Fig4. Prototype Model

2) Advantages-

- Early visibility of the prototype gives users an idea of what the final system looks like Encourages active participation among users and producer.
- Enables a higher output for user.
- Cost effective (Development costs reduced)
- Increases system development speed
- Assists to identify any problems with the efficacy of earlier design, requirements analysis and coding activities.

3) Disadvantages-

- Possibility of causing systems to be left unfinished.
- Possibility of implementing systems before they are ready.
- Producer might produce a system inadequate for overall organization needs.
- Often lack flexibility.
- Not suitable for large applications.
- Project management difficulties.

#### D) Spiral Model

The spiral model is a software development process combining elements of both design and prototyping-instages, in an effort to combine advantages of top-down and bottom up concepts. It is a meta-model, a model that can be used by other models.

1) Basic Principles

- Focus is on risk assessment and on minimizing project risk by breaking a project into smaller segments and providing more ease-of-change during the development process, as well as providing the opportunity to evaluate risks and weigh consideration of project continuation throughout the life cycle.
- Each cycle involves a progression through the same sequence of steps, for each part of the

Page | 287

product and for each of its levels of elaboration, from an overall concept-of-operation document down to the coding of each individual program.

- Each trip around the spiral traverses four basic quadrants: (1) determine objectives, alternatives, and constraints of the iteration; (2) evaluate alternatives; Identify and resolve risks; (3) develop and verify deliverables from the iteration; and (4) plan the next iteration.
- Begin each cycle with an identification of stakeholders and their win conditions, and end each cycle with review and commitment.



#### www.ijarcsse.com

- Every time a new prototype is obtained ,it is revaluated again and again by the customer .so more customer involvement is there.
- Better productivity through reuse capabilities.
- Proper control over cost ,time and manpower requirement for a project work.
- Errors are eliminated in early phases of project development only.

Disadvantages-

- This model requires risk identification, its projection, risk assessment and risk management which is not an easy task.
- Cost and time estimations are also not very easy.
- This model is not suitable for smaller project as then the cost of risk analysis is greater than cost of the entire project.

IV. Comparative A	alysis of Four	Models
-------------------	----------------	--------

Features	Original water fall	Iterative water fall	Prototyping model	Spiral model
Requirement Specification	Beginning	Beginning	Frequently Changed	Beginning
Understanding Requirements	Well Understood	Not Well understood	Not Well understood	Well Understood
Cost	Low	Low	High	Expensive
Availability of reuseable component	No	Yes	yes	yes
Complexity of system	Simp le	simp le	complex	complex
Risk Analysis	Only at beginning	No Risk Analysis	No Risk Analysis	yes
User Involvement in all phases of SDLC	Only at beginning	Intermediate	High	High
Guarantee of Success	Less	High	Good	High
Overlapping Phases	No overlapping	No Overlapping	Yes Overlapping	Yes Overlapping
Implementation time	long	Less	Less	Depends on project
Flexibility	Rigid	Less Flexib le	Highly Flexible	Flexib le

© 2012, UARCSSE All Rights Reserved

Page | 288

G-5

#### www.ijarcsse.com

Changes	Difficult	Easy	Easy	Easy
Incorporated				
Expertise Required	High	High	Medium	High
Cost Control	Yes	No	No	Yes
Resource Control	Yes	Yes	No	Yes
1				

Table1 Comparison of four models.

#### V. CONCLUSION

After analysis of all models through the various factors, it has been found that the original water fall model is used by various big companies for their internal projects. Since the development team is familiar to the environment and it is feasible to specify all requirements of working environment. Iterative water fall model overcome the drawback of original waterfall model. It allow feedback to proceeding stage. Prototype model used to develop online systems for transaction processing. Since significantly reduce rework and lead to the creation of working model in lower capital cost. Spiral model is used for development of large, complicated and expensive projects like scientific Projects .Since spiral model approach enables the project term to address the highest risk at the lowest total cost.

#### ACKNOWLEDGMENT

Shikha Maheshwari pursuing Master Of Engineering in Computer science branch from SVITS indore. She has done research work in the area of software engineering.

I would like to thanks to Prof. Dinesh Chandra Jain for supporting in this research paper.

#### REFERENCE

[1]Dr. Deepshikha Jamwal''Analysis of software Development Models'', ISSN: 2229-4333(print), ISSN:09768491(online), vol. IISSUE 2, Decemder 2010.

[2]Chan, D.K.C. Leung, K.R.P.H, "Software development as a workflow process", 2-5 Page(s): 282 – 291, Dec. 1997.

[3]Kushwaha ety.al, "Software Development Process and Associated Metrics - A Framework", IEEE CNF, Page(s):255 – 260, July 2006.

© 2012, UARCSSE All Rights Reserved

[4]Rothi, J., Yen, D, "System Analysis and Design in End User Developed Applications", Journal of Information Systems Education, 1989

[5]Boehm, B. W. "A Spiral Model of Software Development and Enhancement", ISSN: 0018-9162, Volume: 21, Issue: 5, on page(s): 61-72, May 1988.

[6]Swapanja Ingale "Comparative Study Of Software Development Model" International conference on advances in computing & management 2012

[7]Jovanovich, D., Dogsa, T. "Comparison of software development models," Proceedings of the 7th International Conference on, 11-13 June 2003, ConTEL 2003, pp. 587-592.

[8]Maglyas, A.; Nikula, U.; Smolander, K., "Comparison of two models of success prediction in software development projects", Software Engineering Conference (CEE-SECR), 2010 6th Central and Eastern European on 13-15 Oct. 2010, pp. 43-49.

[9] A. M. Davis, H. Bersoff, E. R. Comer, "A Strategy for Comparing Alternative Software Development Life Cycle Models", Journal IEEE Transactions on Software Engineering, Vol. 14, Issue 10, 1988

[10]Sanjana Taya "Comparative Analysis of Software Development Life" ISSN:2229-4333(print),ISSN:0976-8491(online),vol.2ISSUE 4,Oct-Dec2011

[11]Molokken-Ostvold et.al, "A comparison of software project overruns - flexible versus sequential development models", Volume 31, Issue 9, Page(s): 754 – 766, IEEE CNF, Sept.2005.

[12] S. M. Metev and V. P. Veiko, Laser Assisted Microtechnology, 2nd ed., R. M. Osgood, Jr., Ed. Berlin, Germany: Springer-Verlag, 1998

Page | 289

# **APPENDIX H**

# FYP2

ORIGI	INALITY REPORT			
4	%	2 %	1 %	2 %
SIMILA	ARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS
PRIMA	ARY SOURCES			
1	Submitted to U Student Paper	niversity of Cape Tow	า	< 1%
2	hostingvps.co Internet Source			< 1%
3	liquidwebcreati	ons.com		< 1%
4	www.coursehe Internet Source	ro.com		< 1%
5	Submitted to Au Student Paper	merican Intercontinent	al University Online	< 1%
6	Submitted to So Student Paper	chool of Accounting &	Management	< 1%
7	Submitted to U Student Paper	niversity of Newcastle		< 1%
8	www.c2.com Internet Source			< 1%
9	Submitted to In Student Paper	formatics Education Li	mited	< 1%
10	Submitted to IN Student Paper	ITI International Unive	rsity	< 1%
11	epublications.b	ond.edu.au		< 1%
12	Submitted to Re	oyal Melbourne Institu	te of Technology	< 1%
13	Submitted to KI Student Paper	MD Computer Center		< 1%
14	code.google.co	om		< 1%
15	Submitted to U	niversity of South Aus	tralia	< 1%
16	Submitted to IN Student Paper	ITI International Colleg	e Subang	< 1%

3

17	Submitted to Universiti Tunku Abdul Rahman Student Paper	< 19	%
18	www.cbi.msstate.edu Internet Source	< 19	%
19	www.randomiq.com	< 19	%
20	Submitted to Universiti Utara Malaysia Student Paper	< 19	%
21	Submitted to University of Malaya Student Paper	< 19	%
22	www.samigrationservices.co.za	< 19	%
23	Submitted to Franklin University Student Paper	< 19	%
24	freewebhostingindia.org	< 19	%
25	Shreves, . "Getting the Most from Site Configuration", Joomla!® Bible Shrev. <i>Publication</i>	< 19	%
26	Kelly, Solange. "Energy Systems Improvement based on Endogenous and. <i>Publication</i>	< 19	%
27	Dündar, Oğuz (Akman, İbrahim). "An implementation of helpdesk manageme. <i>Publication</i>	< 19	%
28	www.c59.co.id Internet Source	< 19	%
29	www.doc.eng.cmu.ac.th Internet Source	< 19	%
30	wiredspace.wits.ac.za	< 19	%
31	it.impressbm.co.jp Internet Source	< 19	%
32	dypimca.org	< 19	%
33	Al-Yafi, Karim(Lee, H and Mansouri, A). "A feature-based comparison of th. Publication	< 19	%
34	www.littlestarmagic.com Internet Source	< 19	%
35	experiencegendex.com Internet Source	< 19	%

36	D. J. Evansi. "Solving optimisation problems using neucomp-a neural netwo. <i>Publication</i>	<	1%
37	Zander-Nowicka, Justyna. "Model-based Testing of Real-Time Embedded S Publication	<	1%
38	epromptc.com Internet Source	<	1%
39	elib.unikom.ac.id Internet Source	<	1%
40	Reichenauer, Arno. "LUCIA: Development of a comprehensive Information . <i>Publication</i>	<	1%
41	Sonnenburg, Soeren. "Machine Learning for Genomic Sequence Analysis". <i>Publication</i>	<	1%
42	myassignmenthelp.info Internet Source	<	1%
43	www.cassino.zulo.pl Internet Source	<	1%

EXCLUDE QUOTES OFF EXCLUDE BIBLIOGRAPHYOFF EXCLUDE MATCHES OFF

2