

Android Mobile Application ‘One Click Tourism Advisor’

by

HUDA ABDU AHMED

14211

Dissertation submitted in partial fulfilment of
The requirements for the
Bachelor of Technology (Hons)
Business Information System

September 2014

University Technology PETRONAS
Bandar Seri Iskandar
31750 Tronoh
Perak DarulRidzuan

CERTIFICATION OF APPROVAL

Android Mobile Application “One click tourism Advisor”

by

Huda Abdu Ahmed

14211

A project dissertation submitted to
Business Information System Programme
University Technology PETRONAS
In partial fulfilment of the requirement for the
BACHELOR OF TECHNOLOGY (HONS)
BUSINESS INFORMATION SYSTEM

Approved by,

(Dr. Mohamed Nordin B. Zakaria)

UNIVERSITI TEKNOLOGI PETRONAS
TRONOH, PERAK
September 2014

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the reference and acknowledgement, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

Huda Abdu Ahmed AlThaibani

ABSTRACT

Given paper discuss main objectives of “one click tourism advisor” Android mobile Application, which aims to assist tourist with their traveling by allowing user or traveler to enter their preferences (i.e. the content and the country they would like to visit, the preferred visit area they would like to be in that specific country , the budget they would like to spend ,the package they would like to pick and the type of transportation they would like to use) the application is equipped with functions that take this information from the user and suggest them places accordingly . Furthermore this paper will discuss how it is going to be achieved .To support in depth preliminary studies and number of critical analysis have been performed.

TABEL OF CONTENT

CERTIFICATION	i
ABSTRACT	iii
ACKNOWLEDGMENT	viii
CHAPTER 1: INTRODUCTION	1
1.1. Background of Study	1
1.2. Problem statement	2
1.3. Objectives	2
1.4. Scope	3
CHAPTER 2: LITERATURE REVIEW	4
2.1. Economic Contribution of travel and tourism	4
2.2. Mobile Technology	5
2.3. Android Operating System	6
2.4. Impact of smart phones application on tourism	8
2.5. Related works	10
2.6. Existing Tourism Mobile Applications	12
CHAPTER3: METHODOLOGY	13
3.1. Research method	13
3.2. System Development Approach	13
3.3. System development stages	14
3.4. Tools	18
3.5. Use Case Diagram	20
3.6. Class Diagram	21
3.7. Flow Chart	22
3.8. Gantt chart	23
3.9 Project Activities and key mile stone	24
CHAPTER 4: RESULT AND DICUSSION	25
4.1. Results from survey	25
4.2. Application Screenshots	32
4.3 User Acceptance Testing (UAT)	37
4.3.1 Social Factors	37

4.3.2 Technological factors	42
4.3.3 Customer Satisfaction.....	46
CHAPTER 5: CONCLUSION AND RECOMMENDATION.....	48
REFERENCES.....	49
APPENDIX I-a: Data Base	51
APPENDIX I-b: Data Base.....	53
APPENDIX II: Application Code	54
a- Database Helper code	54
b- ThePlaces code	61
c- Search result code	71

List of Figure

Figure 1 Android platform	7
Figure 2 8-Reasons why people choose Android (Khatri, 2013)	8
Figure 3 Trip Advisor Interface.....	10
Figure 4 The Explore feature.....	11
Figure 5 Nearby Attraction Feature.....	11
Figure 6 System Development Stages.....	14
Figure 7 System flow of OCTA	16
Figure 8 Android Smartphone and Tablet.....	19
Figure 9 Use Case Diagram.....	20
Figure 10 Class diagram.....	21
Figure 11 Flow Chart	22
Figure 12 Percentage of Traveling Frequency	25
Figure 13 Type of Traveling	26
Figure 14 Trip Planning Ways	27
Figure 15 Searching the Convenient Place take time?	28
Figure 16 Is changing destination time consuming or not?.....	28
Figure 17 Is changing destination costly or not?.....	29
Figure 18 Usage of traveling Apps or website	29
Figure 19 Percentage of Apps and website usage to plan Trips.....	30
Figure 20 Using an Application according Preference.....	31
Figure 21 The interface of OCTA 1	32
Figure 22 The interface of OCTA 2	32
Figure 23 The continents menu	33
Figure 24 The Countries Menu	33
Figure 25 The visit Area Menu	34
Figure 26 The package Menu.....	34
Figure 27 Budget entry.....	35
Figure 28 The Seasons Menu	35
Figure 29 The Food type Menu.....	36
Figure 30 Result Page	36
Figure 31 The UAT on OCTA's user-friendliness	38
Figure 32 The UAT on OCTA's usefulness	39
Figure 33 The UAT on OCTA's usability	40
Figure 34 The UAT on The OCTA's Ease of Time	41
Figure 35 The UAT on Availability of information.....	42
Figure 36 The UAT on Attitude.....	44
Figure 37 The UAT on Behavioral intention	45
Figure 39 The UAT on Mobile Application Quality	46
Figure 38 The UAT on Mobile Application quality.....	46

List of Table

Table 1 Percentage of Market Share of Top Smartphone Platform (Survey in US) (Fingas, 2012)	7
Table 2 Existing Tourism app similarity and differences	12
Table 4 The project activities and the milestone of FYPI	24
Table 6 The UAT on OCTA's user -friendliness data	38
Table 7 The UAT on OCTA's usefulness data	39
Table 8 The UAT on OCTA's usability data	40
Table 9 The UAT on OCTA's Ease of Time data	41
Table 10 The UAT on Availability of information data	43
Table 11 The UAT on Attitude data	44
Table 12 The UAT on Behavioral intention data	45
Table 13 The UAT on Mobile Application Quality data	47

ACKNOWLEDGMENT

All praise to Allah S.W.T for giving me strength to overcome all the challenges in this final year project.

Firstly, I would like to offer my sincere gratitude to my supervisor, Dr. Mohamed Nordin B. Zakaria who has guided and assisted me throughout my final year project with patience and knowledge.

Secondly, I would like to express my immense gratitude to my parents and my family who constantly were concern on the progress of my project as well as my wellbeing. Without their endless guidance and moral support this project wouldn't have been successfully completed.

Last but not least, I would like to also thank all my friends who directly or indirectly helped me with this project.

CHAPTER 1

INTRODUCTION

1.1. Background of Study

Tourism is one of the industries that are growing rapidly and it is also one of the largest in the world .World tourism grew by a record 26% between 1970 and 1990 (Hale and Altalo 2002).

It is also found that tourism is one of the most important sources of income; it plays a big role in raising the economy of a specific country. Having a good economy will increase the individual gross domestic product (GDP).

According to the latest UNWTO World Tourism Barometer, receipts in destinations worldwide from expenditure by international visitors on accommodation, food and drink, entertainment, shopping and other services and goods, reached an estimated US\$ 1159 billion (euro 873 billion) in 2013. Growth exceeded the long-term trend, reaching 5% in real terms (taking into account exchange rate fluctuations and inflation). The growth rate in receipts matched the increase in international tourist arrivals, also up by 5%, reaching 1087 million in 2013, from 1035 million in 2012.

“These are very positive results as growth in international tourists last year was equal to growth in income generated by over one billion tourists that travelled the world in 2013, for business, leisure, visiting friends and relatives or other purposes. Such results confirm the increasingly important role of the tourism sector in stimulating economic growth and contributing to international trade,” said UNWTO Secretary-General, TalebRifai.

Tourism is also one of the businesses that are mostly influenced by the technology revolution. As information technology is the most important factor in the life of travel industries effective use of IT is crucial. Hence the IT system is being rapidly spread around throughout the tourism industry and none of the end user will be able to escape

from its importance and impact. It is difficult for travelers to inspect or display the tourism service unless they go and experience the location they chosen to travel to, however the representation and description and more detail provided about the location by the travel agencies to attract consumer could be easily done with the help of Information technology through websites or Smart phone Applications like for example Trip Advisor, Holliday Planner, Malaysia Tourism website and etc. Timely and accurate information relevant to consumer needs is always the key factor to satisfy the tourism demand.

That is where ONE Click Tourism Advisor Application can bring benefit to tourist by suggesting them beautiful places and countries to visit according to their preferences and need by using Smart phones.

1.2. Problem statement

- There are cases that tourist after arriving to pre-booked place find it not satisfactory and planning of re-tour takes extra time and money.
- Due to the dynamic(high demanding and challenging) work environment people mostly plan their vacation on spontaneous basis,and face difficulties in browsing the net to find and match desired preference.
- Only few of the currently available vacation planners and advisors are helpful for those users who are not certain about the places they want to visit.

1.3. Objectives

- To develop a one click tourism advisor android mobile Application that will suggest to user most desired places according to their preferences.
- To ensure that given application will help the user to save time and money in their travel planning.
- To equip the application with features that considers user budget, time, choice of food accommodation, transportation, places of interest and preference of packages deal when offering places to visit.

1.4. Scope

Defining project scope is critical toward successful delivery of the system that targeted to be developed. Hence, below described the detailed outline of project range which lies within its scope:

- The application is limited for touristic places in some of the Asian countries in the beginning stage because of the time frame given for the project.
- The given mobile App intended for advising purposes and does not take into account any online booking or links to payments and transfer.
- The Application also bypasses the issues of users with visa or any matters related to immigration therewith.

CHAPTER 2

LITERATURE REVIEW

In recent years, the advancement in mobile technology has provided the consumers with more meaningful experiences in traveling. The trend of using smartphone mobile applications in the context of tourism has a greatly impact on tourist behavior. It is known that the influence of mobile applications has greatly served to convenience consumers in terms of travelling, and has greatly shaped their experiences.

2.1. The influence of mobile technologies on tourist experience and behavior

Mobile technology has greatly influenced the consumer behavior when comes to travelling. There are applications for mapping out routs, applications which show restaurants and other entertainment places to go while on the road, and there applications which help consumers to keep track of their locations, and also applications that monitor their workload while traveling. Due to this advancement in technology, which is considered to be fairly recent, convenience has emerged as a prominent advantage of traveling for personal vacations or job related reasons. Consumers of such technology feel free to just get up and go, and let the different type of application take care of their traveling.

2.2. Economic Contribution of travel and tourism

Tourism becomes one of the most essential factors of economy in some countries around the worlds not only that it's also an important and major source of foreign exchange.

For example foreign exchange earnings from tourism ranked the first in Thailand, New Zealand, and Australia, ranked the second in Hong Kong, Malaysia and the Philippines, and ranked the third in Singapore and Indonesia (Amrik Singh 1996). In New Zealand, the tourism industry employs more than 200,000 people, with projections of 14% annual growth till the year 2000(Chan 1995). In Hong Kong, tourism employs 12% of the workforce and contributes about 7% to the economy (Boxall 1996).the tourism sector in Thailand supports over1.5 million jobs, and contributes 5% to the economy (Asian Business 1996).Tourism has gained importance in China on the year 2000,China expects to receive 55 million visitors with foreign exchange earnings of US\$14billion,which will contribute 5% to china economy, making tourism one of the most significant components of the national economy(Beria 1996). In Singapore, the healthy overall balance of payment is attributed to the huge surplus achieved by the tourism sector which contributes about 10% to the economy (International Monetary Fund 1996).

2.1.1. Socio cultural impact of tourism

- Tourism helps in promoting and preserve local and cultural heritage
- Tourism increase the interaction between local resident and tourists

2.1.2. Environmental impact of tourism

- Tourism increase awareness on environmental protection
- Tourism stimulate awareness to protect landscape and wildlife
- Tourism can help promote establishment of National parks and wild life reserves.

2.2. Mobile Technology

Mobile technology is defined as the technology that is mobile and portable, which allow variety of tasks to be performed. A standard mobile device has gone from being no more than a simple two-ways pager to being a cellular phone, a GPS navigation system, a web browser, and instant messenger system and much more.

In 2012, 87% of the world population own mobile device .In today's generation mobile devices is a tool that everybody has, as it enhances the daily communication of the people and allow some necessary transactions and tasks to be done in short time .Mobile technology provides different type of benefits for business(Gebauer & shaw,8).

Hence, the number of people owning a mobile is far much greater than the number of people owning laptop. Moreover, mobile technology benefits many industries including tourism, health, banking and many others.

2.3. Android Operating System

Android is one of the widely used smart phone's platforms. Android is a Linux-based operating system, which designed primary for touch screen mobile devices such as smart phone and tablet computers (GSA Arena team, 2012).

Android, Inc. was found in paloAlto, California in October 2003 by Andy Rubin (co-founder of Danger),Rich Miner(co-founder of Wildfire Communications, Inc.) .On August 17,2005, Google acquired Android Inc, making it a wholly owned subsidiary of Google. By the end of 2010, Android had become the world leading smartphone platform while at the second quarter of 2012, it was announced that Android had a worldwide smartphone share of 68%and 75%.

On September 2012, Hugo Barra VP of android products in Google announced on Google+, that there were 500 million devices activated and 1.3 million activation per day (Barra, 2012).

Moreover, on July 2012, Android's market share in the United States reached the value of 52% (Fingas, 2012) meanwhile it rose to 90%in the china market (Millward, 2012).



Figure 1 Android platform

Table 1 Percentage of Market Share of Top Smartphone Platform (Survey in US)
(Fingas, 2012)

Top Smartphone Platforms 3 Month Avg. Ending Jul 2012 vs. 3 Months Avg. Ending Apr. 2012 Total U.S. Smartphone Subscribers Ages 13+ Source: comScore MobiLens			
	Share(%) of Smartphone Subscribers		
	Apr-12	Jul-12	Point Change
Total Smartphone Subscribers	100.0%	100.0%	N/A
Google	50.8%	52.2%	1.4
Apple	31.4%	33.4%	2.0
RIM	11.6%	9.5%	-2.1
Microsoft	4.0%	3.6%	-0.4
Symbian	1.3%	0.8%	-0.5

Table 1 shows the comparison of percentage of the market share of the top smart phone platforms based on survey in the US in 2012. Android is still leading the chart and has just reached a new high of 52.2% for the US smart phone Share as of July 2012. Furthermore, an internal study by apple reveals eight reasons why people choose android over iPhone (Sid,2012) shown in the figure below.

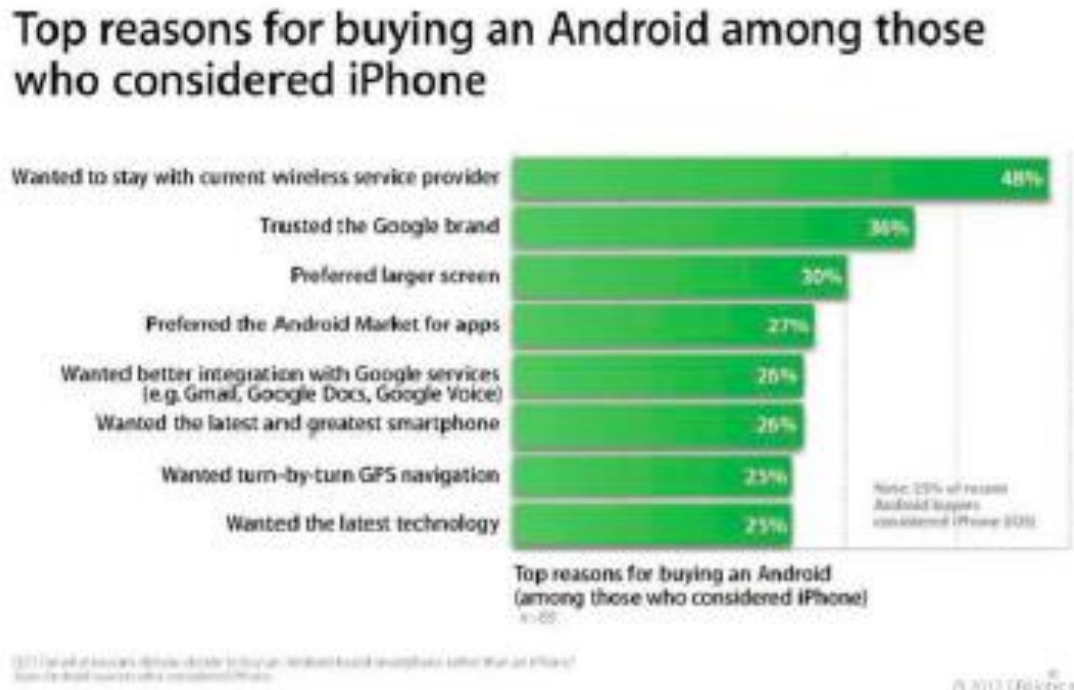


Figure 2 8-Reasons why people choose Android (Khatri, 2013)

2.4. Impact of smart phones application on tourism

According to Smura, Kivi and Toyli (2009)

“In most developed countries, mobile phones have become an inseparable part of everyday life and a majority of people carry them all the time. In addition to complementing and expanding the use of various internet-based services, the evolution of mobile devices also enables entirely new types of services to be introduced”. (p. 53)

Using smart phones become one of the main reasons to drive the market of mobile Application (Apps) to be one of the most rapid growing media outlets among

technology users. As a result the usage of mobile application made tourism planning easy, where the tourism apps is. considered the seventh most popular category of apps being downloaded among users According to Trip Advisor, 60 percent of smart phone users have downloaded travel Apps and of those individuals, 45 present plan to use the apps for travel planning and research, furthermore, 55 percent of travel app are purchased within three days of travel or while travelers are at the destinations (Mickaiel, 2011).

Because the use of mobile application is getting popular it is important that the tourism industry and Mobile technology developer have idea about the mobile apps on market and find out what are the missing criteria and improve it accordingly.

Smart phone applications offer the customer a very convenient way of booking/searching about real time flight information and it can also help them to provide information easily to manage their travel. This is was the reason which made tourism application to be among the best 100 applications in the world .Smart phone applications are an important tools for Business travelers to manage their trip more effectively and efficiently not only for business travelers but also for leisure travelers to find the most affordable price that is offered from airline companies this is important because leisure travelers are very sensitive when it comes to payment. Companies like United Airlines have adapted smart phone applications to give its customer a user friendly technology to enlarge their sales and service, their application allows the user/tourists to book flights, search for airport maps, gather related information and use online mobile boarding passes.

Furthermore Alaska Air has introduced a sophisticated mobile application that allows the user/tourist to modify their seat selections add feedback on their hotels and car rental services, and also enable checking in through mobile. Air lines can benefit from those applications by asking their customer about their experiences so that they enhance their services and improve accordingly, by doing so companies can retain their customers.

2.5. Related works

2.5.1. Trip Advisor

Trip Advisor is tourism application and website that assist user to plan their trips by providing reviews on hotels, flight and local tourist attractions. It is an application that when travelers plan to travel depend on the review of other travellers that already used it to see how satisfactory was the decision they made, currently TripAdvisor entertain more than 8 million travel reviews written by more than 4 million registered members and it has almost 25million visitors per month.

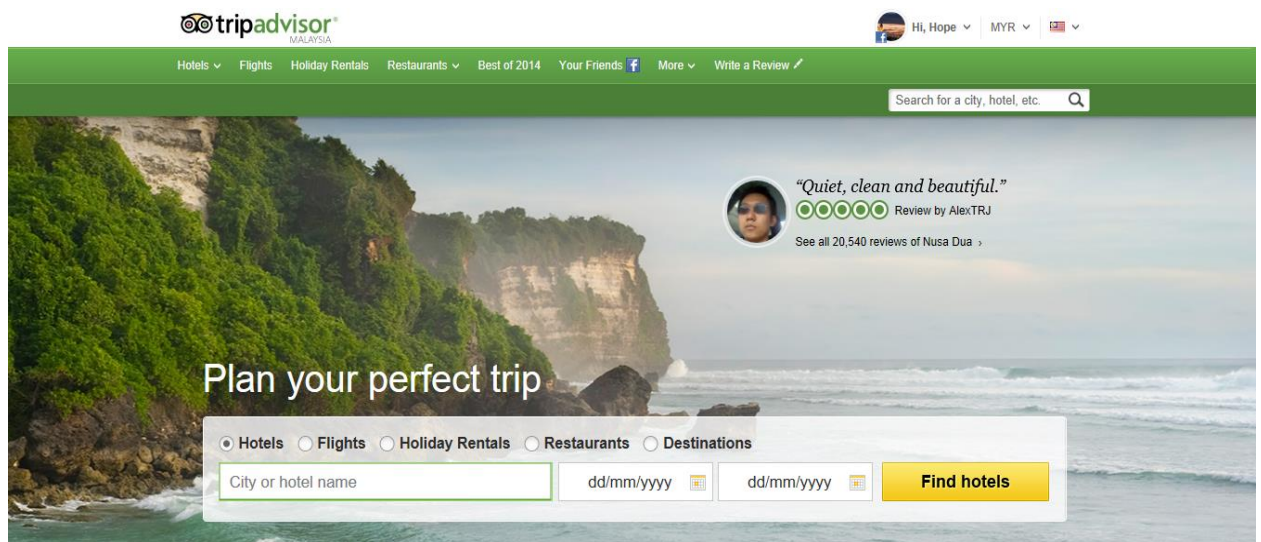


Figure 3 Trip Advisor Interface

2.5.2. Malaysia Trip Planner

Malaysia Trip Planner is a mobile application that allows user/tourist to have a complete travel guide. The Application consist of four main features which are 'Explore', 'My Itinerary', 'what's On' and 'Nearby Attractions'.

- Explore : contain 38 pages that allow the user to click on the chosen destination and then it will display pictures of that place

- Nearby attraction :shows users with the help of map the near place to visit from where they are
- What's On: list the events that are happening during the time of visit
- My itinerary : Allow user to search and book flights

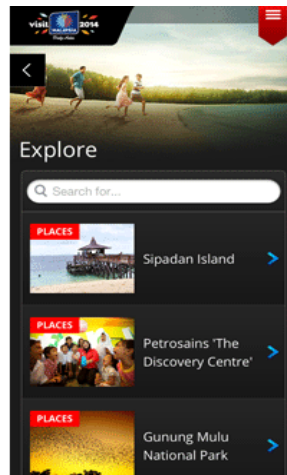


Figure 4 The Explore feature

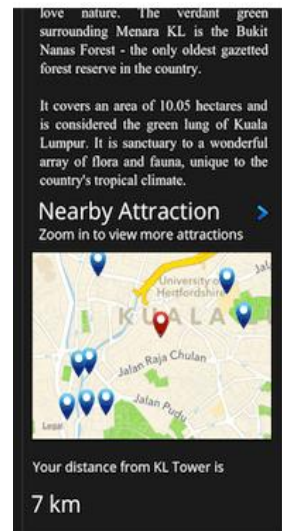


Figure 5 Nearby Attraction Feature

However there are some criticism on the app that says that the application is more like a travel guide with detailed information about places it doesn't help travellers to know about essential information about Malaysia for e.g. it doesn't have feature that include

information on how to move around using public transportations, locations of hospitals, foreign embassies that are very much useful for travellers travelling for the first time.

On the other hand the Explore feature was also criticized because it was not user friendly the list of places which in the Explore feature was randomly arranged without having any category (e.g. According to a state or nature, beach or etc.).

2.6. Existing Tourism Mobile Applications

Table 2 Existing Tourism app similarity and differences

Mobile Application		Similarity	Differences
1	TripAdvisor	<ul style="list-style-type: none"> • Suggest touristic places 	Users need to know where they are going before using this application.
2	Malaysia Trip Planner	<ul style="list-style-type: none"> • Suggest touristic places 	User will be suggested for touristic places only in Malaysia.
3	One Click Trip Advisor	<ul style="list-style-type: none"> • Suggest touristic places 	User will be suggested for touristic places according to their preferences.

CHAPTER3

METHODOLOGY

3.1. Research method

In order to develop one click Tourism Mobile Application, several research methodologies have been carried out to map out the work plan by following the research procedures, strategies and conducting several approaches to the required knowledge.

Quantitative approach has been taken at the beginning stage of the research which is helpful and relevant in assessment of the response percentage regarding people's opinion, experiences and behavior .Survey questions technique of this approach has been applied to analyze the different methods of travelling that most people use and plan before traveling to their desired destinations. Broader elaboration of the result will be discussed further in the following sections of the paper.

3.2. System Development Approach

Rapid Application Development (RAD) is selected for successful designing and completion of this project .this approach is preferred over the others due to its applicability for developing highly interactive system with clearly identified user groups and does not involve computational complexity as in our case.Due to time constraints to finish the project which is almost 6months, the use of Rapid Application Development (RAD) methodology helps to focus on building the Application in a short period of time, by overlooking additional features and concentrating only on main system functionality.

3.3. System development stages

In order to develop this project, four main stages are required which are Requirement, Analysis and design, Implementation and Cutover.

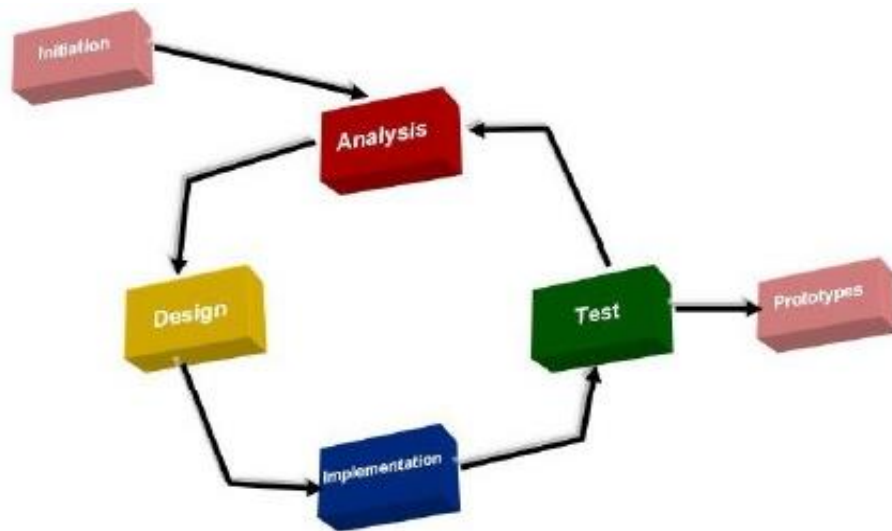


Figure 6 System Development Stages

3.3.1. Requirement Stage

This phase establishes a high-level view of intended project and determines the goal of the project. The aim of this phase is to perform preliminary investigation on the current and effective Android Application system design and the analysis on the method of generating user information. In order to achieve this aim, a requirement gathering method was selected such as:

Survey: people who frequently travel need to answer the questionnaire. This survey is being conducted to gather all information requirements that tourists experience in their traveling processes.

Right after all data are collected, the interface of one click tourism application will be developed. This will include the processes of understanding the characteristic and behavior of the data and what are the method of collection and the process of the data.

For One click tourism advisor, the use case is developed to visualize the interaction of the system with users this will require data input, process and also the output. Additionally a class diagram will be used to illustrate the structure of the application by showing the application's classes, their attribute and methods.

3.3.2. Analysis

Throughout the analysis stage the points that were clearly stated earlier in the requirement stage should be analyzed with the help of user (tourist/travelers). Furthermore, in this stage literature of the researches, published papers and journals that were done previously will be carefully studied according to each related scope which will help the development of this project and also the previous techniques that can be integrated with the project development.

In addition the similar products that are in the market can act as a guide or standard on where to start and how to improve the existing product that will attract tourists in their tourism planning.

However, the possible problems the project might encounter should also be predicted during this stage to develop solution framework that might help solve the problem occurred. Analyzing the difficulties that might occur is the most important aid that helps to accomplish the objective of the project.

Finally based on the data collected through pre-survey questionnaires, the information has then be further analyzed the majority feedbacks in the concepts used in "One click Trip Advisor" and the criteria that should be included for better efficient usage. On the other hand, literature survey has also been carried out on the use of android application for tourism industry to prove the validity of the concept to be used during tourism or traveling.

This information is gathered through the online sources such as tourism websites, and Google Scholar. Some topics about the use of tourism have also been referred to collect better and strong evidences in order to prove the stated concepts .Basically, the data analysis is performed on the required information which has been planned during the initial phase of this project.

3.3.3. Design

This stage considered the longest stage because it includes designing the whole system features throughout the prototype development cycle.

When the analysis phase has completed, a quick design on the system interface of ‘One Click Trip Advisor’ is developed to determine the system flow and have a clearer view and structures on the system model and also the system flow.

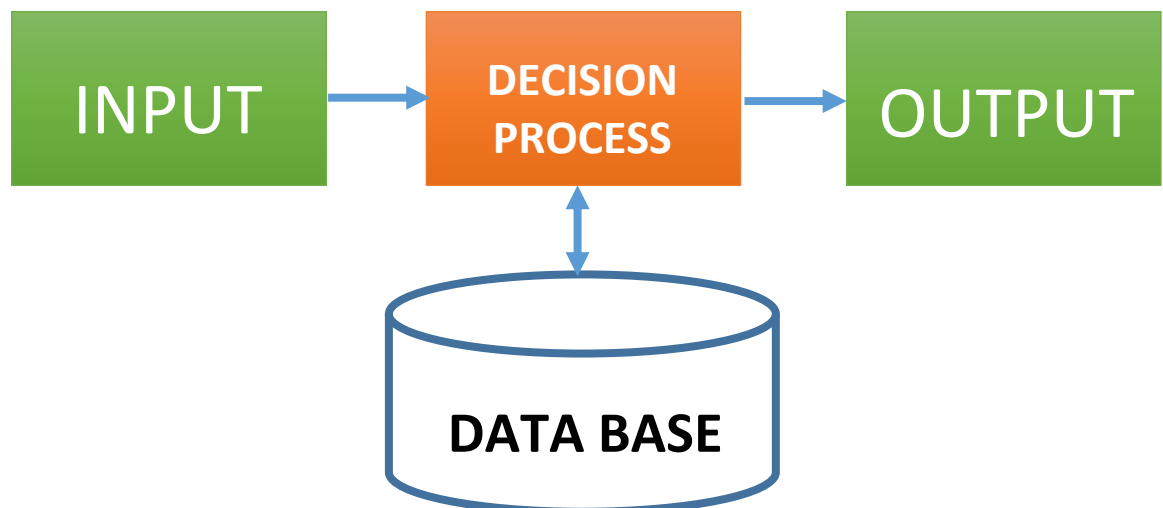


Figure 7 System flow of OCTA

- The database will include information such as budget amount, visit area, package, continent, country, time/season, preferred food, and transportation.
- The user will input their preferences they desire by using the system's interface according to those preferences they will get the output.
- For testing purpose a mock data will be used.
 - The Decision Process
- The code will filter the database on the preferences entered by the user on an ascending order of the column.
 - For e.g. the location will be the first to be filtered and then the visit area will continue till it goes through all the columns in the database.
- At the end of the filtering process the result will come out which is the suggested place and this result will be according to the user's preference.
- For the database you can refer to the (APPENDIX I)
 - Development of prototype

The prototype of OCTA is begun with initial interface and functionalities. In order to develop OCTA app, certain tools were used. To ensure that the features are working, the testing will be performed once each feature is completely built. This is to avoid the overload of debugging work during the overall features integration process.

- System testing

When the feature required has been developed, a complete prototype will be implemented to the users to perform the overall system testing. The purpose of conducting system testing is to examine the functionality and usability of OCTA app from the user's perspective.

The user's feedbacks will be collected to further improve on the existing design of OCTA until the amendment meets the requirement and desired model for the users. Thus the design phase is repetitive process whereby the constructed features will be

examined by the users and any majority unfavorable features recommended will be considered to redesign on existing works.

3.3.4. Implementation stage

During implementation stage we have to make sure that all the prototype functionality are working successfully according our plan.

3.3.5. Cutover /testing

Usability tests should be carried out to test if the system meets the requirement established earlier .frequent testing until reaching a satisfactory outcome, which is essential in order to ensure that end users can use the product easily with no problem or error.

Lastly, the feedback from users will be analyzed and taken into consideration and mention it in the research report for further enhancement and development.

3.4. Tools

3.4.1. Software

- Eclipse
- Android Developer Tool (ADT)
- SQLite
- Adobe Photoshop CS6 (for graphics)

3.4.2. Hardware

Pc will be used during the development of the project, once the development completed it will be tested using the Android Smartphone or tablet as the project will be developed using Android platform

- Android OS Smart phone or Tablet



Figure 8 Android Smartphone and Tablet

3.5. Use Case Diagram

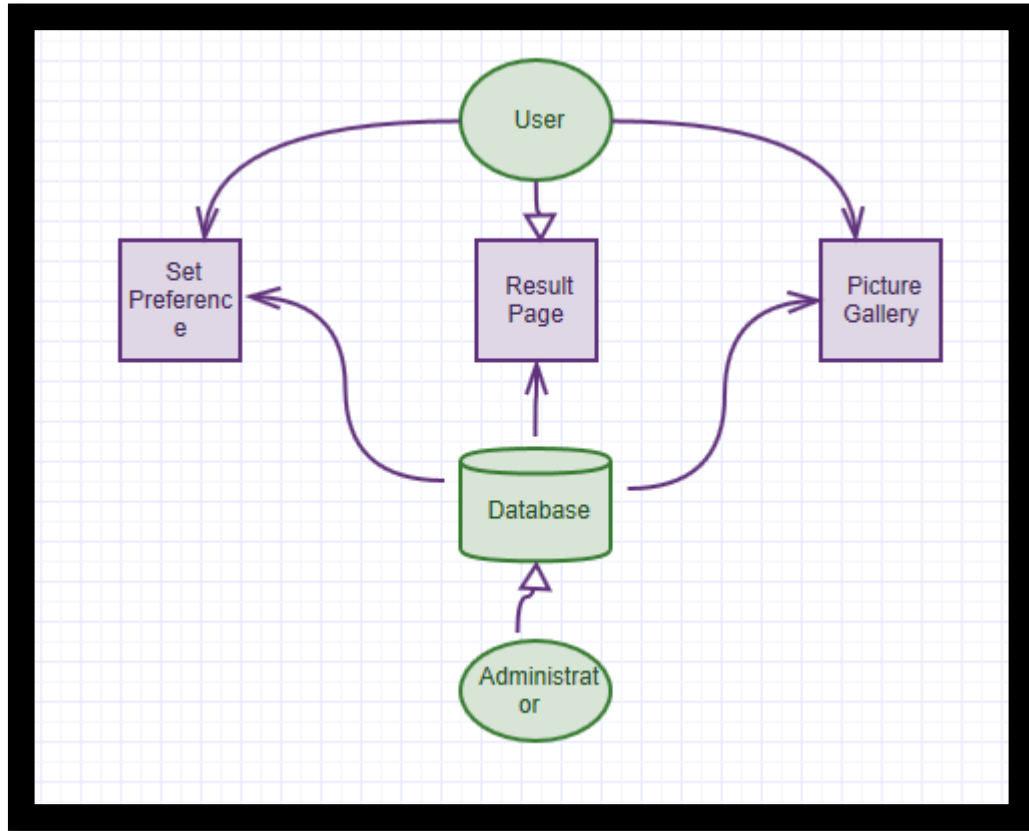


Figure 9 Use Case Diagram

The user will have access to all three functions e.g. Set Preferences, Result Page, and Picture Gallery from its front-end only. It means that the user can only interact with the application from the user interface only. The user does not have direct access to the database. All access to database must be done indirectly through these three functions.

The administrator, on the other hand, will have access to all three functions e.g. Set Preferences, Result Page, and Picture Gallery from its front-end AND from its back-end. It means that the administrator can interact with the application via the user interface, and/or via direct access to the database. Since the database will push data into the functions, editing the database effectively edits the functions as well.

3.6. Class Diagram

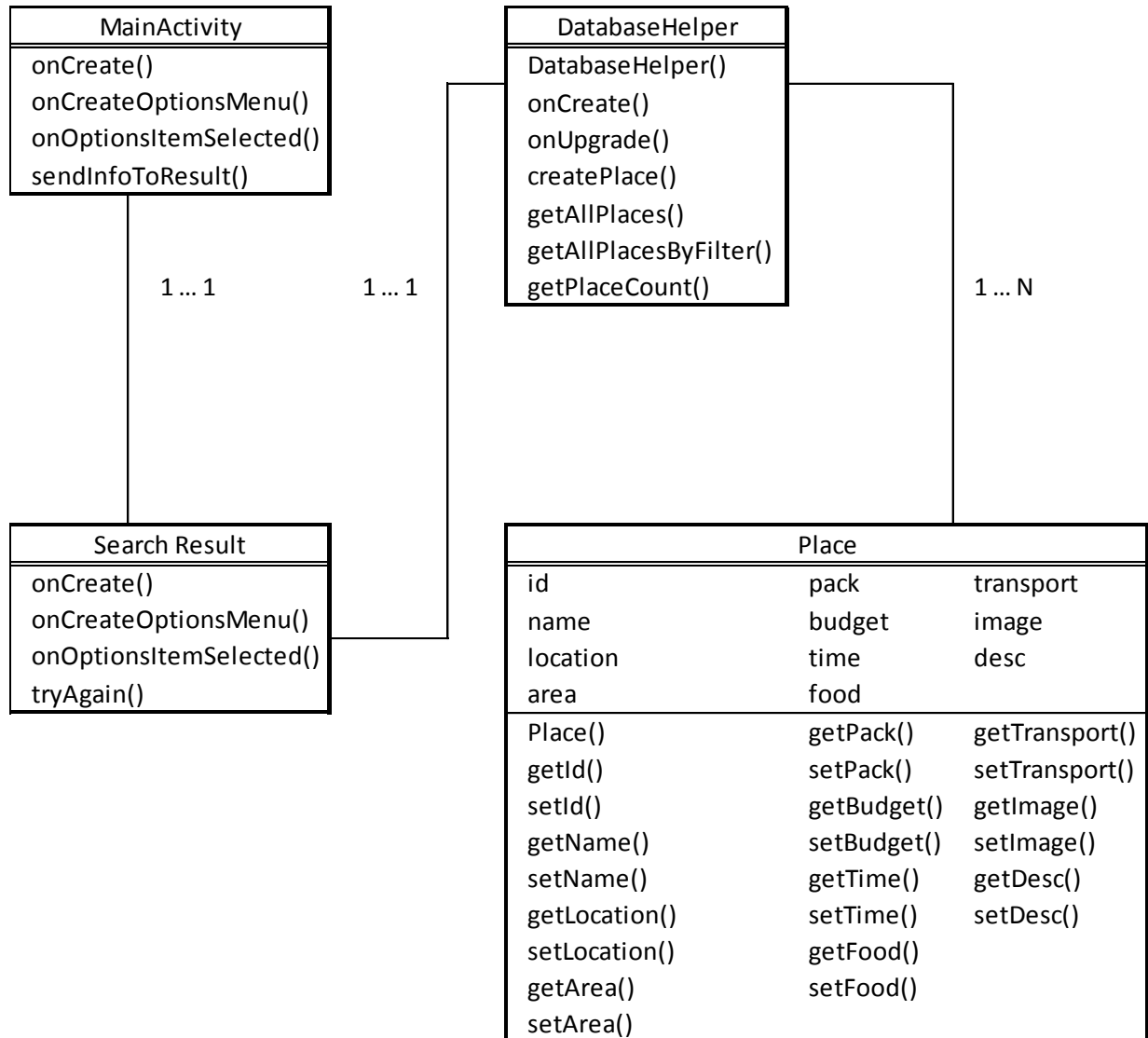


Figure 10 Class diagram

3.7. Flow Chart

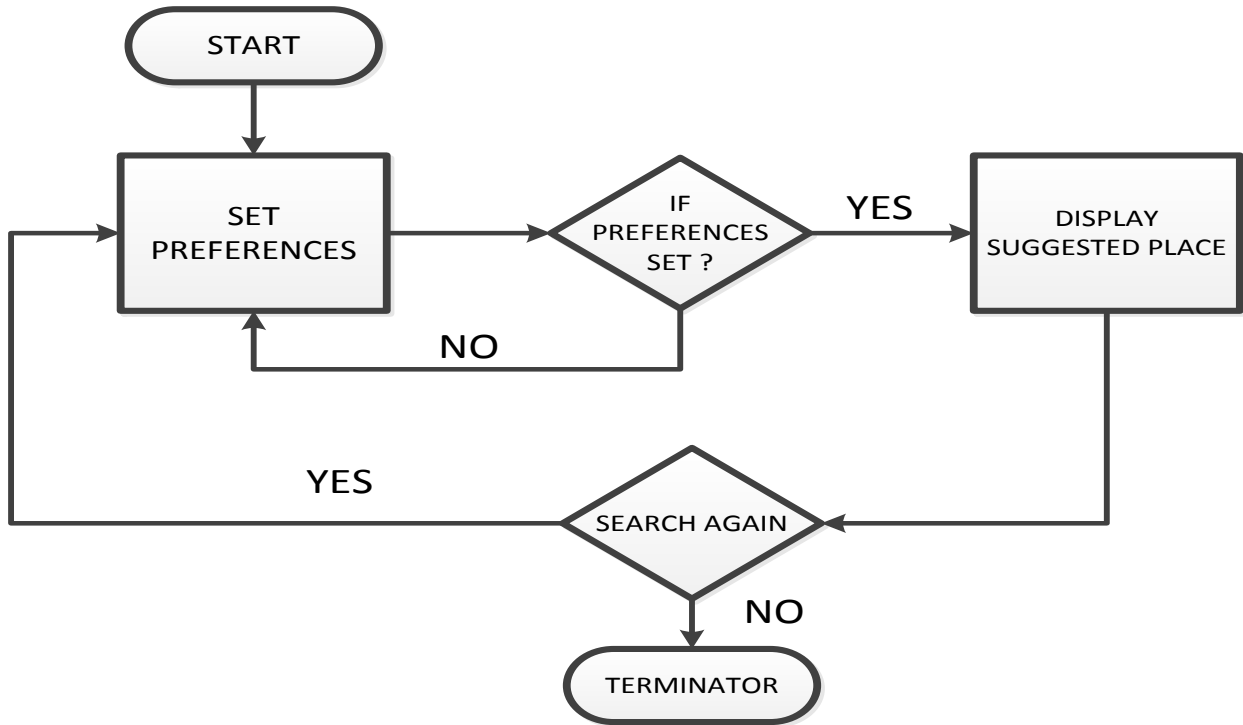


Figure 11 Flow Chart

3.8. Gantt chart

Table 3 Gant Chart

Activities	May	June	Jul	Aug	Sep	Oct	Nov	Dec
1 Literature Review								
2 Data collection								
3 Development of DB								
4 Start Coding								
5 Software Implementation								
6 Testing								
7 Project Thesis writhing								

3.9 Project Activities and key mile stone

Table 3 The project activities and the milestone of FYPI

Project Activities	Key Milestone
<ul style="list-style-type: none"> – Selection of project Topic – Identify and clarify research element and system objectives. – Read research works, journals papers, articles etc. – Requirement gathering and analysis identify research methodology to be used. 	<ul style="list-style-type: none"> – Submission of interim report. – Proposal defense.

Table 5 the project activities and the milestone of FYPII

Project activities	Milestone
<ul style="list-style-type: none"> – Design prototyping and evaluation – Implementation and delivery – Testing – User evaluation – Writing of dissertation 	<ul style="list-style-type: none"> – Pre-SEDEX (November 26 2014) – Online Dissertation and technical paper submission (draft) (December 8 2014) – VIVA (December 22 2014) – Final dissertation (hard bound) (January 6 2014)

CHAPTER 4

RESULT AND DICUSSION

Findings from conducted study confirmed the initial hypothesis on the scale of current problem. Respondents fill the survey according to their experiences and after reading those responses this research can now explain more effectively about the problems people are facing for their travelling plans. Each question was highlighting a different problem and situation which usually experienced commonly while preparing for travelling. The questionnaires comprises of both open ended and close ended questions which help the respondents to answer accordingly. Following are the questions and respective results gained from the study.

4.1. Results from survey

Question 1: How often do you travel?

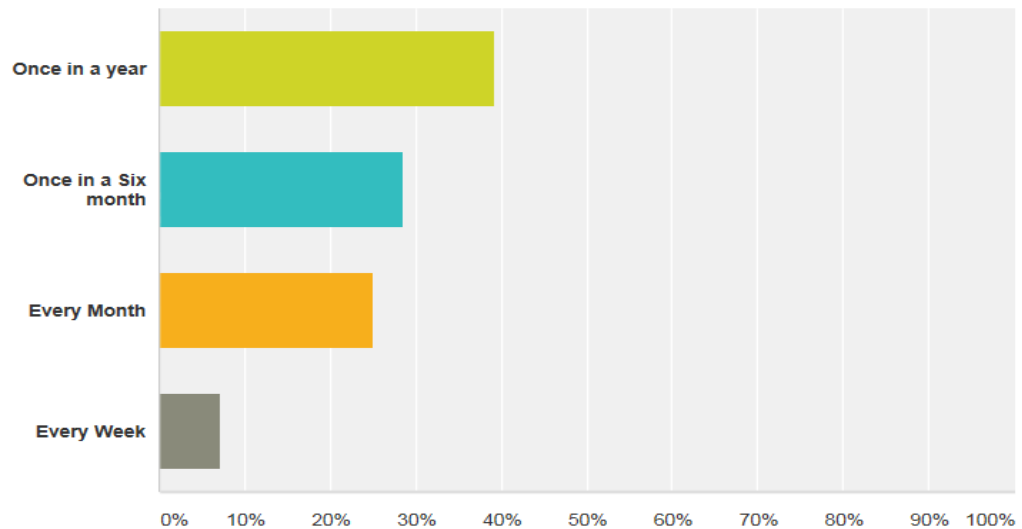


Figure 12 Percentage of Traveling Frequency

As it is shown in the figure 6.7% of the respondent travel every week, and 23.33% of them travels every month, and 33.33% of the respondent travel once in a six month while 36.67% travel every year. This shows that even though the frequency of the travelling time is different but still people do travel to different places, the more people travel help to increase the probability of people use tourism application that can help them to plan their trips.

Question 2: What is the most common type of your travel?

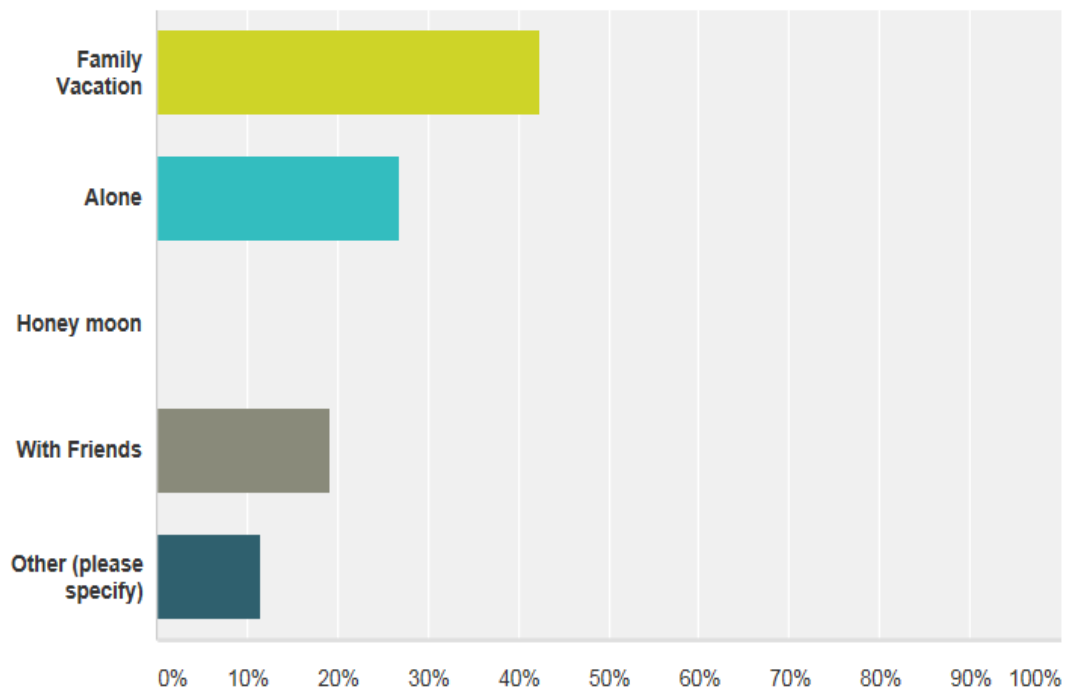


Figure 13 Type of Traveling

In this figure it is shown that 37.93% of the respondent travel as a family vacation, and 31.03% of them prefer to travel alone, and 20.69% of them would like to travel with friends while 10.34% of them have different other type of traveling. This is important because it help in identifying how people would like to enjoy their vacations and with whom.

Question 3: How do you plan your Trip?

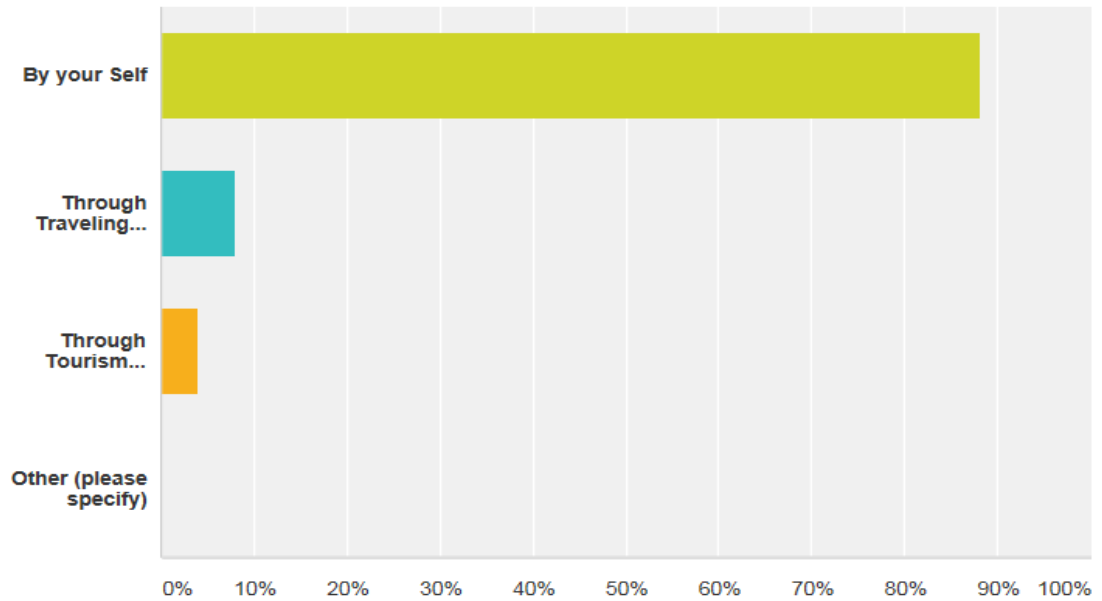


Figure 14 Trip Planning Ways

In this figure it is shown that 89.29% of the respondent plans their travel by their self, and 7.14% of them plan their trip through traveling agent, while 3.57% of them plan their trips through tourism website or App. The aim of this question was to find out if people uses mobile applications to plan their trips, but as it is shown in the result it seems that the existing traveling Applications or website are not attractive enough for people to use them.

Question 4: Does searching to travel to the most convenient place take your time?

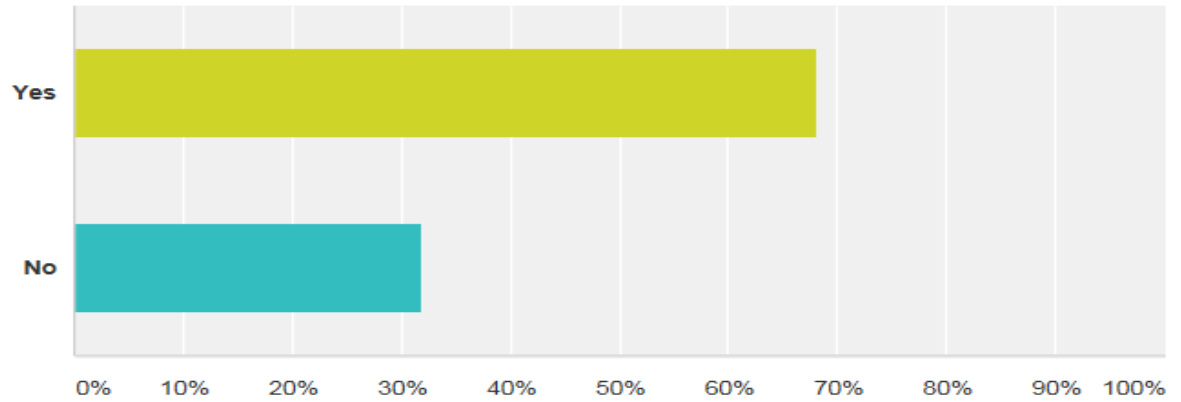


Figure 15 Searching the Convenient Place take time?

As it is shown in Figure 14 above 67.86% of the respondent spend a lot of time in searching for convenient places to visit while 32.14% of them take less time to search for convenient places to visit. This shows that many people find it difficult to choose a convenient place to visit in a short time.

Question 5: Do you think changing destination after traveling is time consuming? (e.g. If you traveled to a place and you found that place is not suitable for you)

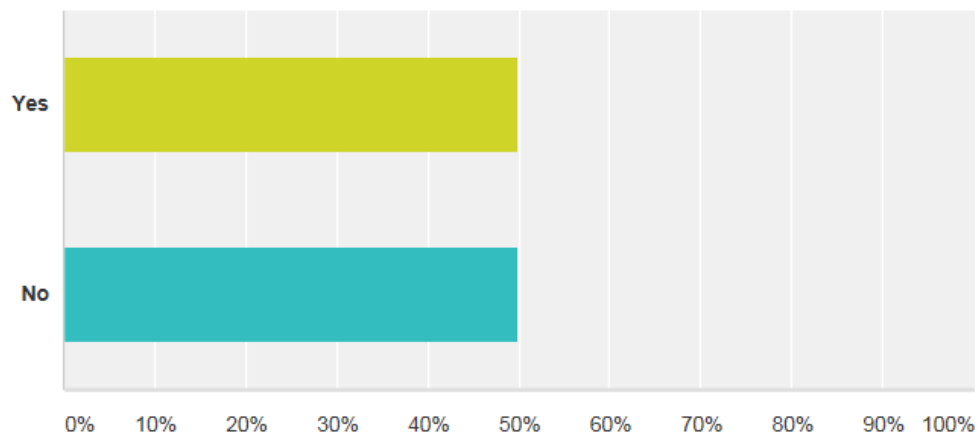


Figure 16Is changing destination time consuming or not?

Figure 15 shows that 50% of the respondents find changing destination after traveling to a place that is not convenient is not time consuming, however 50% of them finds it time consuming.

Question 6: Do you think that changing destination will cost you more? (e.g. If you traveled to a place and you found that place is not suitable for you)

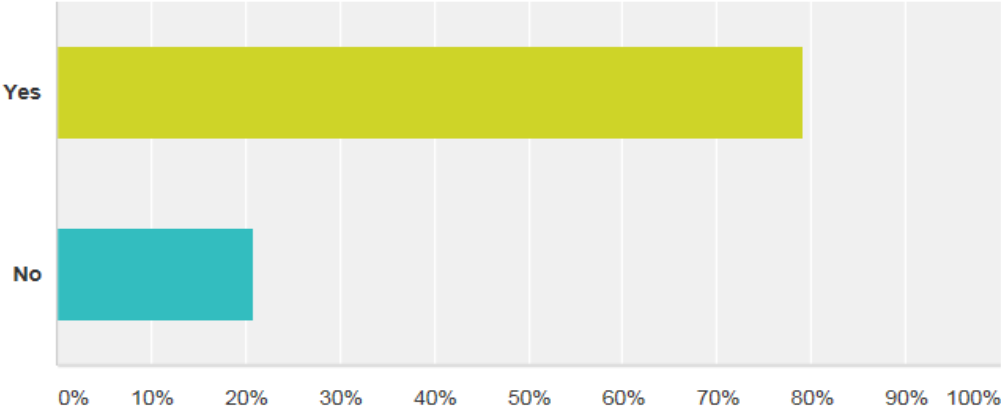


Figure 17 Is changing destination costly or not?

In this figure it is shown that 74% of the respondents find changing destination after traveling to a place that is not convenient is costly, while 25.93% of them do not find it costly.

Question 7: Have you ever used an online traveling Advisor website or Apps?

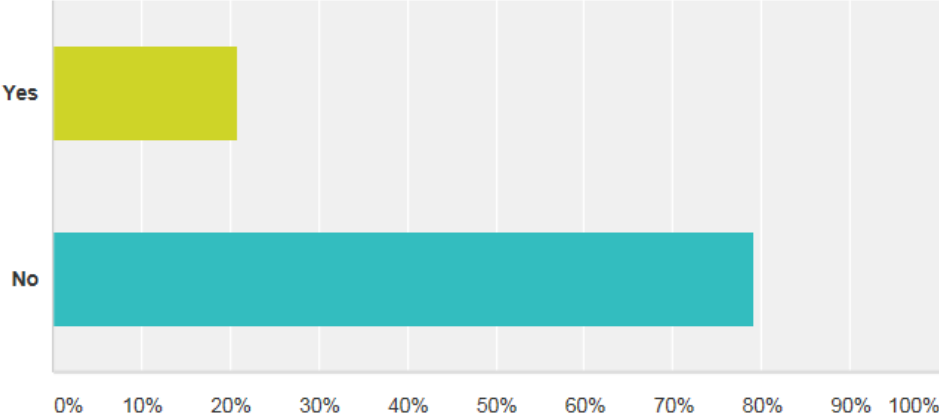


Figure 18 Usage of traveling Apps or website

As it is stated earlier most of the existing Mobile Applications and websites are not attractive enough to be used by people. Figure 16 can be evidence to this issue, where it shows that 25.93% of the respondent only uses mobile App or website to plan their trips, while 74% of them do not use any mobile Apps or websites to plan their trips.

Question 8: How often do you use a traveling Adviser website or Apps to plan your Trip?

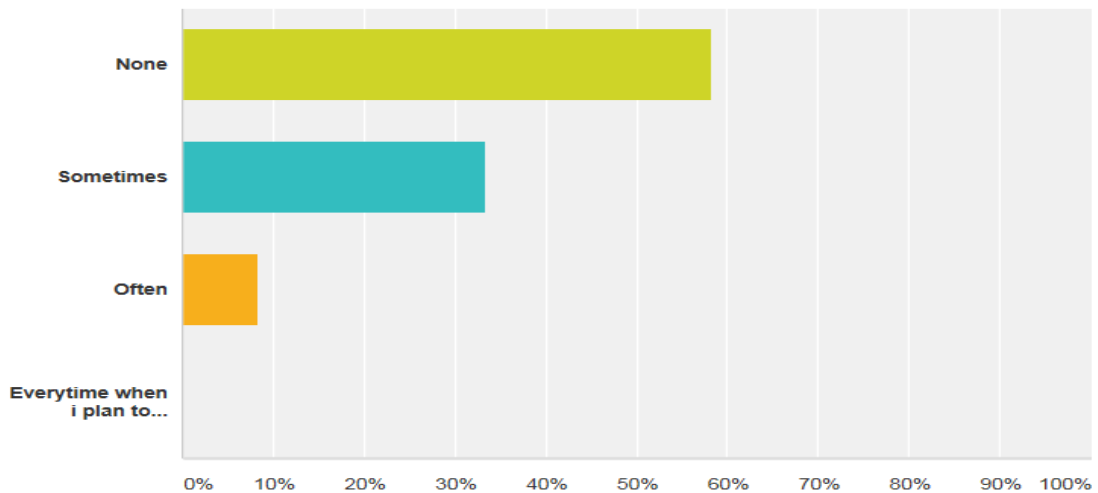


Figure 19 Percentage of Apps and website usage to plan Trips

This figure shows that 53.85% of the respondent never used a traveling advisor or website to plan their trips, and 34.62% of them use traveling Advisor App or website sometimes, and 7.69% of the respondent often uses Traveling Apps or websites, and 3.85% of them uses travelling advisor App or website every time they plan their trips.

Question 9: Do you have any favorite travel website or App?

Because this was an open ended question the response was as the following:

- Almost 85% of the total respondent answered “NO” they don’t have any favorite travel website or App.
- And 5% of the total respondent mentioned that “EXPEDIA” is there favorite website

- And the rest of the respondent mentioned their country airlines like Yemen Airways, Emirate Airways and Malaysia Airways

Question 10: Would you like to use an Application that can suggest you the most convenient place or country according to you preference?

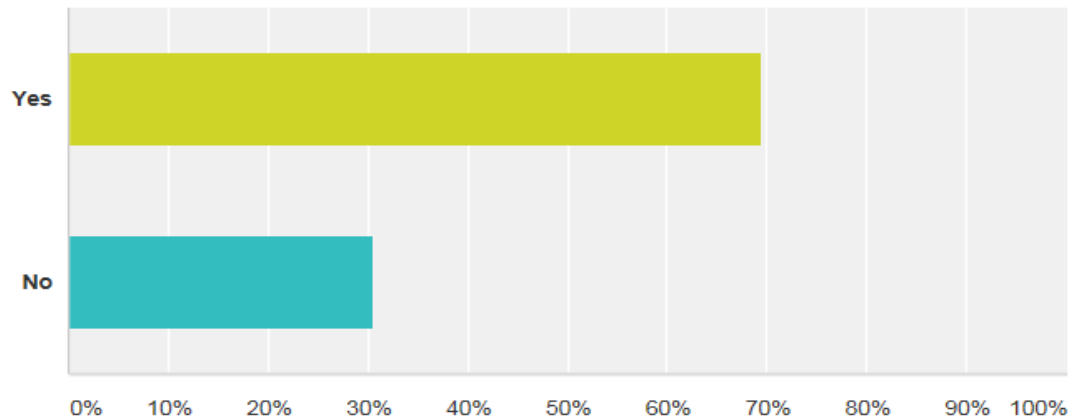


Figure 20 Using an Application according Preference

This figure shows that 68% of the respondent would like to use a Mobile App that can suggest them the most convenient places according to their preference, while 32% of them would not like. This can conclude that even though most of the respondent do not use Mobile Application or website to plan their trips and the reason for that might be the existing Applications or website are not that much appealing to them.

However, according to the number of response that is received from this question, people would like to use an Application that can suggest the convenient places according to their preference, where they can save time and money.

4.2. Application Screenshots

Figure 21 and 22 shows the front page of OCTA's App where all preferences menu are listed .user will have to choose their preferences from the pages shown in Fig21, 22. After the user enters their preferences they have to make a single click on Advise me button and directly will be given the result which means the suggested place.

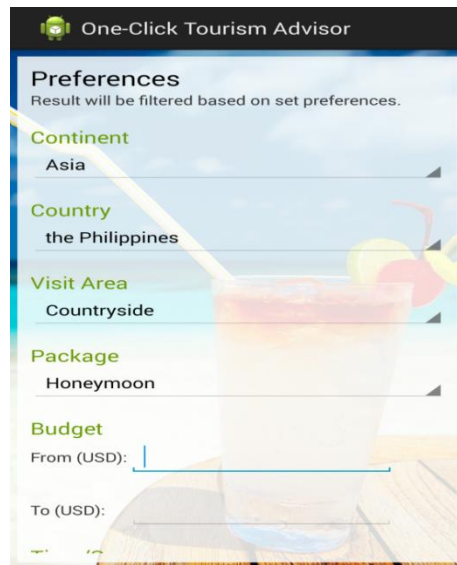


Figure 21 the interface of OCTA 1



Figure 22 the interface of OCTA 2

Figure 23 shows the continent menu .The user have to select one of those continents according to their desire, Figure 24 shows the countries menu, User have to select one country name they wish to visit, the country name will depend on the continent name chosen by the user.

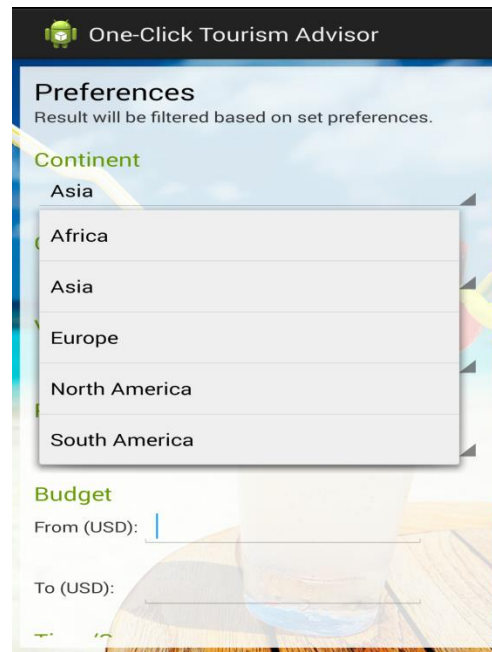


Figure 23 The continents menu

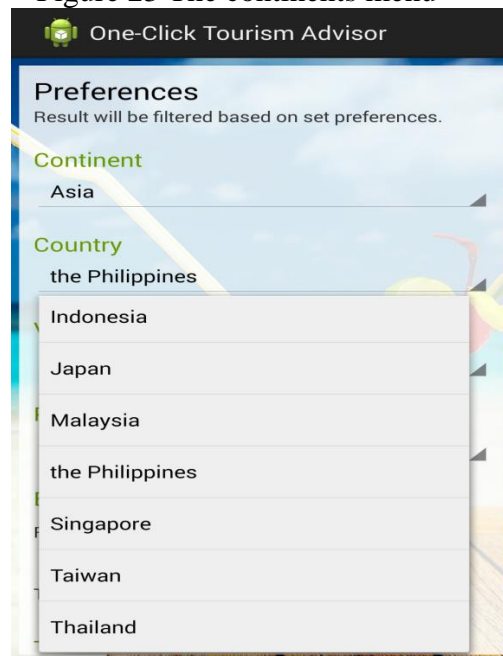


Figure 24The Countries Menu

Figure 25 shows the menu of the visit area. The user will need to select the area they prefer to stay when visiting a country. Figure 26 shows the package menu. This menu allow user to choose one package type that they prefer.

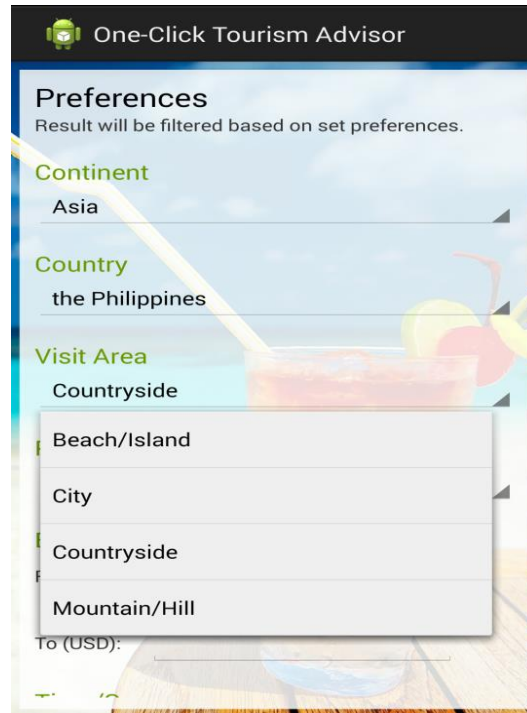


Figure 25 The visit Area Menu

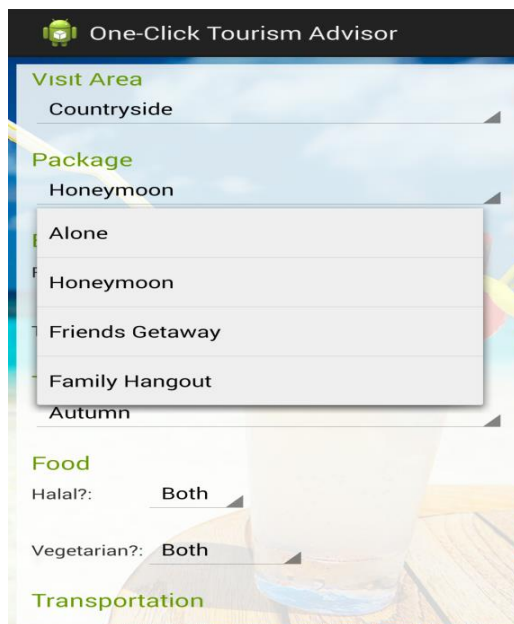


Figure 26 The package Menu

Figure 27 shows where the user has to enter the amount of budget they would like to spend during their tour.

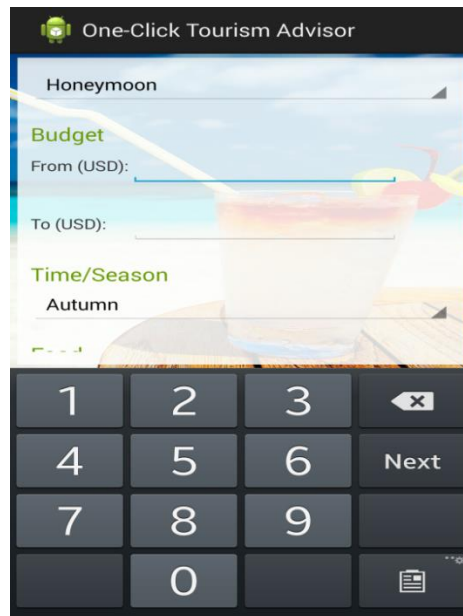


Figure 27 Budget entry

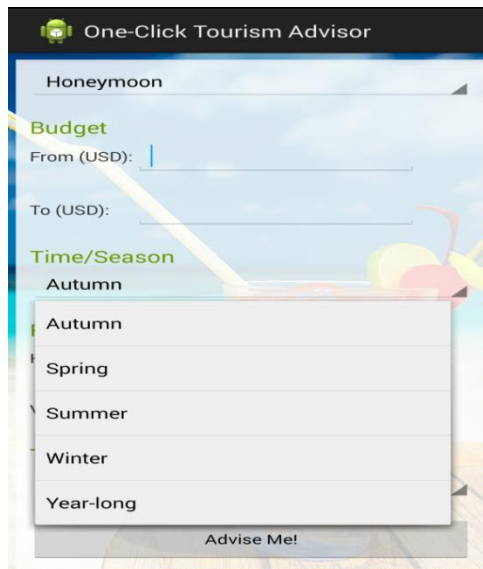


Figure 28 The Seasons Menu

Figure 28 shows season's menu. The season should be selected According to the continent and country users selected earlier.

Figure 29 shows the food type menu. Users for sure will need to eat food that is acceptable in their religion; here they can select the food type they prefer.

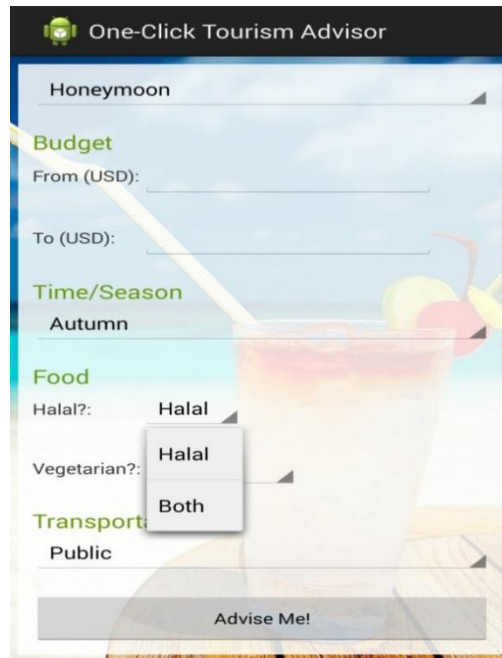


Figure 29 The Food type Menu

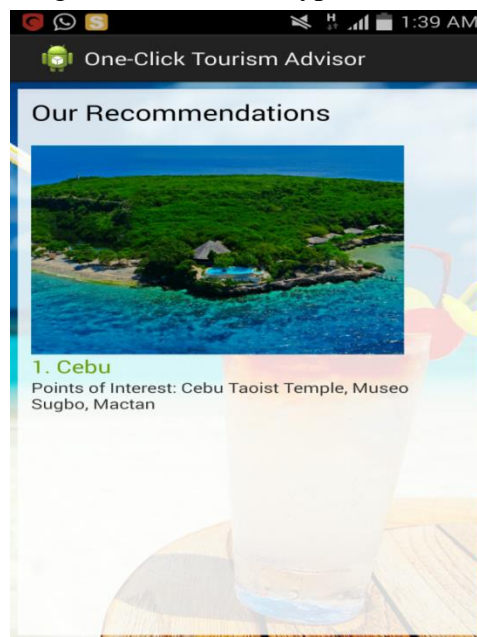


Figure 30 Result Page

Figure 30 shows the result page .The result page will display the place that is suggested to the user according to the preferences they input not only that it will also show places that can be visited in the same place.

4.3 User Acceptance Testing (UAT)

The aim of conducting user acceptance testing is to allow the targeted users to evaluate and examine the prototype of “One click tourism Advisor” Application based on self-perception. This user Acceptance testing will be targeting 30 users both male and female who are all smartphone users and familiar with using mobile applications and have a lot of experiences with traveling. The users’ evaluation will be based on 3 categories. The categories include Social factors, technological factors and customer satisfaction

4.3.1 Social Factors

In this section, the respondents are required to examine the statements based on the criteria’s on OCTA (one click Tourism App) user friendliness, OCTA’ s usefulness, OCTA’s usability, and the OCTA’s ease of time.

OCTA(one click Tourism Application) User-friendliness

Answered: 30 Skipped: 0

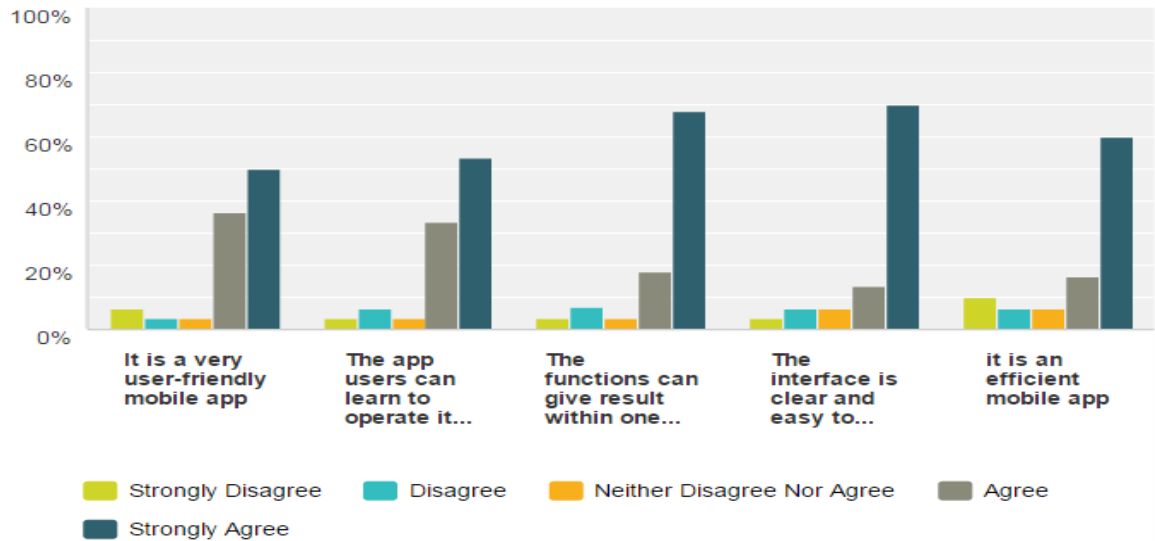


Figure 31 the UAT on OCTA's user-friendliness

Table 4 The UAT on OCTA's user -friendliness data

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Total
It is a very user-friendly mobile app	6.7% 2	3.3% 1	3.3% 1	36.7% 11	50.0% 15	30
The app users can learn to operate it fast	3.3% 1	6.7% 2	3.3% 1	33.3% 10	53.3% 16	30
The functions can give result within one click	3.6% 1	7.1% 2	3.6% 1	17.9% 5	67.9% 19	28
The interface is clear and easy to understand	3.3% 1	6.7% 2	6.7% 2	13.3% 4	70.0% 21	30
it is an efficient mobile app	10.0% 3	6.7% 2	6.7% 2	16.7% 5	60.0% 18	30

In the criterion on OCTA user friendliness, the result shows the respondents had given high rating and it proves that the user felt that OCTA is a user- friendly and efficient app and easy to operate it and thus, the user can operate it in a short time.

OCTA's Usefulness

Answered: 30 Skipped: 0

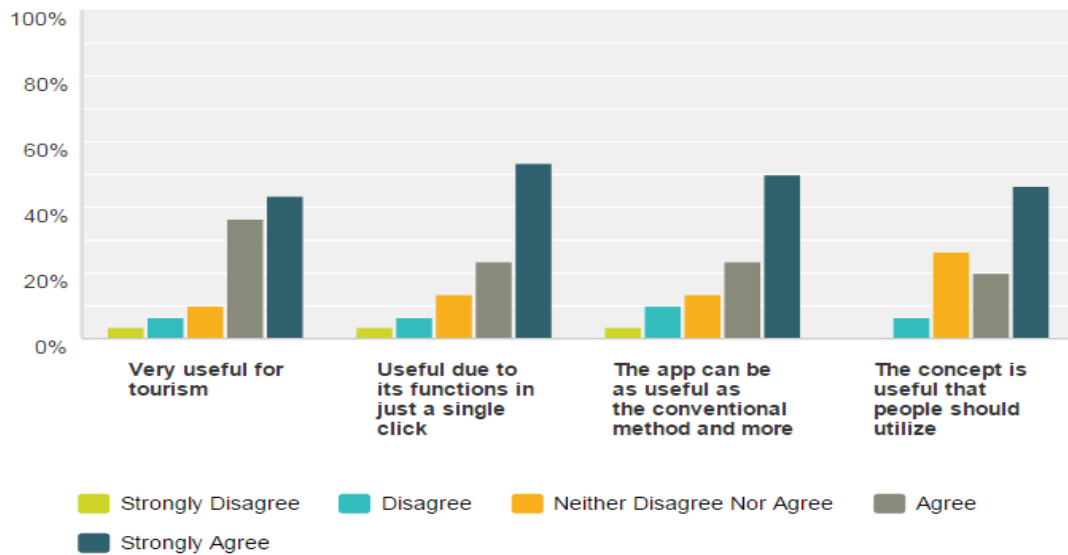


Figure 32 the UAT on OCTA's usefulness

Table 5 The UAT on OCTA's usefulness data

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Total
Very useful for tourism	3.3% 1	6.7% 2	10.0% 3	36.7% 11	43.3% 13	30
Useful due to its functions in just a single click	3.3% 1	6.7% 2	13.3% 4	23.3% 7	53.3% 16	30
The app can be as useful as the conventional method and more	3.3% 1	10.0% 3	13.3% 4	23.3% 7	50.0% 15	30
The concept is useful that people should utilize	0.0% 0	6.7% 2	26.7% 8	20.0% 6	46.7% 14	30

Base on the result collected for the usefulness of OCTA shows that most of the 30 respondents find it very useful due to its functions and suitable to be used by everyone during traveling.

OCTA's Usability

Answered: 30 Skipped: 0

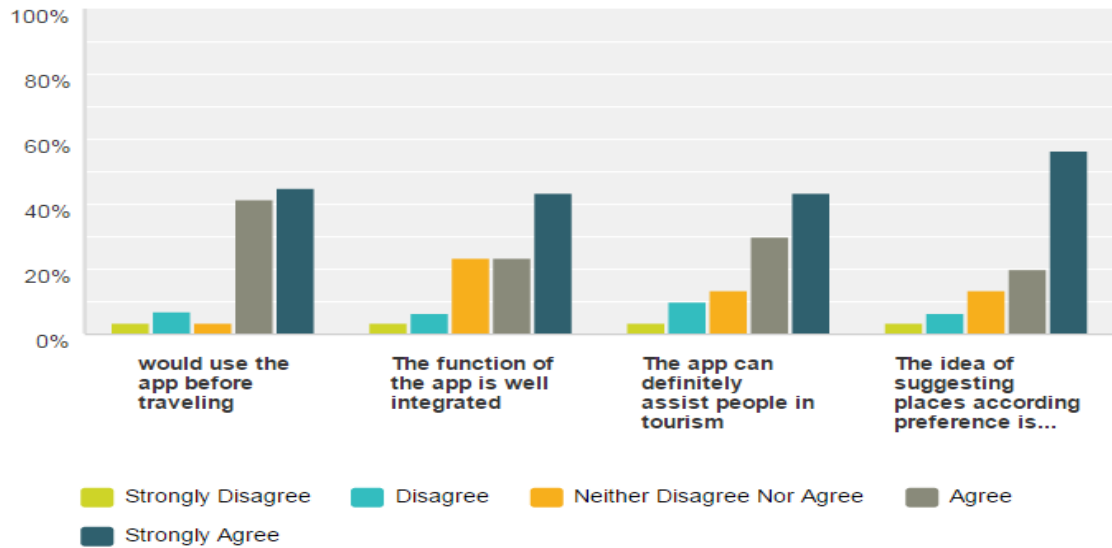


Figure 33 The UAT on OCTA's usability

Table 6 The UAT on OCTA's usability data

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Total
would use the app before traveling	3.4% 1	6.9% 2	3.4% 1	41.4% 12	44.8% 13	29
The function of the app is well integrated	3.3% 1	6.7% 2	23.3% 7	23.3% 7	43.3% 13	30
The app can definitely assist people in tourism	3.3% 1	10.0% 3	13.3% 4	30.0% 9	43.3% 13	30
The idea of suggesting places according preference is good	3.3% 1	6.7% 2	13.3% 4	20.0% 6	56.7% 17	30

As for the response of OCTA's usability 44, 8% strongly agreed that they will use the app before traveling. The 30 respondents also find the function of the app is well integrated and are usable for the respective purpose, suggesting places according the user preference.

43.3% of the respondent's strongly agreed that the app will definitely assist people in tourism. Also 43.3% of the respondents strongly agreed that the idea of suggesting places according preference is good and useful for tourism.

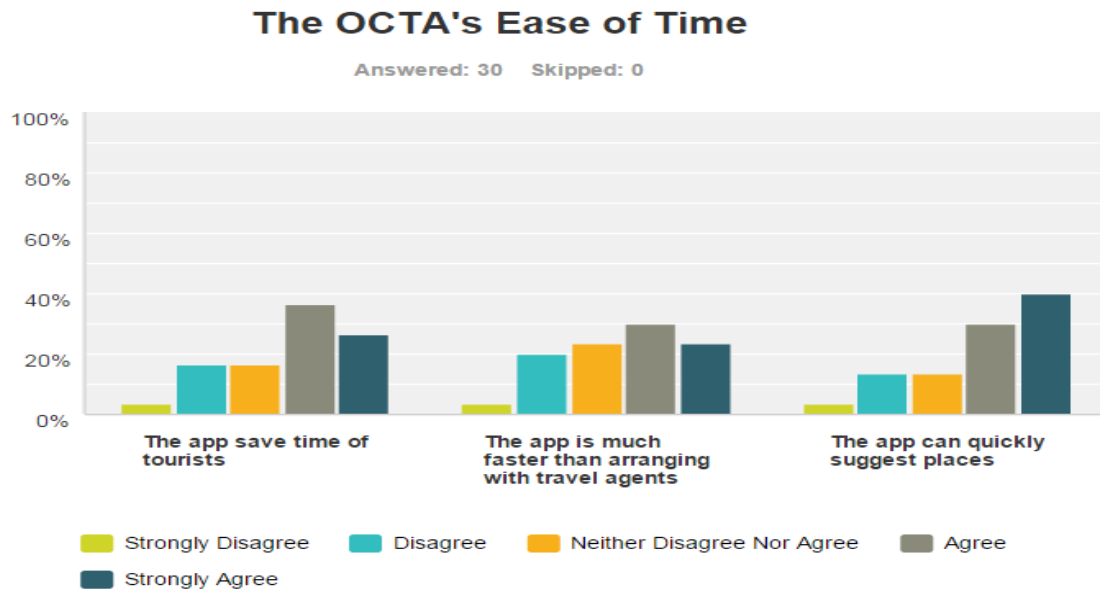


Figure 34 The UAT on The OCTA's Ease of Time

Table 7 The UAT on OCTA's Ease of Time data

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Total
The app save time of tourists	3.3% 1	16.7% 5	16.7% 5	36.7% 11	26.7% 8	30
The app is much faster than arranging with travel agents	3.3% 1	20.0% 6	23.3% 7	30.0% 9	23.3% 7	30
The app can quickly suggest places	3.3% 1	13.3% 4	13.3% 4	30.0% 9	40.0% 12	30

For the testing on OCTA's ease of time, the result shows that most of the respondents believe that by using the app, it could definitely save time of busy people that plan to

travel without contacting traveling agent. Besides, the respondents also gave high rating on that the app can quickly suggest places, where this function plays the important role.

4.3.2 Technological factors

For the technological factor, the respondents are required to examine the quality of the app based on the criteria of availability of information, the attitude of the application and the behavioral intention of the users.

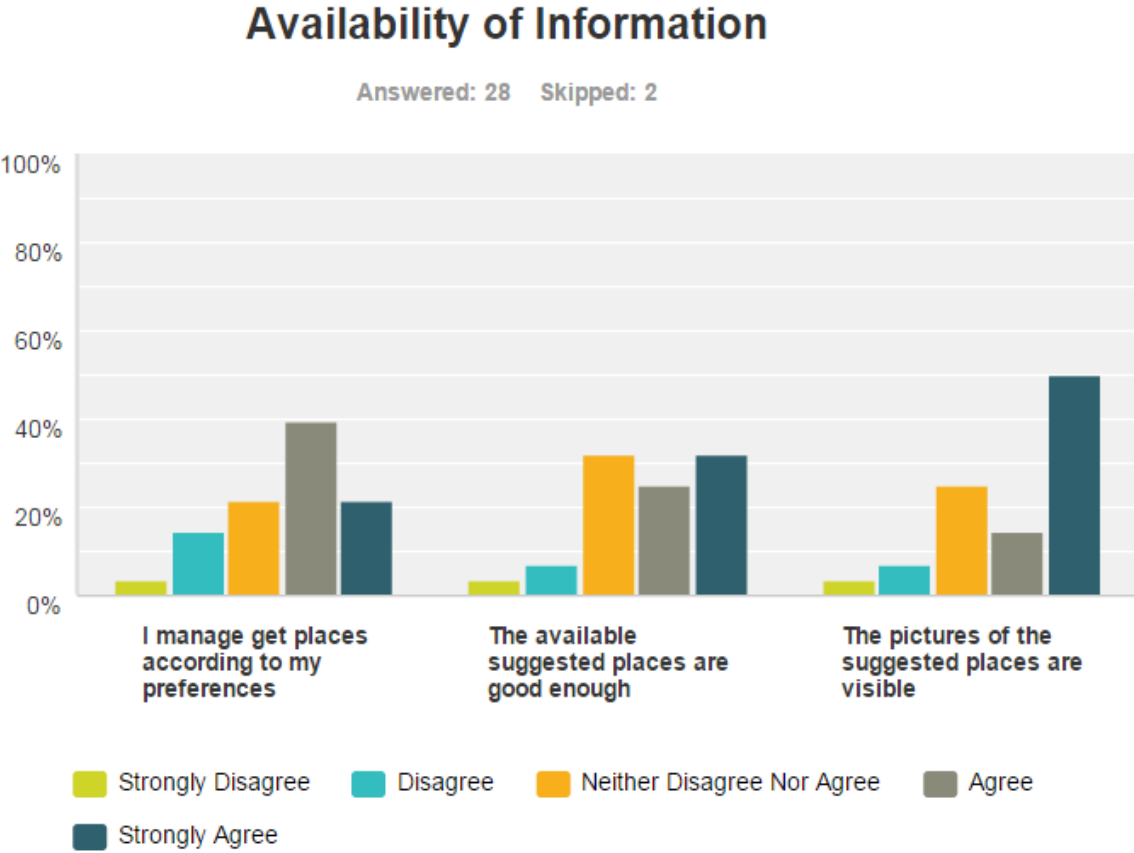


Figure 35The UAT on Availability of information

Table 8 The UAT on Availability of information data

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Total
I manage get places according to my preferences	3.6% 1	14.3% 4	21.4% 6	39.3% 11	21.4% 6	28
The available suggested places are good enough	3.6% 1	7.1% 2	32.1% 9	25.0% 7	32.1% 9	28
The pictures of the suggested places are visible	3.6% 1	7.1% 2	25.0% 7	14.3% 4	50.0% 14	28

According to the 30 respondents most of them manage to view the pictures of the suggested places according their preferences they entered and said that the pictures are visible enough. Besides, the available suggested places are good enough and can be easily accessed by OCTA app.

Attitude

Answered: 29 Skipped: 1

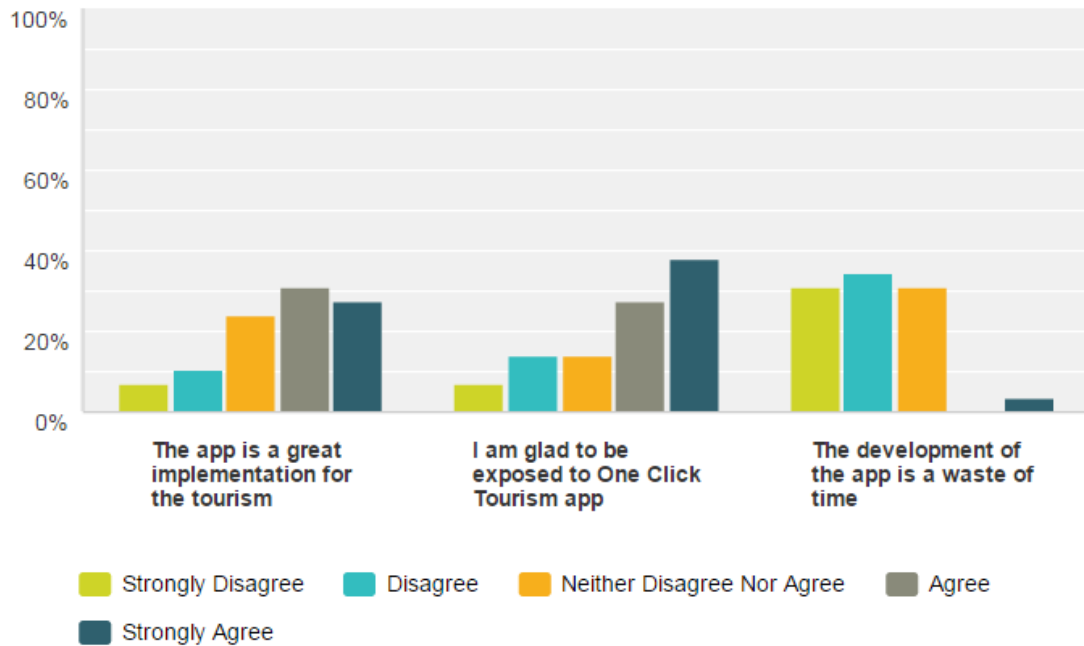


Figure 36 The UAT on Attitude

Table 9 The UAT on Attitude data

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Total
The app is a great implementation for the tourism	6.9% 2	10.3% 3	24.1% 7	31.0% 9	27.6% 8	29
I am glad to be exposed to One Click Tourism app	6.9% 2	13.8% 4	13.8% 4	27.6% 8	37.9% 11	29
The development of the app is a waste of time	31.0% 9	34.5% 10	31.0% 9	0.0% 0	3.4% 1	29

All the respondents find OCTA app is a positive platform to help travelers and 31% of them agree that the app is a great implementation for tourism and the rest of them remain neutral to the statement. Besides, 37.9% of them are glad to be exposed to OCTA app and some of the remain neutral as well. On the other hand, most of the

respondents believe that the development of OCTA app is definitely not a waste of time. Thus the result proves that OCTA app is an acceptable app for users.

Behavioral Intention

Answered: 29 Skipped: 1

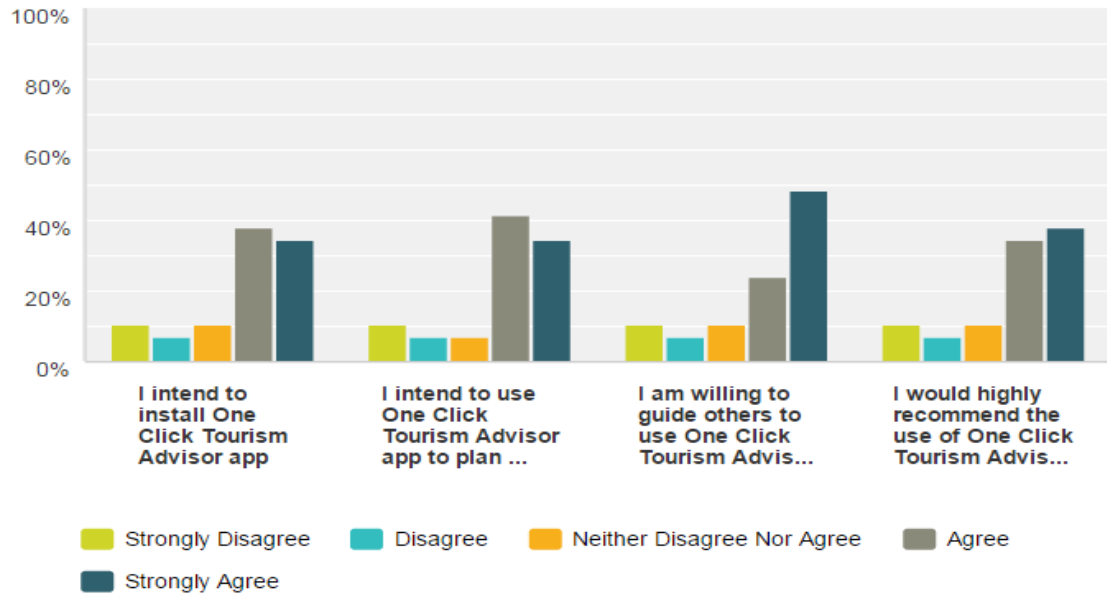


Figure 37 The UAT on Behavioral intention

Table 10 The UAT on Behavioral intention data

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Total
I intend to install One Click Tourism Advisor app	10.3% 3	6.9% 2	10.3% 3	37.9% 11	34.5% 10	29
I intend to use One Click Tourism Advisor app to plan my travel	10.3% 3	6.9% 2	6.9% 2	41.4% 12	34.5% 10	29
I am willing to guide others to use One Click Tourism Advisor app	10.3% 3	6.9% 2	10.3% 3	24.1% 7	48.3% 14	29
I would highly recommend the use of One Click Tourism Advisor app to other people	10.3% 3	6.9% 2	10.3% 3	34.5% 10	37.9% 11	29

Base on the result above, most of the respondents agree to install OCTA app in their phone and would recommend and guide people in using it.41.4% of them claim that they would utilize OCTA app in planning their travel.

4.3.3 Customer Satisfaction

In this section, the respondent will perform testing on the mobile application quality which reflects the satisfactory level of the users towards OCTA app.

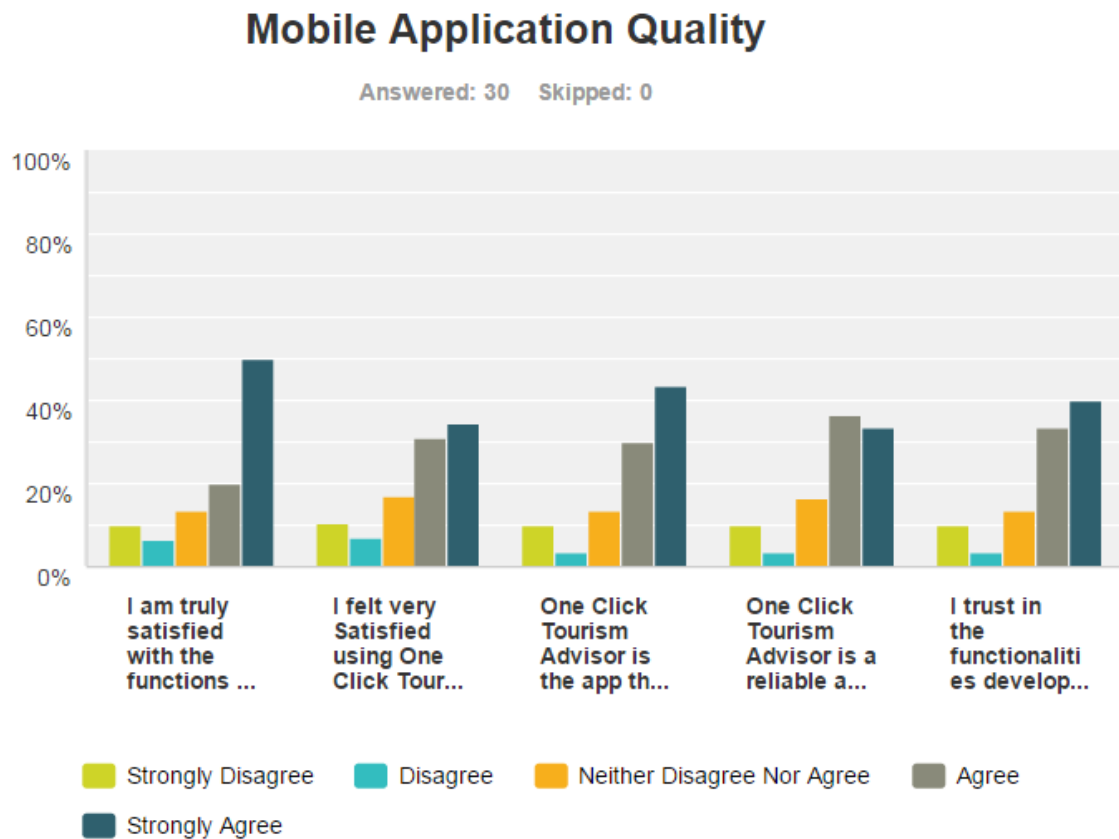


Figure 39 The UAT on Mobile Application quality

Table 11 The UAT on Mobile Application Quality data

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Total
I am truly satisfied with the functions in One Click Tourism Advisor app	10.0% 3	6.7% 2	13.3% 4	20.0% 6	50.0% 15	30
I felt very Satisfied using One Click Tourism Advisor app	10.3% 3	6.9% 2	17.2% 5	31.0% 9	34.5% 10	29
One Click Tourism Advisor is the app that I was always looking for	10.0% 3	3.3% 1	13.3% 4	30.0% 9	43.3% 13	30
One Click Tourism Advisor is a reliable app that everyone should use	10.0% 3	3.3% 1	16.7% 5	36.7% 11	33.3% 10	30
I trust in the functionalities developed in One Click Tourism Advisor app	10.0% 3	3.3% 1	13.3% 4	33.3% 10	40.0% 12	30

Based on the testing of the mobile application quality, most of the respondents are truly satisfied in using OCTA app. They also find OCTA is reliable app and trusts the functionality in it.43.3% of them strongly agree that OCTA is the app that they were always look for, whereas the rest remain neutral on the statement.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

In conclusion, it is believed that by using appropriate programming language and analyzing the tools of the development processes, it is achievable to build the proposed system which aimed to solve the problem of tourists before and after traveling.

Basically, the system is believed to benefit all the people who are planning to travel by suggesting them convenient places according to their preferences. Thus, it helps them save time and money.

OCTA mobile application is proposed in this project to serve travelers especially for planning vacation and tourism. It carries the valuable functionalities whereby a one click on the Advise me button in the app is able to view results after a user fills in the preferences that are listed in the App, not only that but it also shows the picture of the suggested places and some additional places to go around that suggested place. Additionally, OCTA app is a good assistant for people who are not certain about which place to visit.

According to the UAT result from the selected 30 respondents, they are significantly satisfied with OCTA features and functions.

Performed critical analyses have contributed feasibly to further understanding and improving the application functionality through the project period. Furthermore, selected tools for building the app prototype has been proved to be effective and appropriate for given project.

REFERENCES

- [1] Kennedy-Eden, H. G., U. (2012). A taxonomy of mobile applications in tourism. *E-review of Tourism Research*, 10 (2), 47-50.
- [2] World Tourism Organization UNWTO (2014, May 14). International tourism generates US\$ 1.4 trillion in export earnings. [Press release] .Retrieved from <http://media.unwto.org/press-release/2014-05-13/international-tourism-generates-us-14-trillion-export-earnings>
- [3] Kounavis, C. D., Kasimati, A. E., Zamani, E. D., &Giaglis, G. (2012). Enhancing the tourism experience through mobile augmented reality: Challenges and prospects. *International Journal of Engineering Business Management*, 4(10), 1-6.
- [4] Yuzhuliu, R. L. (2013). *Information and communication Technologies in Tourism*
- [5] DRESNER ADVISORY SERVICES, LLC; Micro Strategy. (2012). Mobile Computing / Mobile Business. Retrieved 2013
- [6] Gallego, D., Woerndl, W., &Huecas, G. (2013). Evaluating the impact of proactivity in the user experience of a context-aware restaurant recommender for Android smartphones. *Journal of Systems Architecture*, 59(9), 748-758.
- [7] Barrera, D., Kayacik, H. G., van Oorschot, P. C., &Somayaji, A. (2010, October). A methodology for empirical analysis of permission-based security models and its application to android. In *Proceedings of the 17th ACM conference on Computer and communications security* (pp. 73-84). ACM.

[8] Wan, C. (2013). The mobile way to explore Malaysia Truly Asia Retrieved 29-7-2014, 2014

[9] Pesonen, J., &Horster, E. (2012). Near field communication technology in tourism. *Tourism Management Perspectives*, 4, 11-18.

APPENDIX I-a: Data Base

ID	Name	Location	Area	Pack	Budget	Time	Food	Transport
1	Langkawi	Asia, Malaysia	Beach/Island	Honeymoon	1600	Year-long	Halal, Both	Rent Car
2	Tioman	Asia, Malaysia	Beach/Island	Honeymoon	1500	Year-long	Halal, Both	Rent Car
3	Kuala Lumpur	Asia, Malaysia	City	Friends Getaway	2000	Year-long	Both, Both	Both
4	Malacca	Asia, Malaysia	City	Friends Getaway	1500	Year-long	Halal, Vegetarian	Both
5	Penang	Asia, Malaysia	Beach/Island	Friends Getaway	1800	Year-long	Both, Vegetarian	Both
6	Johor Bahru	Asia, Malaysia	City	Friends Getaway	1500	Year-long	Halal, Vegetarian	Both
7	Pangkor	Asia, Malaysia	Beach/Island	Honeymoon	1600	Year-long	Halal, Both	Rent Car
8	Mt. Ledang	Asia, Malaysia	Mountain/Hill	Family Hangout	1000	Year-long	Halal, Both	Rent Car
9	Mt. Kinabalu	Asia, Malaysia	Mountain/Hill	Family Hangout	1200	Year-long	Halal, Both	Rent Car
10	Cameron Highland	Asia, Malaysia	Mountain/Hill	Honeymoon	2000	Year-long	Halal, Both	Rent Car
11	Genting Highland	Asia, Malaysia	Mountain/Hill	Alone	2500	Year-long	Both, Both	Rent Car
12	Kuala Selangor	Asia, Malaysia	Countryside	Honeymoon	1000	Year-long	Halal, Both	Rent Car
13	Bali	Asia, Indonesia	Countryside	Honeymoon	1200	Year-	Both, Both	Rent Car

						long		
14	Bandung	Asia, Indonesia	Countryside	Family Hangout	1000	Year-long	Halal, Both	Rent Car
15	Mt. Krakatoa	Asia, Indonesia	Mountain/Hill	Alone	1000	Year-long	Halal, Both	Rent Car
16	Cebu	Asia, the Philippines	Beach/Island	Honeymoon	1000	Year-long	Both, Vegetarian	Rent Car
17	Manila	Asia, the Philippines	City	Friends Getaway	1200	Year-long	Both, Both	Both
18	Mt. Pinatubo	Asia, the Philippines	Mountain/Hill	Alone	1000	Year-long	Both, Both	Rent Car
19	Singapore City	Asia, Singapore	City	Friends Getaway	2000	Year-long	Both, Vegetarian	Both
20	Sentosa	Asia, Singapore	Beach/Island	Honeymoon	2500	Year-long	Both, Vegetarian	Rent Car
21	Jakarta	Asia, Indonesia	City	Friends Getaway	1100	Year-long	Both, Both	Both
22	Phuket	Asia, Thailand	Beach/Island	Honeymoon	1400	Year-long	Both, Both	Rent Car
23	Krabi	Asia, Thailand	Beach/Island	Family Hangout	1400	Year-long	Both, Both	Rent Car
24	Haatyai	Asia, Thailand	Countryside	Family Hangout	1200	Year-long	Both, Both	Rent Car
25	Kyoto	Asia, Japan	Countryside	Honeymoon	1800	Autumn	Both, Both	Public
26	Beijing	Asia, China	City	Alone	1700	Winter	Both, Both	Public
27	Taipei	Asia, Taiwan	City	Alone	1800	Winter	Both, Both	Public

APPENDIX I-b: Data Base

ID	Nearby Places/places of interest
1	Mt. Machincang, Kuah City, Lake DayangMandi
2	Mt. Dragon Princess, Badang Reef, Coral Reef
3	PETRONAS Twin Towers, National Mosque, KL Tower
4	Stadhuys, Christ Church, A Famosa
5	Bendera Hill, BatuFerringhi, Penang Street Art
6	Legoland, Bukit Serene Palace, Sultan Abu Bakar Mosque
7	PangkorLaut Island, Pangkor National Park, Talang Island
8	Ledang National Park, Ledang Waterfall, Ledang Resort
9	Kinabalu National Park, Rafflesia Heights, Kinabalu Heritage Resort
10	Strawberry Farm, Tea Farm, BOH Tea Factory
11	Genting Skyway, Highland Mushroom Farm, Highland Vegetable Farm
12	Bukit Melawati, Kuala Selangor Nature Park, Kuala Selangor Freshwater Fish Park
13	Bali Safari and Marine Park, Bali Shell Museum, Blanco Renaissance Museum
14	Patenggang Lake, KawahPutih, Villa Isola
15	Krakatoa Volcano Tour, Krakatoaaau Dive Tour, Krakatoa Ecotourism Tour
16	Cebu Taoist Temple, MuseoSugbo, Mactan
17	Rizal Park, Fort Santiago, Quiapo Church
18	Pinatubo Crater Lake, Capas National Shrine, St. Angeles Church
19	Singapore Zoo, Marine Life Park, Marina Bay Sands
20	Universal Studio Singapore, Sentosa River Safari, Underwater World Singapore
21	National Monument Indonesia, Istiqlal Mosque, Merdeka Square
22	Amulet Market, Ao Yon Waterfall, Baan Chinpracha
23	Railay Beach, KoPoda, KhaoPhanomBencha National Park
24	Haatyai Floating Market, Haatyai Ice Dome, Ton Nga Chang Waterfall"
25	Nijo Castle, Arashiyama, Tenryu-ji
26	Forbidden City, Great Wall of China, Summer Palace
27	Taipei 101, Shilin Night Market, Taipei Fine Arts Museum

APPENDIX II: Application Code

a- Database Helper code

```
package com.example.octa;

import java.util.ArrayList;
import java.util.List;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.util.Log;

public class DatabaseHelper extends SQLiteOpenHelper {

    /* Set database information */

    private static final String DATABASE_NAME = "OneClickTourismAdvisor";
    private static final int DATABASE_VERSION = 1;

    /* Set table-related information (table name and column names) */
    private static final String PLACE = "place";

    private static final String KEY_ID = "id";
    private static final String KEY_NAME = "name";
    private static final String KEY_LOCATION = "location";
    private static final String KEY_AREA = "area";
    private static final String KEY_PACK = "pack";
    private static final String KEY_BUDGET = "budget";
    private static final String KEY_TIME = "time";
```

```

private static final String KEY_FOOD = "food";
private static final String KEY_TRANSPORT = "transport";
private static final String KEY_IMAGE = "image";
private static final String KEY_DESC = "desc";

/* Set SQL query to create table */
private static final String CREATE_TABLE_PLACE = "CREATE TABLE " + PLACE
TEXT,"
        + "(" + KEY_ID + " INTEGER PRIMARY KEY," + KEY_NAME + "
        + KEY_LOCATION + " TEXT," + KEY_AREA + " TEXT," + KEY_PACK
        + " TEXT," + KEY_BUDGET + " LONG," + KEY_TIME + " STRING,"
        + KEY_FOOD + " TEXT," + KEY_TRANSPORT + " TEXT," +
KEY_IMAGE
        + " TEXT," + KEY_DESC + " TEXT" + ")";

```

/* Constructor */

```

public DatabaseHelper(Context context) {
    super(context, DATABASE_NAME, null, DATABASE_VERSION);
}

/*
 * Create table by executing SQL query. If table cannot be created, all
 * databases MUST be MANUALLY deleted at data/data/com.example.octa using
 * DDMS interface
 */
@Override
public void onCreate(SQLiteDatabase db) {
    db.execSQL(CREATE_TABLE_PLACE);
}

/*
 * Delete existing table on version upgrades. A new table is created to

```



```

* replace existing table
*/
@Override
public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
    db.execSQL("DROP TABLE IF EXISTS " + PLACE);
    onCreate(db);
}

/* This function is used to create places to be inserted into the database. */
public long createPlace(Place place) {
    SQLiteDatabase db = this.getWritableDatabase();

    ContentValues values = new ContentValues();
    values.put(KEY_ID, place.getId());
    values.put(KEY_NAME, place.getName());
    values.put(KEY_LOCATION, place.getLocation());
    values.put(KEY_AREA, place.getArea());
    values.put(KEY_PACK, place.getPack());
    values.put(KEY_BUDGET, place.getBudget());
    values.put(KEY_TIME, place.getTime());
    values.put(KEY_FOOD, place.getFood());
    values.put(KEY_TRANSPORT, place.getTransport());
    values.put(KEY_IMAGE, place.getImage());
    values.put(KEY_DESC, place.getDesc());

    long place_id = db.insert(PLACE, null, values);

    return place_id;
}

```

```

/*
 * This function retrieves all places that exist in the database. It is done
 * by running SQL query against the SQLite database.
 */
public List<Place>getAllPlaces() {
    List<Place> place = new ArrayList<Place>();

    String selectQuery = "SELECT * FROM " + PLACE;
    Log.e("Query", "Query: " + selectQuery);

    SQLiteDatabase db = this.getReadableDatabase();
    Cursor cursor = db.rawQuery(selectQuery, null);

    if (cursor.moveToFirst()) {
        do {
            Place p = new Place();
            p.setId(cursor.getInt(cursor.getColumnIndex(KEY_ID)));

            p.setName(cursor.getString(cursor.getColumnIndex(KEY_NAME)));
            p.setLocation(cursor.getString(cursor
                .getColumnIndex(KEY_LOCATION)));

            p.setArea(cursor.getString(cursor.getColumnIndex(KEY_AREA)));

            p.setPack(cursor.getString(cursor.getColumnIndex(KEY_PACK)));

            p.setBudget(cursor.getLong(cursor.getColumnIndex(KEY_BUDGET)));

            p.setTime(cursor.getString(cursor.getColumnIndex(KEY_TIME)));

            p.setFood(cursor.getString(cursor.getColumnIndex(KEY_FOOD)));
            p.setTransport(cursor.getString(cursor
                .getColumnIndex(KEY_TRANSPORT)));

```

```

p.setImage(cursor.getString(cursor.getColumnIndex(KEY_IMAGE)));

p.setDesc(cursor.getString(cursor.getColumnIndex(KEY_DESC)));

        /* append collected data into a list */
        place.add(p);

    } while (cursor.moveToNext());
}

return place;
}

/*
 * This function retrieves all places that exist in the database. The
 * difference is that it filters the result against collected data from
 * Preferences activity (MainActivity.java). It is done by running SQL query
 * against the SQLite database.
 */

public List<Place>getAllPlacesByFilter(String location, String area,
        String pack, long fbudget, long tbudget, String time,
        String transport, String food) {
    List<Place> place = new ArrayList<Place>();

    String selectQuery = "SELECT * FROM " + PLACE + " WHERE "
        + KEY_LOCATION + " = " + location + "'" + " AND " +
KEY_AREA
        + " = " + area + "'" + " AND " + KEY_PACK + " = " + pack
        + "'" + " AND " + KEY_BUDGET + " >= " + fbudget + " AND "
        + KEY_BUDGET + " <= " + tbudget + " AND " + KEY_TIME + "
= "
        + time + "'" + " AND " + KEY_TRANSPORT + " = " + transport

```

```
+ "" + " AND " + KEY_FOOD + " = " + food + "";
```

```
Log.e("Query", "Query: " + selectQuery);
```

```
SQLiteDatabase db = this.getReadableDatabase();
```

```
Cursor cursor = db.rawQuery(selectQuery, null);
```

```
if (cursor.moveToFirst()) {
```

```
    do {
```

```
        Place p = new Place();
```

```
        p.setId(cursor.getInt(cursor.getColumnIndex(KEY_ID)));
```

```
        p.setName(cursor.getString(cursor.getColumnIndex(KEY_NAME)));
```

```
        p.setLocation(cursor.getString(cursor  
            .getColumnIndex(KEY_LOCATION)));
```

```
        p.setArea(cursor.getString(cursor.getColumnIndex(KEY_AREA)));
```

```
        p.setPack(cursor.getString(cursor.getColumnIndex(KEY_PACK)));
```

```
        p.setBudget(cursor.getLong(cursor.getColumnIndex(KEY_BUDGET)));
```

```
        p.setTime(cursor.getString(cursor.getColumnIndex(KEY_TIME)));
```

```
        p.setFood(cursor.getString(cursor.getColumnIndex(KEY_FOOD)));
```

```
        p.setTransport(cursor.getString(cursor  
            .getColumnIndex(KEY_TRANSPORT)));
```

```
        p.setImage(cursor.getString(cursor.getColumnIndex(KEY_IMAGE)));
```

```
        p.setDesc(cursor.getString(cursor.getColumnIndex(KEY_DESC)));
```

```
/* append collected data into a list */
```

```
place.add(p);
```

```
    } while (cursor.moveToNext());
```

```
    }
```

```
    return place;
```

```
    }
```

```
/* This function returns the number of places stored inside the database. */
```

```
public int getPlaceCount() {
```

```
    String countQuery = "SELECT * FROM " + PLACE;
```

```
    SQLiteDatabase db = this.getReadableDatabase();
```

```
    Cursor cursor = db.rawQuery(countQuery, null);
```

```
    int count = cursor.getCount();
```

```
    cursor.close();
```

```
    return count;
```

```
    }
```

```
}
```

b- ThePlaces code

```
package com.example.octa;

import java.util.List;
import java.util.StringTokenizer;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.util.Log;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.ImageView;
import android.widget.TextView;

public class SearchResult extends Activity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        /* Setting initial view of SearchResult.java activity */
        setContentView(R.layout.activity_search_result);

        /* Getting the collected data from Preferences (MainActivity.java) */
        Intent intent = getIntent();
        String message = intent.getStringExtra(MainActivity.EXTRA_MESSAGE);
```

```

/* Separating the message into several chunks of data */
StringTokenizer separated = new StringTokenizer(message, ".");

String location = separated.nextToken();
String area = separated.nextToken();
String pack = separated.nextToken();
Integer fbudget = Integer.parseInt(separated.nextToken());
Integer tbudget = Integer.parseInt(separated.nextToken());
String time = separated.nextToken();
String food = separated.nextToken();
String transport = separated.nextToken();

DatabaseHelperdb = new DatabaseHelper(getApplicationContext());
Log.d("Database Name: ", db.getDatabaseName());

/* create all places */
Place langkawi = new Place(1, "Langkawi", "Asia", "Malaysia",
    "Beach/Island", "Honeymoon", 1600, "Year-long", "Halal",
    "Both", "Rent Car", "langkawi_img",
    "Mt. Machincang, Kuah City, Lake DayangMandi");

Place tioman = new Place(2, "Tioman", "Asia", "Malaysia",
    "Beach/Island", "Honeymoon", 1500, "Year-long", "Halal",
    "Both", "Rent Car", "tioman_img",
    "Mt. Dragon Princess, Badang Reef, Coral Reef");

Place kuala_lumpur = new Place(3, "Kuala Lumpur", "Asia", "Malaysia",
    "City", "Friends Getaway", 2000, "Year-long", "Both", "Both",

```

"Both", "kuala_lumpur_img",
"PETRONAS Twin Towers, National Mosque, KL Tower");

Place malacca = new Place(4, "Malacca", "Asia", "Malaysia", "City",
"Friends Getaway", 1500, "Year-long", "Halal", "Vegetarian",
"Both", "malacca_img", "Stadhuys, Christ Church, A Famosa");

Place penang = new Place(5, "Penang", "Asia", "Malaysia",
"Beach/Island", "Friends Getaway", 1800, "Year-long", "Both",
"Vegetarian", "Both", "penang_img",
"Bendera Hill, BatuFerringhi, Penang Street Art");

Place johor_bahru = new Place(6, "Johor Bahru", "Asia", "Malaysia",
"City", "Friends Getaway", 1500, "Year-long", "Halal",
"Vegetarian", "Both", "johor_bahru_img",
"Legoland, Bukit Serene Palace, Sultan Abu Bakar Mosque");

Place pangkor = new Place(7, "Pangkor", "Asia", "Malaysia",
"Beach/Island", "Honeymoon", 1600, "Year-long", "Halal",
"Both", "Rent Car", "pangkor_img",
"PangkorLaut Island, Pangkor National Park, Talang Island");

Place ledang = new Place(8, "Mt. Ledang", "Asia", "Malaysia",
"Mountain/Hill", "Family Hangout", 1000, "Year-long", "Halal",
"Both", "Rent Car", "ledang_img",
"Ledang National Park, Ledang Waterfall, Ledang Resort");

Place kinabalu = new Place(9, "Mt. Kinabalu", "Asia", "Malaysia",
"Mountain/Hill", "Family Hangout", 1200, "Year-long", "Halal",

"Both", "Rent Car", "kinabalu_img",
"Kinabalu National Park, Rafflesia Heights, Kinabalu Heritage
Resort");

Place cameron = new Place(10, "Cameron Highland", "Asia", "Malaysia",
"Mountain/Hill", "Honeymoon", 2000, "Year-long", "Halal",
"Both", "Rent Car", "cameron_img",
"Strawberry Farm, Tea Farm, BOH Tea Factory");

Place genting = new Place(11, "Genting Highland", "Asia", "Malaysia",
"Mountain/Hill", "Alone", 2500, "Year-long", "Both", "Both",
"Rent Car", "genting_img",
"Genting Skyway, Highland Mushroom Farm, Highland
Vegetable Farm");

Place kuala_selangor = new Place(
12,
"Kuala Selangor",
"Asia",
"Malaysia",
"Countryside",
"Honeymoon",
1000,
"Year-long",
"Halal",
"Both",
"Rent Car",
"kuala_selangor_img",
"Bukit Melawati, Kuala Selangor Nature Park, Kuala Selangor
Freshwater Fish Park");

```
Place bali = new Place(13, "Bali", "Asia", "Indonesia", "Countryside",  
    "Honeymoon", 1200, "Year-long", "Both", "Both", "Rent Car",  
    "bali_img",  
    "Bali Safari and Marine Park, Bali Shell Museum, Blanco  
Renaissance Museum");
```

```
Place bandung = new Place(14, "Bandung", "Asia", "Indonesia",  
    "Countryside", "Family Hangout", 1000, "Year-long", "Halal",  
    "Both", "Rent Car", "bandung_img",  
    "Patenggang Lake, KawahPutih, Villa Isola");
```

```
Place krakatoa = new Place(15, "Mt. Krakatoa", "Asia", "Indonesia",  
    "Mountain/Hill", "Alone", 1000, "Year-long", "Halal", "Both",  
    "Rent Car", "krakatoa_img",  
    "Krakatoa Volcano Tour, Krakatoaau Dive Tour, Krakatoa  
Ecotourism Tour");
```

```
Place cebu = new Place(16, "Cebu", "Asia", "the Philippines",  
    "Beach/Island", "Honeymoon", 1000, "Year-long", "Both",  
    "Vegetarian", "Rent Car", "cebu_img",  
    "Cebu Taoist Temple, MuseoSugbo, Mactan");
```

```
Place manila = new Place(17, "Manila", "Asia", "the Philippines",  
    "City", "Friends Getaway", 1200, "Year-long", "Both", "Both",  
    "Both", "manila_img",  
    "Rizal Park, Fort Santiago, Quiapo Church");
```

```
Place pinatubo = new Place(18, "Mt. Pinatubo", "Asia",
```

"the Philippines", "Mountain/Hill", "Alone", 1000, "Year-long",
"Both", "Both", "Rent Car", "pinatubo_img",
"Pinatubo Crater Lake, Capas National Shrine, St. Angeles
Church");

Place singapore_city = new Place(19, "Singapore City", "Asia",
"Singapore", "City", "Friends Getaway", 2000, "Year-long",
"Both", "Vegetarian", "Both", "singapore_city_img",
"Singapore Zoo, Marine Life Park, Marina Bay Sands");

Place sentosa = new Place(20, "Sentosa", "Asia", "Singapore",
"Beach/Island", "Honeymoon", 2500, "Year-long", "Both",
"Vegetarian", "Rent Car", "sentosa_img",
"Universal Studio Singapore, Sentosa River Safari, Underwater
World Singapore");

Place jakarta = new Place(21, "Jakarta", "Asia", "Indonesia", "City",
"Friends Getaway", 1100, "Year-long", "Both", "Both", "Both",
"jakarta_img",
"National Monument Indonesia, Istiqlal Mosque, Merdeka
Square");

Place phuket = new Place(22, "Phuket", "Asia", "Thailand",
"Beach/Island", "Honeymoon", 1400, "Year-long", "Both",
"Both",
"Rent Car", "phuket_img",
"Amulet Market, Ao Yon Waterfall, Baan Chinpracha");

Place krabi = new Place(23, "Krabi", "Asia", "Thailand",
"Beach/Island", "Family Hangout", 1400, "Year-long", "Both",

```
"Both", "Rent Car", "krabi_img",  
"Railay Beach, KoPoda, KhaoPhanomBencha National Park");
```

```
Place haatyai = new Place(24, "Haatyai", "Asia", "Thailand",  
"Countryside", "Family Hangout", 1200, "Year-long", "Both",  
"Both", "Rent Car", "haatyai_img",  
"Haatyai Floating Market, Haatyai Ice Dome, Ton Nga Chang  
Waterfall");
```

```
Place kyoto = new Place(25, "Kyoto", "Asia", "Japan", "Countryside",  
"Honeymoon", 1800, "Autumn", "Both", "Both", "Public",  
"kyoto_img", "Nijo Castle, Arashiyama, Tenryu-ji");
```

```
Place beijing = new Place(26, "Beijing", "Asia", "China", "City",  
"Alone", 1700, "Winter", "Both", "Both", "Public",  
"beijing_img",  
"Forbidden City, Great Wall of China, Summer Palace");
```

```
Place taipei = new Place(27, "Taipei", "Asia", "Taiwan", "City",  
"Alone", 1800, "Winter", "Both", "Both", "Public",  
"taipei_img",  
"Taipei 101, Shilin Night Market, Taipei Fine Arts Museum");
```

```
/* Insert all places into the database */
```

```
longlangkawi_id = db.createPlace(langkawi);
```

```
longtioman_id = db.createPlace(tioman);
```

```
longkuala_lumpur_id = db.createPlace(kuala_lumpur);
```

```
longmalacca_id = db.createPlace(malacca);
```

```
longpenang_id = db.createPlace(penang);
```

```
longjohor_bahru_id = db.createPlace(johor_bahru);
longpangkor_id = db.createPlace(pangkor);
longledang_id = db.createPlace(ledang);
longkinabalu_id = db.createPlace(kinabalu);
longcameron_id = db.createPlace(cameron);
longgenting_id = db.createPlace(genting);
longkuala_selangor_id = db.createPlace(kuala_selangor);
longbali_id = db.createPlace(bali);
longbandung_id = db.createPlace(bandung);
longkrakatoa_id = db.createPlace(krakatoa);
longcebu_id = db.createPlace(cebu);
longmanila_id = db.createPlace(manila);
longpinatubo_id = db.createPlace(pinatubo);
longsingapore_city_id = db.createPlace(singapore_city);
longsentosa_id = db.createPlace(sentosa);
longjakarta_id = db.createPlace(jakarta);
longphuket_id = db.createPlace(phuket);
longkrabi_id = db.createPlace(krabi);
longhaatyai_id = db.createPlace(haatyai);
longkyoto_id = db.createPlace(kyoto);
longbeijing_id = db.createPlace(beijing);
longtaipei_id = db.createPlace(taipei);
```

```
Log.d("Place ID: ", String.valueOf(db.getPlaceCount()));
```

```
/* Get all places */
```

```
List<Place>filterPlace = db.getAllPlaces();
```

```
for (Place place : filterPlace) {
```

```
    Log.d("Place Name: ", place.getTransport());
```

```

}

/* Setting views to be used */
ImageView img1 = (ImageView) findViewById(R.id.image1);
ImageView img2 = (ImageView) findViewById(R.id.image2);

TextView place1 = (TextView) findViewById(R.id.place1);
TextView place2 = (TextView) findViewById(R.id.place2);
TextView desc1 = (TextView) findViewById(R.id.desc1);
TextView desc2 = (TextView) findViewById(R.id.desc2);

/*
 * Get all places based on collected data from Preferences
 * (MainActivity.java)
 */
List<Place>allPlaceByFilter = db.getAllPlacesByFilter(location, area,
            pack, fbudget, tbudget, time, transport, food);
int count = 0;

for (Place place : allPlaceByFilter) {
    count++;
    Log.d("Place Name: ", place.getName());

    /* Replacing image placeholder */
    intresId = getResources().getIdentifier(place.getImage(),
            "drawable", getPackageName());

    if (count == 1) {
        img1.setImageResource(resId);
    }
}

```

```

        place1.setText(count + ". " + place.getName());
        desc1.setText("Points of Interest: " + place.getDesc());
    } else if (count == 2) {
        img2.setImageResource(resId);
        place2.setText(count + ". " + place.getName());
        desc2.setText("Points of Interest: " + place.getDesc());
    } else {
        break;
    }
}

db.close();
}

```

```

@Override
public boolean onCreateOptionsMenu(Menu menu) {
    /* Inflate the menu; this adds items to the action bar if it is present. */
    getMenuInflater().inflate(R.menu.search_result, menu);
    return true;
}

```

```

@Override
public boolean onOptionsItemSelected(MenuItem item) {
    /*
    * Handle action bar item clicks here. The action bar will automatically
    * handle clicks on the Home/Up button, so long as you specify a parent
    * Activity in AndroidManifest.xml.
    */
}

```

```

        int id = item.getItemId();
        if (id == R.id.action_settings) {
            return true;
        }
        return super.onOptionsItemSelected(item);
    }

    /* Send user back to Preferences (MainActivity.java) */
    public void tryAgain(View view) {
        Intent intent = new Intent(this, MainActivity.class);
        startActivity(intent);
    }
}

```

c- Search result code

```

package com.example.octa;

import java.util.List;
import java.util.StringTokenizer;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.util.Log;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.ImageView;

```



```

import android.widget.TextView;

public class SearchResult extends Activity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        /* Setting initial view of SearchResult.java activity */
        setContentView(R.layout.activity_search_result);

        /* Getting the collected data from Preferences (MainActivity.java) */
        Intent intent = getIntent();
        String message = intent.getStringExtra(MainActivity.EXTRA_MESSAGE);

        /* Separating the message into several chunks of data */
        StringTokenizer separated = new StringTokenizer(message, ".");

        String location = separated.nextToken();
        String area = separated.nextToken();
        String pack = separated.nextToken();
        Integer fbudget = Integer.parseInt(separated.nextToken());
        Integer tbudget = Integer.parseInt(separated.nextToken());
        String time = separated.nextToken();
        String food = separated.nextToken();
        String transport = separated.nextToken();

        DatabaseHelperdb = new DatabaseHelper(getApplicationContext());
        Log.d("Database Name: ", db.getDatabaseName());
    }
}

```

/* Create all places */

```
Place langkawi = new Place(1, "Langkawi", "Asia", "Malaysia",  
    "Beach/Island", "Honeymoon", 1600, "Year-long", "Halal",  
    "Both", "Rent Car", "langkawi_img",  
    "Mt. Machincang, Kuah City, Lake DayangMandi");
```

```
Place tioman = new Place(2, "Tioman", "Asia", "Malaysia",  
    "Beach/Island", "Honeymoon", 1500, "Year-long", "Halal",  
    "Both", "Rent Car", "tioman_img",  
    "Mt. Dragon Princess, Badang Reef, Coral Reef");
```

```
Place kuala_lumpur = new Place(3, "Kuala Lumpur", "Asia", "Malaysia",  
    "City", "Friends Getaway", 2000, "Year-long", "Both", "Both",  
    "Both", "kuala_lumpur_img",  
    "PETRONAS Twin Towers, National Mosque, KL Tower");
```

```
Place malacca = new Place(4, "Malacca", "Asia", "Malaysia", "City",  
    "Friends Getaway", 1500, "Year-long", "Halal", "Vegetarian",  
    "Both", "malacca_img", "Stadhuys, Christ Church, A Famosa");
```

```
Place penang = new Place(5, "Penang", "Asia", "Malaysia",  
    "Beach/Island", "Friends Getaway", 1800, "Year-long", "Both",  
    "Vegetarian", "Both", "penang_img",  
    "Bendera Hill, BatuFerringhi, Penang Street Art");
```

```
Place johor_bahru = new Place(6, "Johor Bahru", "Asia", "Malaysia",  
    "City", "Friends Getaway", 1500, "Year-long", "Halal",  
    "Vegetarian", "Both", "johor_bahru_img",
```

"Legoland, Bukit Serene Palace, Sultan Abu Bakar Mosque");

Place pangkor = new Place(7, "Pangkor", "Asia", "Malaysia",
"Beach/Island", "Honeymoon", 1600, "Year-long", "Halal",
"Both", "Rent Car", "pangkor_img",
"PangkorLaut Island, Pangkor National Park, Talang Island");

Place ledang = new Place(8, "Mt. Ledang", "Asia", "Malaysia",
"Mountain/Hill", "Family Hangout", 1000, "Year-long", "Halal",
"Both", "Rent Car", "ledang_img",
"Ledang National Park, Ledang Waterfall, Ledang Resort");

Place kinabalu = new Place(9, "Mt. Kinabalu", "Asia", "Malaysia",
"Mountain/Hill", "Family Hangout", 1200, "Year-long", "Halal",
"Both", "Rent Car", "kinabalu_img",
"Kinabalu National Park, Rafflesia Heights, Kinabalu Heritage
Resort");

Place cameron = new Place(10, "Cameron Highland", "Asia", "Malaysia",
"Mountain/Hill", "Honeymoon", 2000, "Year-long", "Halal",
"Both", "Rent Car", "cameron_img",
"Strawberry Farm, Tea Farm, BOH Tea Factory");

Place genting = new Place(11, "Genting Highland", "Asia", "Malaysia",
"Mountain/Hill", "Alone", 2500, "Year-long", "Both", "Both",
"Rent Car", "genting_img",
"Genting Skyway, Highland Mushroom Farm, Highland
Vegetable Farm");

```
Place kuala_selangor = new Place(
    12,
    "Kuala Selangor",
    "Asia",
    "Malaysia",
    "Countryside",
    "Honeymoon",
    1000,
    "Year-long",
    "Halal",
    "Both",
    "Rent Car",
    "kuala_selangor_img",
    "Bukit Melawati, Kuala Selangor Nature Park, Kuala Selangor
Freshwater Fish Park");
```

```
Place bali = new Place(13, "Bali", "Asia", "Indonesia", "Countryside",
    "Honeymoon", 1200, "Year-long", "Both", "Both", "Rent Car",
    "bali_img",
    "Bali Safari and Marine Park, Bali Shell Museum, Blanco
Renaissance Museum");
```

```
Place bandung = new Place(14, "Bandung", "Asia", "Indonesia",
    "Countryside", "Family Hangout", 1000, "Year-long", "Halal",
    "Both", "Rent Car", "bandung_img",
    "Patenggang Lake, KawahPutih, Villa Isola");
```

```
Place krakatoa = new Place(15, "Mt. Krakatoa", "Asia", "Indonesia",
    "Mountain/Hill", "Alone", 1000, "Year-long", "Halal", "Both",
```

"Rent Car", "krakatoa_img",
"Krakatoa Volcano Tour, Krakatoaau Dive Tour, Krakatoa
Ecotourism Tour");

Place cebu = new Place(16, "Cebu", "Asia", "the Philippines",
"Beach/Island", "Honeymoon", 1000, "Year-long", "Both",
"Vegetarian", "Rent Car", "cebu_img",
"Cebu Taoist Temple, MuseoSugbo, Mactan");

Place manila = new Place(17, "Manila", "Asia", "the Philippines",
"City", "Friends Getaway", 1200, "Year-long", "Both", "Both",
"Both", "manila_img",
"Rizal Park, Fort Santiago, Quiapo Church");

Place pinatubo = new Place(18, "Mt. Pinatubo", "Asia",
"the Philippines", "Mountain/Hill", "Alone", 1000, "Year-long",
"Both", "Both", "Rent Car", "pinatubo_img",
"Pinatubo Crater Lake, Capas National Shrine, St. Angeles
Church");

Place singapore_city = new Place(19, "Singapore City", "Asia",
"Singapore", "City", "Friends Getaway", 2000, "Year-long",
"Both", "Vegetarian", "Both", "singapore_city_img",
"Singapore Zoo, Marine Life Park, Marina Bay Sands");

Place sentosa = new Place(20, "Sentosa", "Asia", "Singapore",
"Beach/Island", "Honeymoon", 2500, "Year-long", "Both",
"Vegetarian", "Rent Car", "sentosa_img",
"Universal Studio Singapore, Sentosa River Safari, Underwater
World Singapore");

Place jakarta = new Place(21, "Jakarta", "Asia", "Indonesia", "City",
"Friends Getaway", 1100, "Year-long", "Both", "Both", "Both",
"jakarta_img",
"National Monument Indonesia, Istiqlal Mosque, Merdeka
Square");

Place phuket = new Place(22, "Phuket", "Asia", "Thailand",
"Beach/Island", "Honeymoon", 1400, "Year-long", "Both",
"Both",
"Rent Car", "phuket_img",
"Amulet Market, Ao Yon Waterfall, Baan Chinpracha");

Place krabi = new Place(23, "Krabi", "Asia", "Thailand",
"Beach/Island", "Family Hangout", 1400, "Year-long", "Both",
"Both", "Rent Car", "krabi_img",
"Railay Beach, KoPoda, KhaoPhanomBencha National Park");

Place haatyai = new Place(24, "Haatyai", "Asia", "Thailand",
"Countryside", "Family Hangout", 1200, "Year-long", "Both",
"Both", "Rent Car", "haatyai_img",
"Haatyai Floating Market, Haatyai Ice Dome, Ton Nga Chang
Waterfall");

Place kyoto = new Place(25, "Kyoto", "Asia", "Japan", "Countryside",
"Honeymoon", 1800, "Autumn", "Both", "Both", "Public",
"kyoto_img", "Nijo Castle, Arashiyama, Tenryu-ji");

Place beijing = new Place(26, "Beijing", "Asia", "China", "City",
"Alone", 1700, "Winter", "Both", "Both", "Public",

```
"beijing_img",  
"Forbidden City, Great Wall of China, Summer Palace");
```

```
Place taipei = new Place(27, "Taipei", "Asia", "Taiwan", "City",  
"Alone", 1800, "Winter", "Both", "Both", "Public",  
"taipei_img",  
"Taipei 101, Shilin Night Market, Taipei Fine Arts Museum");
```

```
/* Insert all places into the database */
```

```
longlangkawi_id = db.createPlace(langkawi);  
longtioman_id = db.createPlace(tioman);  
longkuala_lumpur_id = db.createPlace(kuala_lumpur);  
longmalacca_id = db.createPlace(malacca);  
longpenang_id = db.createPlace(penang);  
longjohor_bahru_id = db.createPlace(johor_bahru);  
longpangkor_id = db.createPlace(pangkor);  
longledang_id = db.createPlace(ledang);  
longkinabalu_id = db.createPlace(kinabalu);  
longcameron_id = db.createPlace(cameron);  
longgenting_id = db.createPlace(genting);  
longkuala_selangor_id = db.createPlace(kuala_selangor);  
longbali_id = db.createPlace(bali);  
longbandung_id = db.createPlace(bandung);  
longkrakatoa_id = db.createPlace(krakatoa);  
longcebu_id = db.createPlace(cebu);  
longmanila_id = db.createPlace(manila);  
longpinatubo_id = db.createPlace(pinatubo);  
longsingapore_city_id = db.createPlace(singapore_city);  
longsentosa_id = db.createPlace(sentosa);
```

```

longjakarta_id = db.createPlace(jakarta);
longphuket_id = db.createPlace(phuket);
longkrabi_id = db.createPlace(krabi);
longhaatyai_id = db.createPlace(haatyai);
longkyoto_id = db.createPlace(kyoto);
longbeijing_id = db.createPlace(beijing);
longtaipei_id = db.createPlace(taipei);

Log.d("Place ID: ", String.valueOf(db.getPlaceCount()));

```

```

/* Get all places */

```

```

List<Place>filterPlace = db.getAllPlaces();
for (Place place : filterPlace) {
    Log.d("Place Name: ", place.getTransport());
}

```

```

/* Setting views to be used */

```

```

ImageView img1 = (ImageView) findViewById(R.id.image1);
ImageView img2 = (ImageView) findViewById(R.id.image2);

TextView place1 = (TextView) findViewById(R.id.place1);
TextView place2 = (TextView) findViewById(R.id.place2);
TextView desc1 = (TextView) findViewById(R.id.desc1);
TextView desc2 = (TextView) findViewById(R.id.desc2);

```

```

/*

```

```

* Get all places based on collected data from Preferences

```

```

* (MainActivity.java)

```

```

*/

```



```

List<Place>allPlaceByFilter = db.getAllPlacesByFilter(location, area,
            pack, fbudget, tbudget, time, transport, food);

int count = 0;

for (Place place : allPlaceByFilter) {
    count++;
    Log.d("Place Name: ", place.getName());

    /* Replacing image placeholder */
    intresId = getResources().getIdentifier(place.getImage(),
            "drawable", getPackageName());

    if (count == 1) {
        img1.setImageResource(resId);
        place1.setText(count + ". " + place.getName());
        desc1.setText("Points of Interest: " + place.getDesc());
    } else if (count == 2) {
        img2.setImageResource(resId);
        place2.setText(count + ". " + place.getName());
        desc2.setText("Points of Interest: " + place.getDesc());
    } else {
        break;
    }
}

db.close();
}

```

```

@Override
public boolean onCreateOptionsMenu(Menu menu) {
    /* Inflate the menu; this adds items to the action bar if it is present. */
    getMenuInflater().inflate(R.menu.search_result, menu);
    return true;
}

@Override
public boolean onOptionsItemSelected(MenuItem item) {
    /*
    * Handle action bar item clicks here. The action bar will automatically
    * handle clicks on the Home/Up button, so long as you specify a parent
    * activity in AndroidManifest.xml.
    */
    int id = item.getItemId();
    if (id == R.id.action_settings) {
        return true;
    }
    return super.onOptionsItemSelected(item);
}

/* Send user back to Preferences (MainActivity.java) */
public void tryAgain(View view) {
    Intent intent = new Intent(this, MainActivity.class);
    startActivity(intent);
}
}

```