

**“The Development of foodPedia:
An Android-based Application for Food Trails in Perak”**

By

Fathi Nadirah bt Jamlus

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

MAY 2012

Universiti Teknologi PETRONAS

Bandar Seri Iskandar

31750 Tronoh

Perak Darul Ridzuan

CERTIFICATION OF APPROVAL

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A project dissertation submitted to the
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in partial fulfilment of the requirement for the
BACHELOR OF TECHNOLOGY (Hons)
(BUSINESS INFORMATION SYSTEMS)

Approved by,

(Mr. Khairul Shafee b. Kalid)

UNIVERSITI TEKNOLOGI PETRONAS
TRONOH, PERAK
May 2012

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 references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

FATHI NADIRAH BT JAMLUS

ACKNOWLEDGEMENT

My greatest appreciation to Computer Information Sciences (CIS) Department, Universiti Teknologi PETRONAS for giving me the opportunity to conduct an individual research project related to my programme, Business Information System (BIS). I would like to extend my appreciation towards my Project Supervisor, Mr. Khairul Shafee Kalid for his direction, assistance and guidance throughout the project. Mr. Khairul's advices and recommendations have been valuable to me.

This appreciation also goes to all the people participating in the survey conducted for my research purposes.

Special thanks to my beloved parents for their endless support, providing me with the necessary materials needed throughout the project. My thanks and appreciations also go to my course mates for their support and assistance that contributes to the success of my project. Thanks to everyone that has contributed directly and indirectly to my project.

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ABSTRACT

This study examines the extent of adoption of information communication technology (ICT) in promoting local delicacies owned by SMEs in Food and Beverages in Malaysia. It focuses on an alternative way that can be used to help these SMEs to promote their business using android, the bestselling platform which operates on smartphones and computer tablets. This paper combines and describes how people and technology complement each other for betterment of the industry. Since SMEs cover major portions of the businesses in Malaysia, it makes them one of the major contributing factors which lead towards the economic growth. Android on the other hand is chosen by looking at the positive growth of smartphones market shares and this paper shall explain how does this relates to android to be chosen as the best platform to be used. Interviews and questionnaires are the tools used to acquire the required input and to get user's feedback towards the application developed. The paper will provide detailed discussion on the processes involve throughout the application development and the benefits that the application could provide to the user.

1 INTRODUCTION

In conjunction with Tahun Melawat Perak (TMP) 2012 launched by the state government of Perak early January this year, they targeted the state to be one of the best tourism destination in the world with 5 million visitors this year (Tahun Melawat Perak 2012 Dilancar (2012). <http://www.utusan.com.my/>). The state government is currently doing their best to provide people with the best of Perak by providing them with interesting things to do while visiting Perak. Tourist would normally look for the best place to stay, the best place to visit, the best thing to do and finally look for the best local food to eat.

In order for the state to achieve what had been targeted, the local members would have to give full support to the state's government effort in promoting Perak as well. The Chief Minister of Perak, Datuk Seri Dr. Zambray Abd. Kadir in his speech said that with the launch of the event, Perak is hope to achieve the status of developed state. Since SMEs are believe to be the driving engine of growth, job creation and competitiveness in the market (Blackburn and Athayde, 2000), this project will be focusing on the SMEs but specializing in food and beverages only. It justifies how Tahun Melawat Perak 2012 could be a good opportunity for the SMEs and Perak tourism as well to promote their local delicacies to the people outside Perak.

However, the opportunity would just be an opportunity if it is not being used wisely by the local citizens of Perak. The way and platform they use for their business to be made known by others is also important to attract people. Technology could be the best option to spread the information because of the vast amount of channel it provides which enable information to be transferred fast and efficiently. Thus, in order to determine the best channel of technology to be used is to look at the current emerging trend among the consumers. According to Nielsen Malaysia, the boost in demand for internet-connected devices with expected growth of 75% to 89% by middle 2012, magnifies the consumer's trend (Malaysia Tablet, Smartphone Ownership Rising Sharply. (2011). Retrieved

from <http://www.bintulu.org>). The project to be developed should be the one that comes in line with the current technology used by the market.

1.1 Background of the project

The idea of this project is to come out with an application which operates on internet-connected devices but still able to operate offline. It shall be made available on the android market for user to use. Android is chosen since it is believe to be the most popular mobile operating system (OS) in the next three years which cover up to 50% of the market share (Android will rule the smartphones says Gartner. (2011). <http://www.malaysianwireless.com/2011/04/android-will-rule-the-smartphones-gartner/>).

In support with the Tahun Melawat Perak 2012, the application developed is hope to help the Tourism Perak to promote the local delicacies by providing the list of food spots which at the same time helping the SMEs in Perak. Research had shown that rapid development in technology has brought breakthrough communication methods to the hospitality and tourism industry (Carson, 2008). That is why android is again chosen to be the platform.

The application helps tourist and people outside Perak to locate the best food spots available in Perak main areas. Since this project focuses on the SMEs, it will just provide the list of small restaurants and stalls that is popular among the locals in that particular area. This is because most of the tourists who came will normally go to destination to sample local foods and drink specialties that is recommended by the people in that area which they can get at cheap and reasonable price. The food spots will come together with the details about the place for instance its address, business hours and its specialty, what is the best dish they served.

Since this application is connected to Google, user is able to view the location on map which ease user to be directed to that place. Lastly, user is also welcome to point out any suggestion, comment or even recommend a

new place if say they come across a good food spots that is not listed in the apps.

1.2 Problem Statement

When one travel to Perak and perhaps to other states as well in Malaysia, they shall decide to try on the local food and drinks of the particular area they are at. However, the current application available in the market which works best for instance Yelp and Foodspotting, is applicable to be used in the big countries such as the United States (US). There is a lack of application specifically developed for Malaysian context which serves the same purpose. The application that can be used in Malaysia for instance Foodspotting which happen to be one of the most downloaded apps for food spotting, covers only small number of food spot so users are not given much option to choose from.

Besides, though there are blogs and websites making reviews on the food spots but user often need to view multiple sites for more choice of stalls and restaurant besides having to look out for the required information to reach there. In addition to that, these sites and blogs as well as the current application also require full access to the internet to be used. We know that a device which is connected to the internet would consume more battery than those which is not. Travellers might want to save them for their journey making application which requires access to the internet is not as convenient to be used by some of the people who are on the go.

Other than that, the official current list of food spots in Perak tourism's site lists only the high end or big restaurants where small restaurants and hawkers stalls are not included. Normally these small stalls and restaurant are the one that served the best local food and drinks where it depends on their area. If the area is nearby the sea, then seafood would be the best thing to try.

1.3 Research objectives

The objective of this project is to develop an android-based application which provide the list of food spots in Perak especially for the tourists and people who are not the permanent resident of Perak.

1.3.1 Motivation of Study

The application is expected to be one of the ways to help the small and medium entrepreneur specializing in food and beverages in Perak to promote Perak local delicacies to the international and local tourist coming to Perak. Besides helping these SMEs, this application is also developed to show support towards the government's effort in promoting Perak in conjunction with *Tahun Melawat Perak 2012* launched early this year. It helps Perak tourism to at the same time promote local foods for the tourist coming from outside of Perak to savour.

Besides that, this application also is hope to always provide information whenever needed to the users. This is because it still can be used offline for the users to view the list of food spots in Perak areas throughout their stay. It eases in a way that they need no internet connection to view the list of food spots while going mobile.

1.4 Scope of study

This project focused on four major domains of study. Firstly, it shall be focusing on the SMEs in the services sector. Since statistics shows that this sector is the major contributor towards the economic growth, then this sector is chosen to be the area to focus on. Next, would be the food and beverages industry and the third domain is the tourism industry. As a whole, this project will focus on SMEs specializing in food and beverages and discuss how they could contribute to the tourism industry specifically in Perak with the services they provide.

The last domain will be focusing more on the adoption of technology in helping the two entities mentioned above that is the SMEs and Perak tourism. Technology is to be adopted to keep pace with the current emerging trend among the consumers. Due to that reason, Android is chosen as the platform to be used and this paper shall discuss how this Android-based application can facilitate Perak tourism as well as the SMEs to promote what food and drinks that they served the best to the tourists visiting Perak.

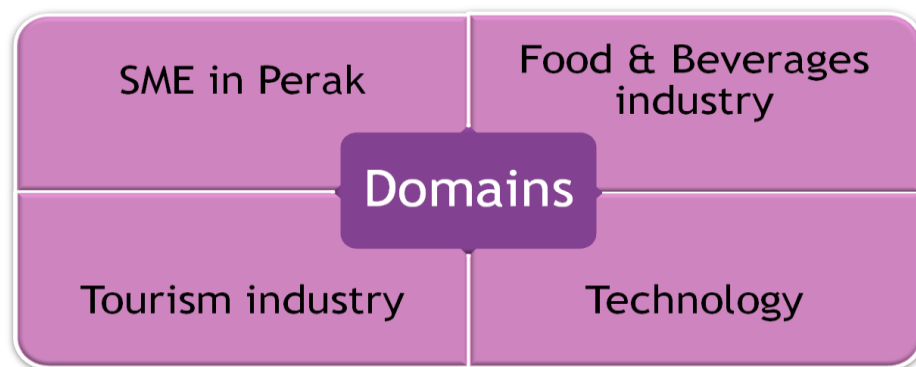


Figure 1.4: Scope of study

2 LITERATURE REVIEW

2.1 Small and medium enterprise (SME)

Small and medium enterprises (SME) can be classified as a major contributor towards the country's economic growth as despite creating vast amount of job opportunities, it also contribute towards the country's innovativeness and enhancement of productivity (Blackburn and Athayde,2000). They had been the backbone of economic growth of an economy in driving the development of the industry (M. Aris, Normah,2007). This just not only applies in Malaysia but to other developed country as well for instance the US that is currently facing the problem of high unemployment rate that is 9.1% on September (Bureau of Labor Statistics, 2011). The blooming of SME in US helps in terms of their economic survival as each day about fifty (50) new SMEs were establish in their country. With the country's total population of 28 million people, it is impossible for the citizens to just rely on the private companies for employment and that is when SMEs come into action as these companies provide a wide range of opportunities for its citizens from the one that involve in technical, non-technical and professional sectors.

2.1.1 Definition of SME

There are many ways that people would define the SMEs. As for Malaysia, to see if a business would fall under SME they will look into two main criteria; (1) number of people a business employs and (2) total sales or revenue generated by a business in a year. A business is classified as SME if its annual sales turnover is not more than RM25 million and having less than 150 full time employees (www.smeinfo.com.my, 2011). Differs from other country take for instance in UK, SME would be classified based on other different criteria. A business will fall under the category of SME if its annual sales turnover is less than £25.9 million and having less than 250 full time employees (sections 382 and 65 of the Companies Act,UK, 2006). Thus there is actually no specific definition on how can we define the SME either nationally or internationally as there are several factors included as well in

determining the characteristics of a SME especially when it involves different regions for instance the economic growth and the exchange rate.

2.1.2 Statistics of SMEs in Malaysia

The numbers of SMEs worldwide are increasing and the number keeps on blooming each day. As for Malaysia, in the year 2005, SMEs account for 98.8% of the total enterprises which contributed 25.6% of the total manufacturing output, 25.9% to value-added production and covers 31.1% of the total country's workforce (SMIDEC, 2006). As the country's keep on developing each year, the number is expected to be higher by the year 2011 as SMEs are another crucial financial business support to the government and many of the multinational organisations which then contribute to the country's economic development. The same scenario was faced by UK in 2008 where the majority of their workforces were employed by SMEs where out of the 4.8 million businesses in UK, 99.9% were SMEs (Small and Medium Sized Enterprise Statistics for the UK and Regions 2008, 2009).

There are basically three (3) main key economic sectors of SME in Malaysia namely, services, manufacturing and agriculture. Most of the SMEs predominate in the services sector accounting 87% of the total establishments followed by manufacturing and agriculture which contributes 7% and 6% respectively. By looking at the percentage covers by the services sector, it clearly shows that this sector contributes the most towards the country's productivity as it provide the biggest number of job employment for the people. This statement is clearly proven by the statistics where it is shown that the services sector employed the largest number of workers, 2.2 million, followed by the manufacturing sector, 740,438 and agriculture sector, 131,130 (M.Aris, Normah, 2011).

The services sector can be divided into several sub-sectors that are retail, restaurants, wholesale, other services, transport & communications,

finance, professional, real estate activities as well as business management and consultancy. The major type of business that these SMEs were in would be retails (46%) and restaurants (14%) whereas other sub sectors cover less than 10% of the total SMEs in the services sector. In this paper, we shall focus on SMEs that are in the restaurant sub-sector that includes cafes, coffee shops, hawkers and stall which accounted for 85.1 percent of the total output from the restaurant services. Since this sector contributes large number of output to the services industry, it is crucial for these SMEs to stay alert and look out for opportunities to enable their business to be more competitive which then lead towards faster and efficient growth of the economy.

2.1.3 Tahun Melawat Perak (TMP) 2012

In this paper, the area that will be focused on would be a state which is located at the central region of Malaysia, Perak. Perak is selected since 2012 is the year chosen to be the *Tahun Melawat Perak* (TMP), launched by its Minister, Datuk Seri Dr. Zambry Abd. Kadir, early this year (<http://www.utusan.com.my>, 2012). TMP is hope to bring prosper to the state by helping in terms of the growth in economy besides aiming to be one of the best tourism destination in the world. In addition to that, in conjunction with the TMP, as part of its strategy, Perak is divided into 6 main clusters comprises of its main districts which are Ipoh (Gopeng, Batu Gajah, Kampar), Taiping (Matang, Kuala Gula, Kuala Sepetang, Larut), Kuala Kangsar (Sungai Siput), Royal Belum (Lenggong), Pulau Pangkor (Lumut) and lastly Teluk Intan (Kampung Gajah, Perak Tengah) (<http://www.manjung2u.com/ikon-pelancongan-perak/>). Each of these clusters is expected by the state government to show and bring in their identity to people outside Perak, showing what's the best they have. The word 'best' would include the places, activities and dishes they served. Since this paper concentrates on food and beverages industry then it will just be focusing on the best dishes served in Perak.

2.1.4 Smartphones and tablets market

As the world is moving toward the era of IT, technology is no longer wants but had been considered as a need to people. Due to this reason,

technology adoption is then one of the best ways that can be used to help to promote the local delicacies prepared by the SMEs in Perak. The world nowadays is moving towards the type of technology that is mobile and offer number of functionalities to the users. The more good it offers, the better it is. Back then, the internet used to be a luxury to people but now the internet-connected devices is becoming an essential tool to the Malaysians. Nielsen Malaysia had predicted growth for tablet and smartphone market in the country to reach 75% and 89% respectively by middle of 2012 (BTU Weekly,2011). By looking at the opportunity, it triggers more companies to venture into the smartphones market. For instance, ZTE Corporation, a leading global provider of telecommunications equipment and network solutions, had come out with their strategic plan to develop the low to middle-end smartphone market to make it more affordable for Malaysian to enjoy using smartphone as well (<http://biz.thestar.com.my>, n.d).

Besides that, latest report prepared by Nielsen 2012 Smartphone Insights also had stated that Malaysia smartphone penetration rate is at 27% in 1Q of 2012, of which more than a third (36%) are aged 25 to 34. They surveyed more than 35,000 mobile users in 23 countries and the result shows that those who plan to upgrade their phones in the next six months, 79% of them plan to buy a smartphone (E. Laine Wong, 2012). This proves as time flies, smartphones market in getting bigger and bigger. As for IT businesses, this could be a good opportunity for them to think on a business related to smartphones which can be used as complement or be made useful on their smartphones for them to use.

There is no standard definition for smartphone and there are many ways that people define what smartphones really are. Smartphones are known as devices that no longer use to make only phone calls but they offer Web access, wide range of applications and equipped with other technological advances. They are considered handheld mini-computers, where they allow individuals and businesses to stay connected while travelling (Campbell,J).

Besides that, smartphone is also known as a device which operates on operating system (OS) that allows it to run applications for instance Apple's iPhone runs the iOS and some other devices run Google's Android OS (Cassavoy,L, 2012). Apart from that, some agrees that smartphone is considered to be the combination of the traditional PDA and cellular phone (Beal,V, 2010). It integrates mobile phone capabilities with the common features of a handheld computer or PDA. In addition to that, it allows users to store information, e-mail and install programs, besides using the mobile phone for the normal use in just one device.

Looking at the emerging trend of technology among the consumers, smartphones had created itself a big market as there are many types of smartphones available for the consumers. The incredible success of these little pocket computers means that more new and improved ones are coming out as time passes. iPhone and Android based devices are the current two most popular types of smartphones around (Retrieved from <http://www.smartphonebasics.com/>). iPhone is produced by Apple operating on iOS but the Android business model is a bit different in that. It is an operating system owned by Google which means other phone firms can use it as the system for their own phones. Thus, there is far more different type of phones running on this operating system than on the Apple one.

2.1.5 Android as leading mobile operating system

According to the world's leading IT research and advisory company, Gartner, by looking at the current trend, Android will be the most popular mobile OS in the next four years in 2015 capture almost 50% of the total market share. Meanwhile Windows Phone will catch up and overtake the 2nd place from iOS by 2015 with 20% market share (<http://www.malaysianwireless.com/>). The figure below illustrates the forecast made by Gartner.

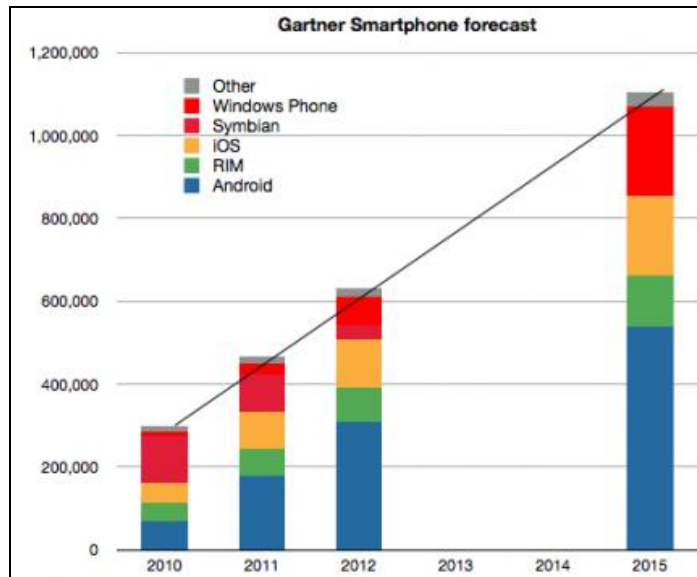


Figure 2.0: Gartner smartphone forecast

Android is expected to lead the market mainly due the fact that many smartphones available in the market is made compatible to operate on Android as to be compared with Apple devices which operates only on iOS. That is why the usage of Android based devices outnumbers other type of operating systems available. Till now, Android had powers millions of phones, tablets, and other devices where it brings the power of Google into our hands (<http://www.android.com>, 2012).

The statistics given out by Gartner, is further supported by the International Data Corporation (IDC), Worldwide Quarterly Mobile Phone Tracker, where they reported that smartphones powered by Android and iOS mobile operating systems accounted for more than eight out of ten smartphones shipped in the first quarter of 2012 (1Q12). In addition to that, these operating systems held shares of 59.0% and 23.0% respectively of the total 152.3 million smartphones shipped in 1Q12. During the first quarter of 2011, the two operating systems held a combined share of 54.4% (IDC Worldwide Mobile Phone Tracker, 2012). Based from the given figures, it clearly shows how Android currently becoming the overall leader among the mobile operating systems, where they account for more than half of all smartphone shipments.

Apart from IDC and Gartner, the study conducted by Nielsen 2012 gives further support to the statistics reported by them. Based from the research conducted, Android gains the highest vote that is 55% among the teenage users. That is not all, Android also accounts for more than half that is 52% of all smartphones bought in Malaysia within the last six months (Nielsen Smartphone Insights, 2012). The Global Executive Director of Nielsen's Telecom Practice, Hanis Harun, told that the stronger brands in Asia such as Samsung and HTC also contributes towards number of votes as these devices operates on Android. Other than just looking at the brand that is available and the price it offers, the study also found one of the factors that affect the choice of 35% of the smartphone users to choose to buy the smartphone they own, that is because of the wide range of application available for them to use.

2.1.6 Mobile applications in the market

Android offers numbers of applications which include one that the user can get for free or the one that need to be paid. Up to now, there are almost 500,000 applications available to be downloaded and can be used instantly by the user (<https://play.google.com/>, 2012). According to the official site for android, more than 2.4 billion of apps are downloaded by the user in Quarter 3 (Q3) last year (<http://www.android.com>, 2012). In addition to that, when an application is made available on the android market, the application is made visible to user in more than 130 countries. However, because of the huge number of application available now, it is very critical for the developers to develop an app that could really provide content to the user. Thus, mobile application developer is advised to choose wisely the types of apps they wish to produce. The Global Executive Director of Nielsen's Telecom Practice, Hanis Harun, had stated that the kind of application that get better response from the user would be the apps which centred on social network, location-based and games (Nielsen Smartphone Insights, 2012). Social context is believed to be the key for them to highlight in thinking of developing an apps.

Social network application would be the type of apps which enable the user to stay connected with people around the globe. Most of the time, it has to do with the stylishness with which allows the users to establish the communication in their network (Candice, L, 2012). Some popular example of social network apps would be Facebook and Twitter. User is able to update their status to let their acquaintance know what they are up to. Location-based application on the other hand is an informative type of application where it provides information to the user using the information on the geographical position of the mobile device they have. It enables the user to locate for instance the nearest shops, food spots or just any other desired places based from the user's whereabouts (en.wikipedia.org, 2012). It is completely useful especially when user go for travel.

2.1.7 Popular applications on food spotting

There are currently quiet a number of food-based application available in the market to search for food spots. Some of the most popular applications that serve this purpose are known as Yelp, Foodspotting, Zagat and UrbanSpoon (Gera, 2011). Yelp is said to be the best application among all as it provides numbers of restaurant reviews for the user to decide which one to go besides helping them to search for food spots quickly without much fuss. In addition to that, one of the distinct features it has is user is able to find a restaurant with reference to their GPS system where user just have to insert their coordinates and let the application do the work. Besides being free, most of these applications are available for most devices, including Android, iPhone and Blackberry. According to Gera, the application besides helping the user to search for the best possible dishes around the city, it also allows user to share pictures of their favourite meal with an active community of users making it more interactive. Some of the applications also enable users to read reviews, price searching and comparing as well as to view ratings for a huge number of restaurants. Apart from that, a paid app on the other hand would normally serves additional features like table reservations, browsing through the menus and to get tips on dishes.

However, other review site suggests other applications that are highly rated by users which is not included in the list suggested by Gera. The most highly rated apps recommended in the review made are known as Restaurant Finder, Food Finder and Good Food Near You (Phelps,T, 2011). These are free apps available in the android market that also can be used to search for nearby food stops. Some of these applications provide a number of restaurant categories which user can click on for specific recommendations within the category. For instance buffets, Asian, steakhouses and several other categories. Besides, like the applications recommended by Gera, these applications tie into the navigation map as well which provide user with the right path to go.

2.1.8 Advantages and disadvantages of Android

Android is chosen as the platform to be used because of numbers of advantages it has to be compared with other operating system. The biggest advantage of Android is it is an open platform which means any developers can design just any type of application for free and then make them available to be loaded on the Android system. Besides that, user with Android-based devices can simply download and install several free programs and applications available in the Android Market (<http://syahrulsyaputra.com>, 2012). In fact, currently there are almost 500,000 different applications available for the Android users.

Besides, user can also run various applications at once (<http://dandroidtabletpc.com>, 2012). For instance users can run a Facebook application while listening to music or open an incoming message. Apart from the application it offers, users also being given the freedom to choose from various options of mobile phones as there are many manufacturers choose to develop devices which operate on Android. The more good, ease or excitement it could give to the user, the higher its possibility to be used by them.

However, despite all the advantages of the Android operating system, this system also has shortcomings. One of the drawbacks by using this operating system is that users will often get ads that are displayed when they use the applications. Most of the ads may be unnecessary and users often get annoyed if it kept popping out on the screen. Apart from that, Android being an open source, it means anybody and everybody can create an apps. This poses a major threat to security. Since there are thousands of apps available in the Android app market, some of these apps might contain loopholes which could be an opportunity for hackers to penetrate and steal information from the device.

Besides that, Android might also require frequent and to keep it updated, user have to do rooting which is normally known as jail breaking in iPhone. A small error can bring down the entire processes in the device. Another biggest drawback which not only faced by Android but to all technology is that people become over dependent on it. The OS and numbers of apps installed enable user to do almost all work that can be done using their mobile device. However, the health hazard associated with using such devices is the main concern that should not be taken lightly by the users.

Despite all the shortcomings that Android might bring to the user, the advantage it brings still outnumber its disadvantages making it still the most preferable OS among the consumers. Due to this reason, Android is again chosen to be the platform to help SMEs in promoting their local delicacies. Looking at the opportunity it offers in today's market, it would be such a waste if it is not grabbed and being use wisely. Android since currently it holds the major portion of smartphone market share then it would be easier for an application to reach the people as it is made visible to the major portions of the total market.

2.2 Related works

2.2.1 Local travelling websites and blogs

There are many review sites and blogs applicable to be used in the Malaysian context for travellers in Malaysia to search for good food. Some of the popular sites and blogs available for travellers to look out for a complete travelling experience are known as the TripAdvisor, lonely planet, Vkeong.com and Motormouth from Ipoh. Some of them provide complete information for travellers when they travel to Malaysia while some focused only on popular food spots. Information includes interesting destinations, things to do, where to eat and even where to shop.

Websites like TripAdvisor and lonely planet is more like a directory for the users who travel as users are able to get almost all the information they need when they reach a particular destination in Malaysia. Users can just choose the place they are at or wish to go to view the information needed. Besides providing information and suggestion to the users, these sites even give opportunity for them to give reviews, share pictures and videos as well as to rate the place and activities recommended by the site. The TripAdvisor is even linked to the user's Twitter and Facebook account where it enables the user to view their friends whom had been to that particular place and view their comments. All of these activities would make the websites more interactive as the source of the information provided to the users not only came from the site itself but the users as well could contribute in providing the information for the others.

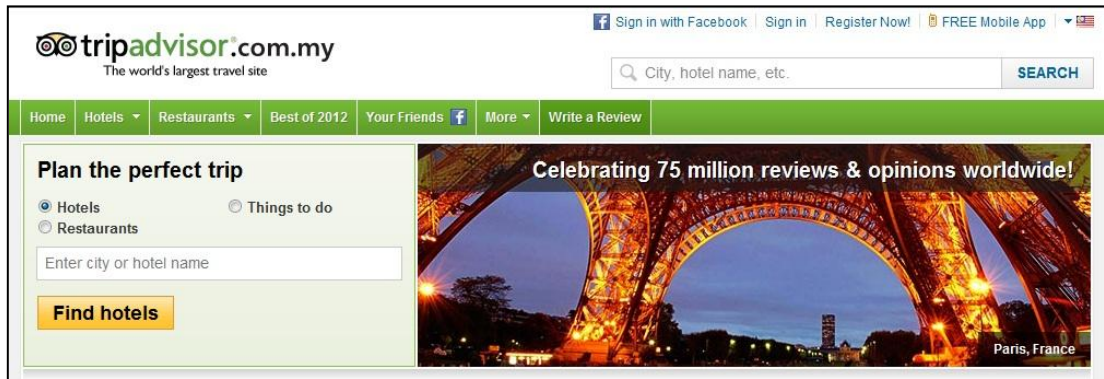


Figure 2.2.1.1: TripAdvisor.com

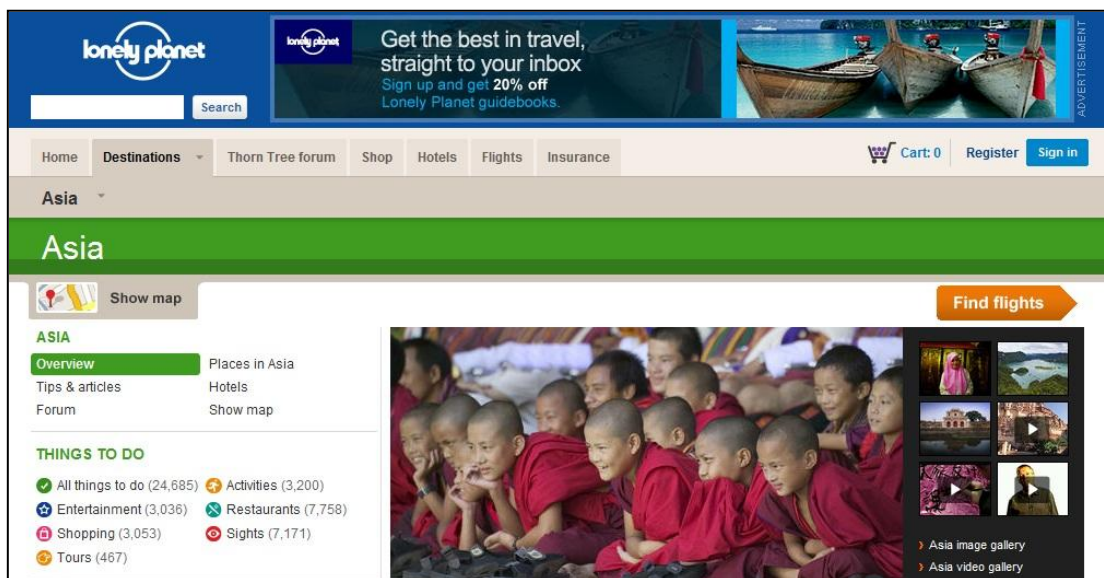


Figure 2.2.1.2: lonelyplanet.com

Differ from the two sites, Vkeong.com and Motormouth from Ipoh focuses only travellers whose passion is to travel just to search for good food. These two sites list popular food spots available in Malaysia besides providing information and reviews about these places. Viewers are also welcome to comment and also provide review about that particular place. However, unlike the two sites mentioned earlier, users are not able to share pictures, videos and rate the place. In terms of social network, users with Facebook account can simply click on the ‘like’ icon to like the place and see others who like the place as well.



Figure 2.2.1.3: Motormouth from Ipoh



Figure 2.2.1.4: Vkeong.com

2.2.2 Mobile applications for food hunting

Apart from websites and review blogs, TripAdvisor also do have its own mobile application which can be downloaded for users who are on mobile. Since TripAdvisor is a popular site visited by travellers, so do its mobile application. The information it provides would be similar with the one provided on the site. The database of travel information included in TripAdvisor is very impressive, and there's plenty of information relating to each business. This includes addresses and telephone numbers, as well as information of how to get there. It even has forum section for users to share reviews, comment and query others about the place they went to.

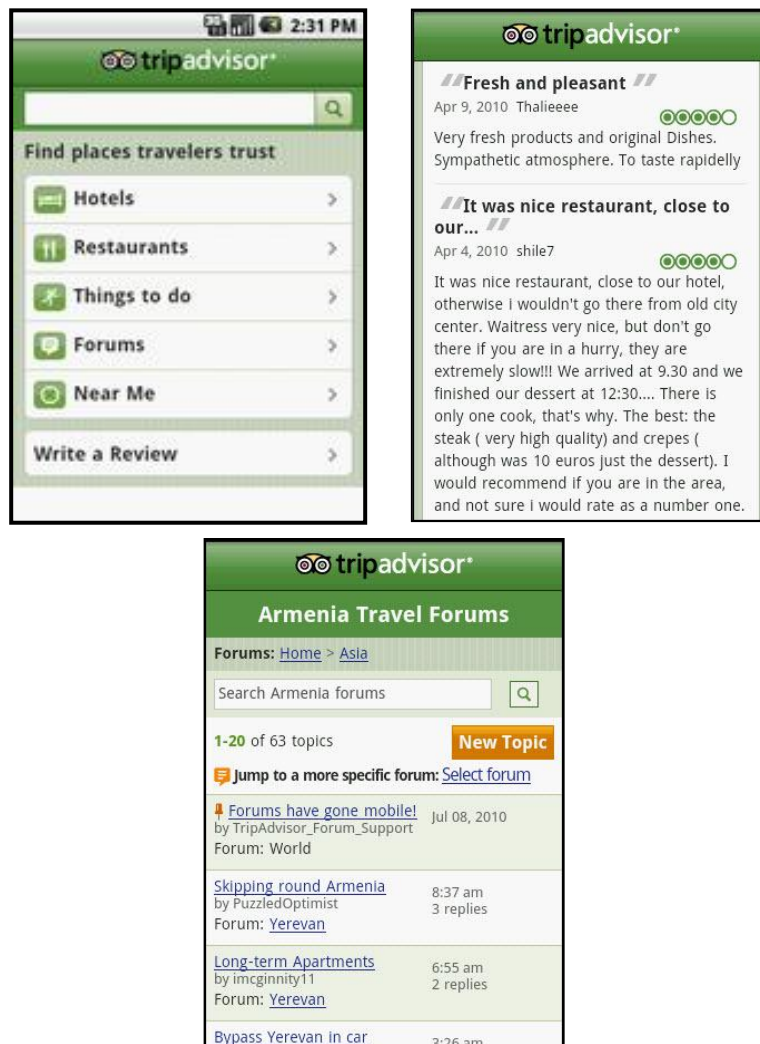


Figure 2.2.2.1: TripAdvisor android application

Other top downloaded food hunting applications are known as Yelp and Foodspotting. Foodspotting is a location-based application that allows users to take pictures of the food that they are eating, give a quick review, and post it to Foodspotting for others to view and comment on. Both of these apps provide the list of food trails in a particular area besides able to suggest the best food spots and also those nearby the user. They also provide information like address, menus and price for the users to view. Users are also welcomed to give ratings to these food spots besides giving out reviews. These two applications also provide map for the user to view the location.

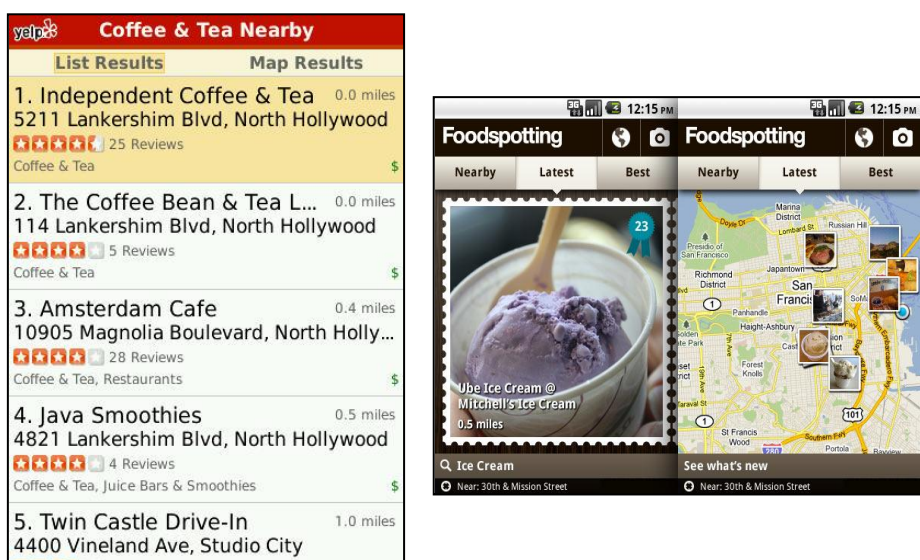


Figure 2.2.2.2: Foodspotting and Yelp

2.2.3 Comparison between the foodPedia and the current related sites and application

One of the major differences between foodPedia with TripAdvisor site and lonely planet is that both sites act more like a directory which packed everything into that one site. Too much information provided may not be good for those who went travel just for food as some of the information provided may not be necessary. However, like Motormouth from Ipoh and Vkeong.com, foodPedia is more personalised for users who wish to look for only good food.

Other than that, one of the findings acquired is that the current review blogs mentioned above like Vkeong.com provides list of food spots depending on the background of the reviewers themselves. This is because, if the reviewers happened to be a Chinese, then their blogs shall list only the non-muslim food and if the reviewers are muslims then foods for the non-muslim are hardly to be found in the blogs. However, Motormouth from Ipoh is different as it comprises both the muslims and non-muslims food. Another good thing about the blog is that it covers almost areas in Perak which then provide more options and flexibility for the users to choose according to the place they are at. However, it would be better if the food in all the sites, blogs and mobile applications is categorized as well as further flexibility could be given to the user besides making them easier to look for the type of food they want. Categorizing will make the information to be more organized and increase its visibility to the users.

foodPedia on the other hand includes all type of food available in Perak for both the muslims and non-muslims. Besides that, the food spots are also categorized according to the area they are at and also according to the category of food they served. This will make the information provided to be more organized and will ease the user in searching for the type of food they wish for.

Besides that, since this application is connected to Google, users are also able to share pictures and write reviews about the place they visited on the web which means users are not just sharing them among the application's users but also with the all Google users. Users are also welcomed to email any comments and suggestion for further improvement and keep the admin informed on any new food spots which are not included in the application. However, unlike TripAdvisor and lonely Planet, foodPedia application is not connected to the social network account like Twitter and Facebook.

Like TripAdvisor site, Yelp and lonely planet, foodPedia enable user whose device is connected to the internet to directly view the place on

map. However, with Motormouth from Ipoh and Vkeong.com, users are not able to do so. They would have to manually search for that particular place on the Google map. It is also said that TripAdvisor mobile application does not provide native support for maps and directions as TripAdvisor will prompt user to launch an external app such as Google Maps or Radar. External app in this case would be similar to foodPedia. The user interface is also claimed to be clunky and icons to be clicked are too small for comfort (<http://tripadvisor.en.softonic.com/android>, 2012).

Though the mobile applications like Yelp and Foodspotting provide good information and functionality to the users, one of its major drawbacks is that they is not so much applicable to be used in Malaysia. They work best and cover areas in the European countries like the United Kingdom (US), Canada, France and Germany. Malaysian users might end up getting nothing from their search. As for Foodspotting, it is said that the location it provides is not always accurate (<http://foodspotting-iphone.en.softonic.com>, 2011). Unlike them, travellers in Malaysia specifically those who travels to Perak can totally rely on foodPedia application to view the list of good food in this state. It is totally a good opportunity for the application to enter the market.

The most important thing about foodPedia is that it is able to serve its purpose that is to provide the list of food spots in Perak to travellers while they are offline. Without the internet connection, they can still view the locations and get the details of the location on the go. Unlike all the websites, blogs and some of the applications like Foodspotting, they would require the device or the users to have full access to the internet in order for them to view the location. It is thus not so convenient for users who went mobile yet still want to look out for these good spots. Besides, accessing to the internet on devices like tablets and smartphones would consume more battery than those that is not. So travellers might consider saving up their battery for the journey.

Figure below summarizes the difference between foodPedia and other blogs, websites and food spotting mobile applications.

	foodPedia	Blogs		Websites	
		vkeong.com	Motormouth from Ipoh	tripadvisor	lonely planet
Personalization	More personalised for users who wish to look for only good food	personalised for users who look for only good food	personalised for users who look for only good food	more like a directory	more like a directory
Type of food available	Includes both the muslims and non-muslims food	List of food spots depend on the background of the reviewers	Includes both the muslims and non-muslims food	List of food spots depend on the background of the reviewers	List of food spots depend on the background of the reviewers
Food category	Food are categorized	Food are not categorized	Food are not categorized	Food are not categorized	Food are not categorized
Map	Can be viewed on map	Can be viewed on map	Can be viewed on map	Can be viewed on map	Can be viewed on map
Areas	Cover areas in Perak only	Cover areas in Malaysia	Cover areas in Malaysia	Covers all areas in and outside of Malaysia	Covers all areas in and outside of Malaysia
Internet access	Able to provide the list of food spots without the internet access	Require full access to internet	Require full access to internet	Require full access to internet	Require full access to internet
Social network	Not connected to social network account	Connected to social network account	Connected to social network account	Connected to social network account	Connected to social network account

Figure 2.2.3.1: Comparison with Blogs and Websites

	foodPedia	Mobile applications		
		tripadvisor	Foodspotting	Yelp
Personalization	More personalised for users who wish to look for only good food	More personalised for users who wish to look for only good food	More personalised for users who wish to look for only good food	More personalised for users who wish to look for only good food
Type of food available	Includes both the muslims and non-muslims food	Includes both the muslims and non-muslims food	Includes both the muslims and non-muslims food	Includes both the muslims and non-muslims food
Food category	Food are categorized	Food are not categorized	Food are not categorized	Food are not categorized
Map	Can be viewed on map	Can be viewed on map	Can be viewed on map	Can be viewed on map
Areas	Cover areas in Perak only	Work best and cover areas in the European countries	Cover Malaysia but work best in the European countries	Work best and cover areas in the European countries
Internet access	Able to provide the list of food spots without the internet access	Cannot operate without the access to the internet	Can operate without the access to the internet	Cannot operate without the access to the internet
Social network	Not connected to social network account	Connected to social network account	Connected to social network account	Connected to social network account

Figure 2.2.3.2: Comparison with other Mobile Applications

3 METHODOLOGY

This part discusses the research methodology, research flow diagram and the project activities and also its feasibility.

3.1 RESEARCH FLOW DIAGRAM

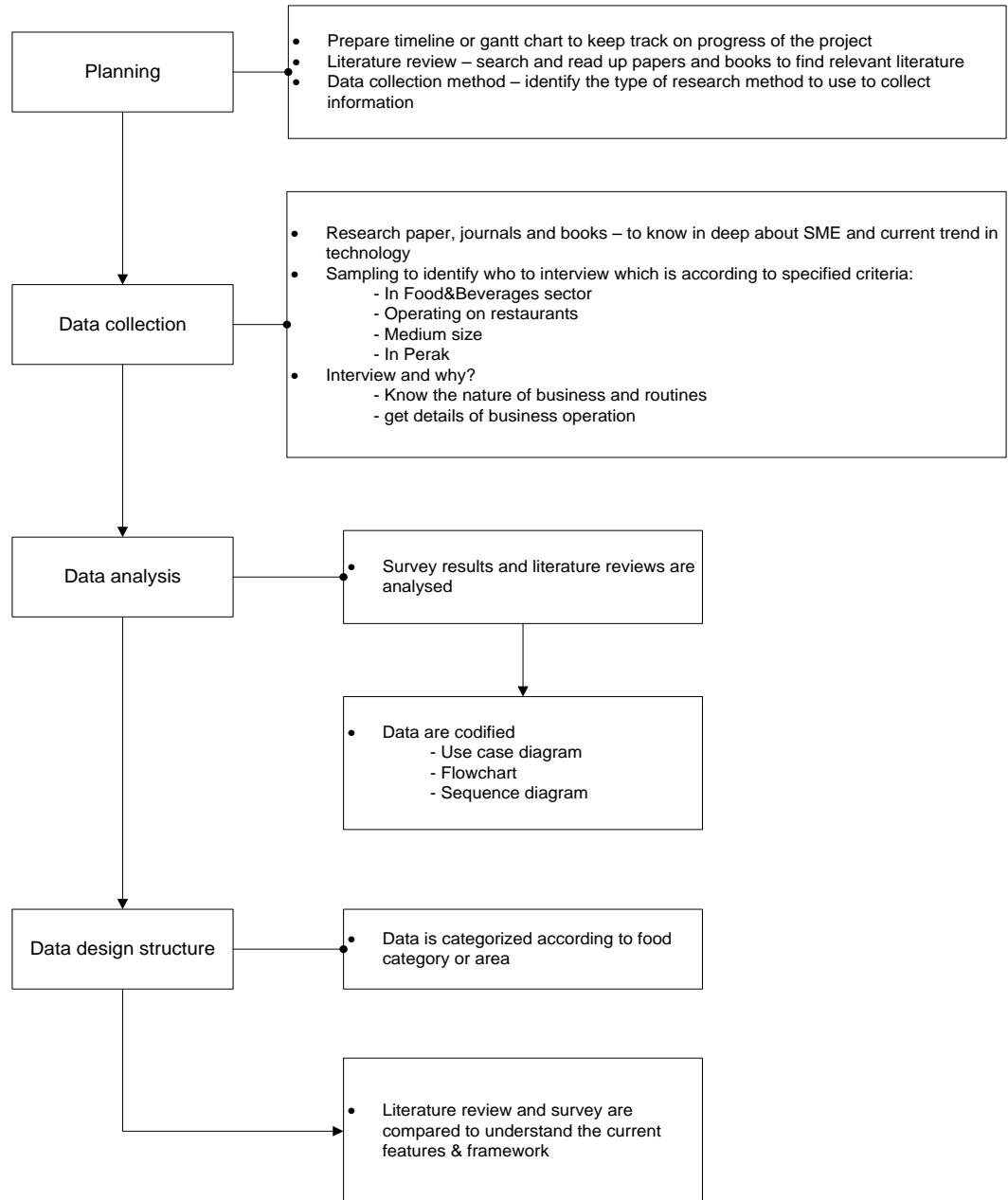


Figure 3.1: Research flow diagram

3.2 RESEARCH METHODOLOGY

Rapid application development (RAD) is the software development methodology used in this project. It shall involve methods like iterative development and software prototyping. According to Whitten (2004), it actually merges various structured techniques, especially data-driven information engineering with prototyping techniques that is able to accelerate a system development.

In RAD, structured techniques and prototyping are especially used to define users' requirements in order to design the final system. After the requirements are defined, they will be verified using prototyping in the design phase. These stages are repeated iteratively. RAD approaches may entail compromise in functionality and performance because it allows users to continue to participate by suggesting changes or improvements and to do testing as well as the application gone through the development process until the application is completed (Retrieved from <http://en.wikipedia.org>).

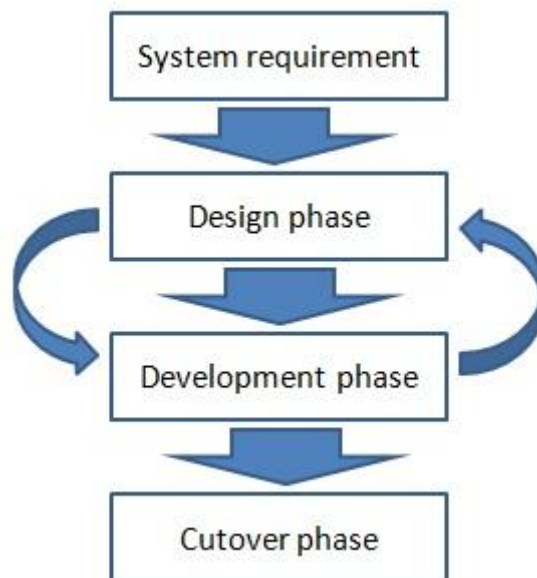


Figure 3.2: Rapid Application Development (RAD)

3.3 FEASIBILITY STUDY

3.3.1 Operational Feasibility

The food spot android application developed to be used by the SME owner is proposed when realizing that these businesses is still lacking of competency though it contributes large portions of the nation's total productivity. Taking the opportunity that there is no application available for Malaysian to use to spot local food spots which ease people specially those who travel, the application could then be a good start and to show how can it gives value to the SMEs as well. This is because the current official list of food spots available lists only the big known restaurant but seldom the SMEs operating the small restaurant and stalls.

The application enables the users of Android-based mobile device to spot local food stalls and restaurant in Perak area in support with the *Tahun Melawat Perak* this year. Users are given the flexibility to choose the mode of search that is either to search according to the area they are at or according to the food category. The application will suggest the possible nearby food spots together with the details of the business, so people don't have to open up multiple sites and blogs to search for good food in Perak. With just a single application, user can get the type of food they wish for and be directed to the stalls and restaurant they want to go.

3.3.2 Technology & System Feasibility

The application is to be developed using open source platform for Android operating system that will be customized to meet the required and desired functionalities. There are many Android platforms available and some does not require sophisticated line of programming codes to be developed. Thus, it will be easier and simpler to be developed but still, it shall depend on the function that the application is expected to do. The interfaces and functions it performed will all be using the Android platform itself and no

background server is needed for the application to perform its function. This is because if the details in the application are to be updated, the apps developer will be informed by the user instead of they update it themselves. Details to be updated are for instance suggestion for new food destination together with its details.

3.3.3 Schedule Feasibility

The planning and designing phase is expected to be completed during the first and second semester of study. The development of the system shall start at the middle of the second semester and to be completed desirably at the end of the final semester of study. The project is targeted to be completed within one year starting from the beginning of the semester that is on September and ends on the next coming September. Since the system is going to be simple and serve basic operational needs of the SMEs, one semester should be sufficient to complete on developing the application and is able to perform its expected functionality.

3.4 PROJECT ACTIVITIES

3.4.1 Discussion

Discussion is to be conducted with the supervisor especially during the beginning of the semester to make things clear on how the project would be to ensure that the project is on the right track. Supervisor shall advice on the relevant activities that should be taken throughout the project development. Based from the expertise possess by the supervisor, they would probably provide suggestion for enhancement of the project whenever possible.

3.4.2 Data collection

Literature review is made to understand the current market trend among the consumers especially in technological industry to know in depth the customer's preferences so that the project shall fit in the market. Besides, the research is also made to identify the type of target group to be chosen as one of the project domains and analysis is made to justify the reason why that particular group of people which in this paper, the SMEs, are chosen.

Literature review made will also be use to study the features besides to compare and contrast the current application or other information sources relates to the food and beverage sector. Some could be adopted in this project while some could on the other hand be improvised.

Apart from that, survey would also be one of the tools used which focuses more on the current access of information for people to search for local food spots in Malaysia and to understand their feedback towards them. The current accesses available are for instance the review sites and applications which run on mobile devices.

3.4.3 Data analysis

The type of analysis for the survey would be classified as quantitative type of data analysis. Most of the questions are statistical making the results of the survey quantifiable. The results will be converted into statistics which shall be analysed to give the view of the performance of the current access of information based from the feedback acquired from the respondents.

3.4.4 Design

The findings from the literature review made and survey distributed are assessed and compare to understand the framework of the current applications available and how do these applications and other information sources benefits them when it comes to searching for good food. Besides, the reviews acquired from the user and respondents will be used to determine the features to be improved and features to be adopted. This application, foodPedia, is expected to provide user the flexibility to choose, view and provide them the option to as well recommend new food spot to go.

Figures below illustrate the use case diagrams, sequence diagram and the system architecture for foodPedia.

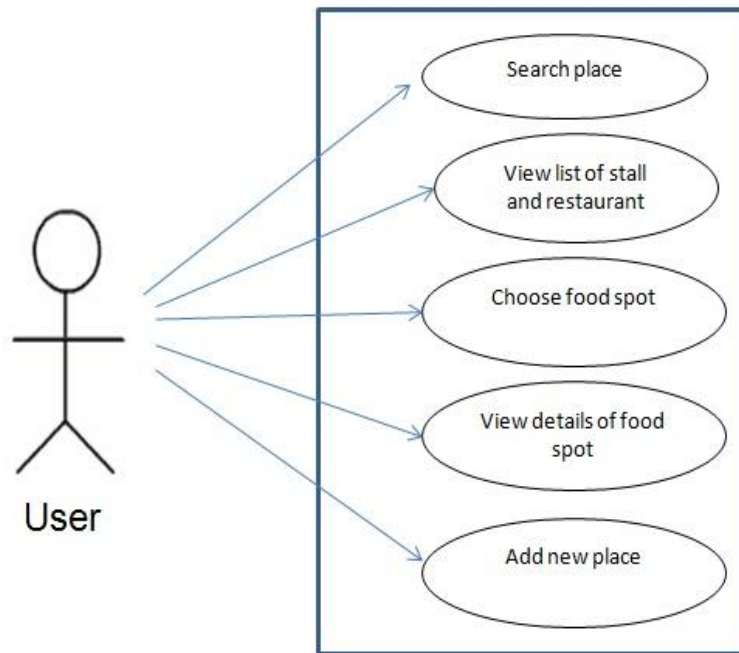


Figure 3.4.4.1: Use case diagram for foodPedia

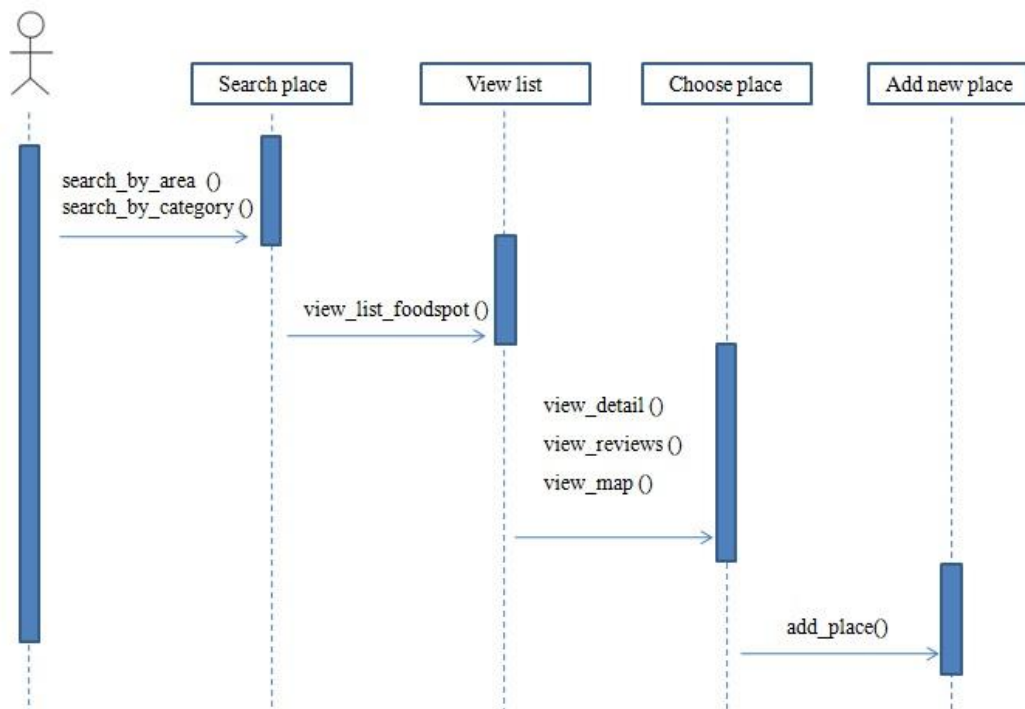


Figure 3.4.4.2: Sequence diagram for foodPedia

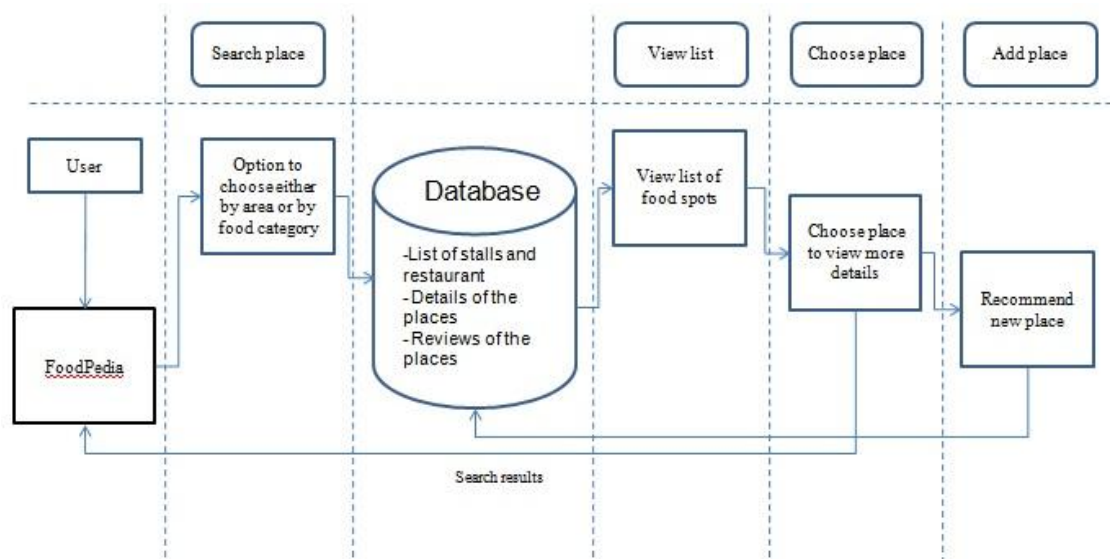


Figure 3.4.4.3: System architecture for foodPedia

3.5 GANTT CHART

Gantt chart is prepared to plan the actions for the project development that should be done throughout the development process. It is also prepared so that it is easy to keep track on the progress of the project to ensure that the project is able to be completed within the specified time allocated. The gantt chart attached applies for Final Year Project 2 only. Please refer to **Appendix 1**.

3.6 TOOLS

3.6.1 Tools used (Software)

- 1) Google AppInventor (Beta Version developed by Google Inc but now maintained by Massachusetts Institute of Technology)
- 2) Illumination Software (Linux Kernel Version 1.67)
- 3) Microsoft Office 2010
 - a. Microsoft Visio 2007

- 4) Android Software Development Kit (SDK)
- 5) Google Mail (gmail) – for survey purposes
- 6) Windows 7 Home Basic Operating System

3.6.2 Tools used (Hardware)

- 1) Sony VAIO E Series
- 2) Samsung Galaxy Tab 10.1 (HoneyComb 3.0)
- 3) Samsung Galaxy Ace

4 RESULT & DISCUSSION

This section shall discuss the findings from the survey conducted based from the response acquired from the respondents. Apart from that, the interfaces for the prototype will be illustrated in this section as well.

4.1 Survey analysis

This survey aims to understand the current available access of information for user to look for local food spots and what they think about the sources for instance is it the information provided sufficient and really help them searching for the food spots.

The questionnaire is divided into 2 sections and there were 20 respondents participated in the survey research. The findings from the survey conducted are as follows:

Section 1: Background of respondents

The purpose of this section is to understand the background of the respondents who participated in the survey. Most of the respondents participated in this survey is at the range of age 18 to 33 years old. As according to Nielsen 2012, the current market of smartphones is dominated by people at the age of 24 to 35 years old. This figure shall support the development of this application as this group of people is targeted to be the major group of user for this app. The major group of people who responded are students followed by those from the industry working in the private or government sector.

Section 2: Access to information/ Akses kepada maklumat

The objective of this set of question is to understand the current access of information among the respondents when they travel to search for popular food spots and their opinion on the current information sources.

Most of the respondents which cover 50% of the total people who responded choose to refer to websites when they travel to search for popular local food spots. This is followed by blogs, internet based application and locals which

covers 20%, 15% and 15% respectively. The major portions of the total respondents who choose to use the internet to search for the places are at the age of 18 to 33 years old which again be the focus as the main target group to be using the application whereby those with the age above would prefer the conventional way of seeking that is to ask from the locals.

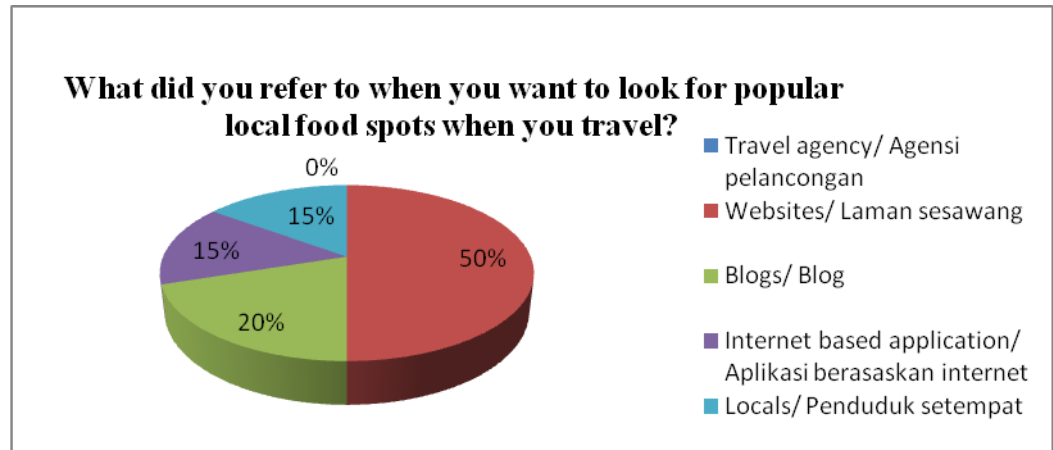


Figure 4.1.1: Travel reference

The usage of internet based application is low since most of the respondents which makes up a total of 75% have never heard about food-based application which provide the list of food spots before.

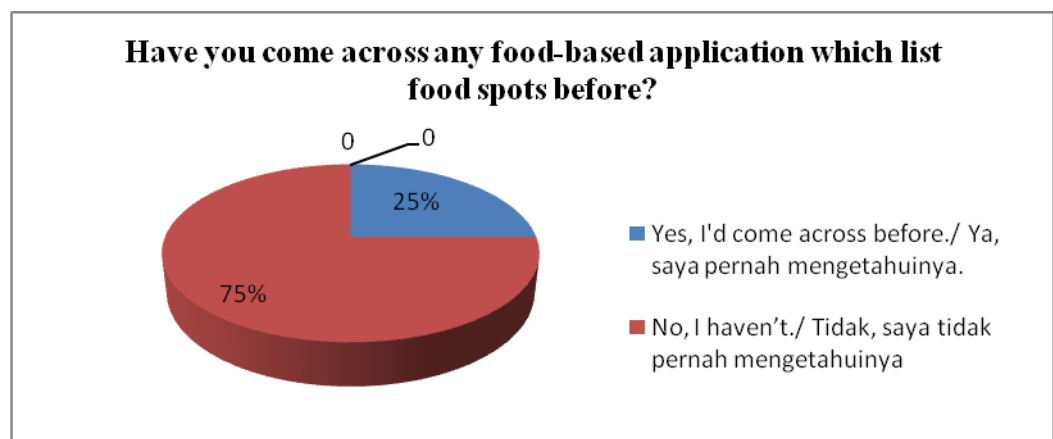


Figure 4.1.2: Awareness on food-based application

A total of 80% of the respondents agree that there are many review sites available for them to search for food spots and that could be the main reason why most of them choose to refer to the websites and blogs to search for good

food. However, most of them agree that the information provided in the review sites and blogs is not sufficient enough to help them locating the food spots. The information would probably be the details of the business for instance the address or the categories of food that they offer.

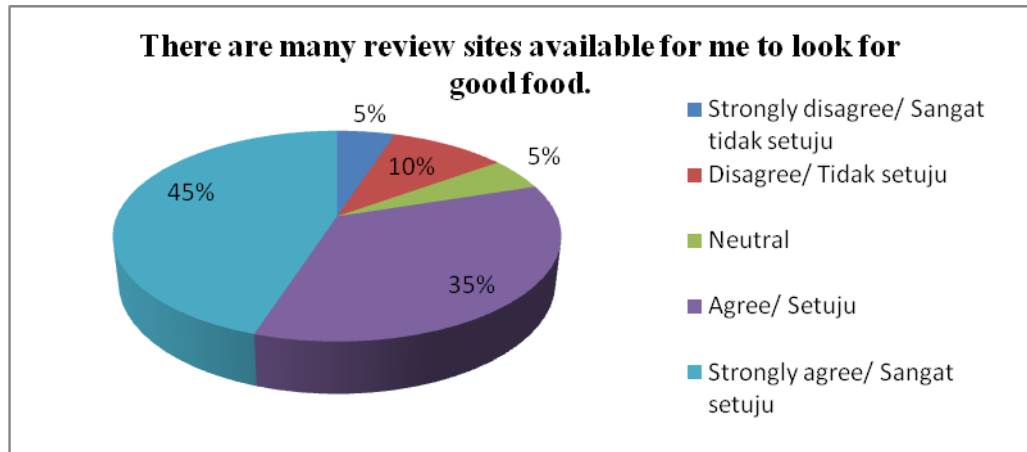


Figure 4.1.3: Review sites

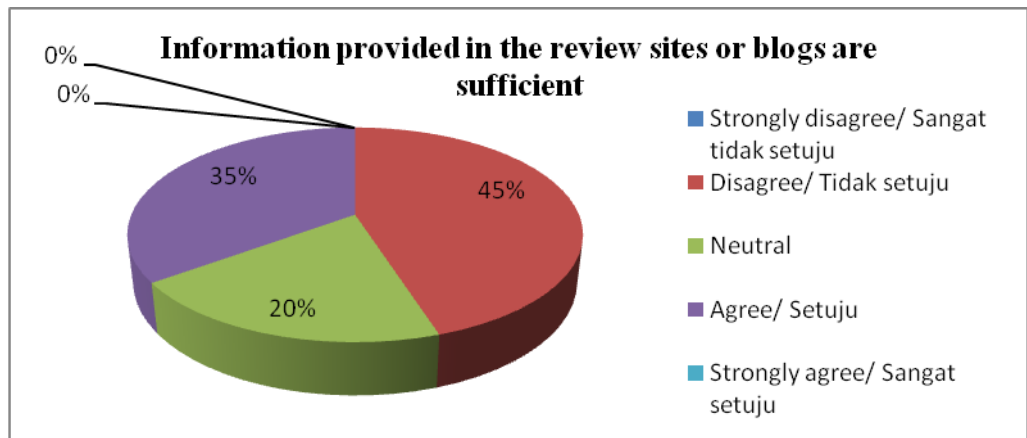


Figure 4.1.4: Information in review sites and blogs

40% of the respondents agree that the current websites and application helps and provide them with direction to search for the food spots. However, the statistic is followed by 35% of them who disagree with the statement. It can be concluded that the current app and websites is still lacking of this ability as

more people need to be satisfied with regards to the details on the direction to the food spots available.

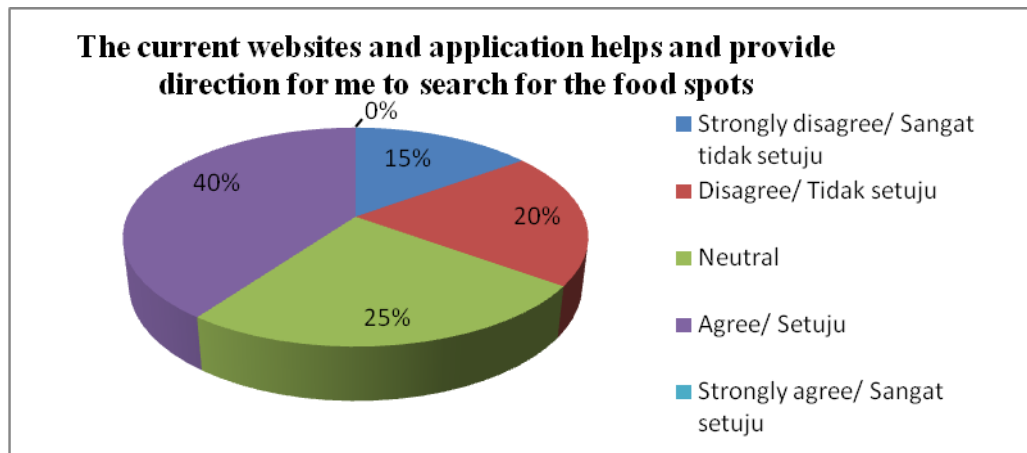


Figure 4.1.5: Direction provided by website and application

Besides that, 45% of the total respondents believe that the current information sources they use do not provide flexibility to the users to search for the food spots. Flexibility here means user would be given the option to choose the way they want the search mode to be which probably according to the area they are at or according to the type of food that they are craving for.

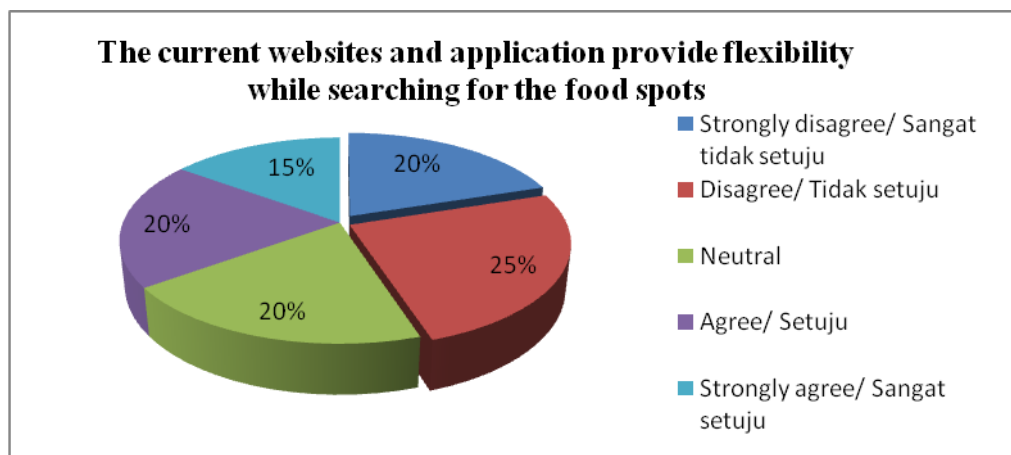


Figure 4.1.6: Flexibility

Though 80% of the total respondents agree that the current information sources is easy to use and ease them to search for the food spots but still 95% of them agrees that they will have to open up multiple sites to search for good

food. This indicates that the use of the current information sources is not as convenient where user can just browse through one site and they will get all the information they wish for besides having to be connected to the internet to view the sites as well.

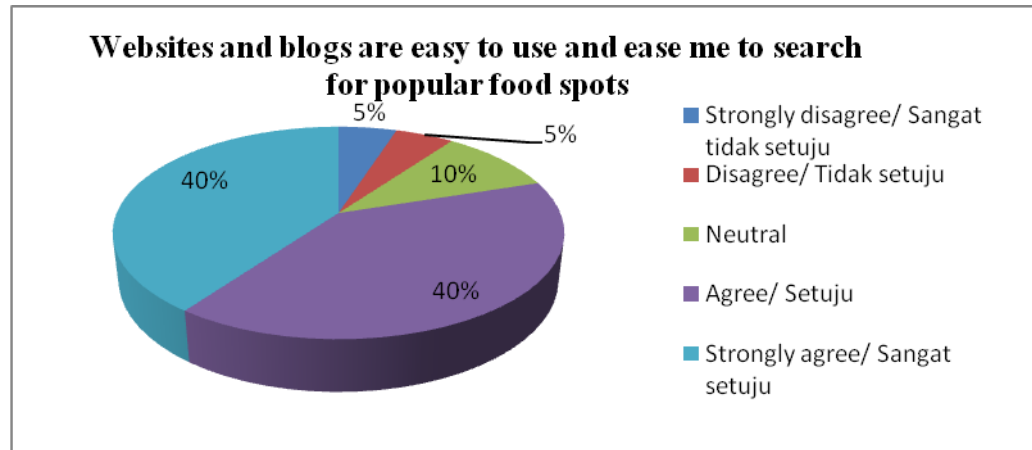


Figure 4.1.7: Ease to use the current information sources

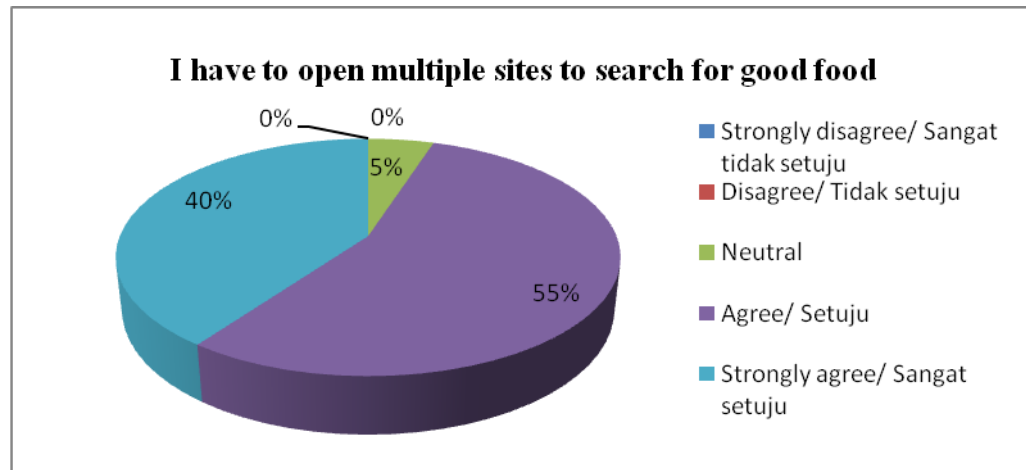


Figure 4.1.8: Convenience using the current information sources

Majority of the people who responded which cover more than half percent of them choose to be neutral in response to the statement that stated food-based application is easy to use and shall help them to search for popular food spots. This might be because 75% of the total respondents have not come across any

food based application before and they are not sure if it really helps them and serves its purpose since all this while most of them choose to go for the conventional way that is to browse through the internet.

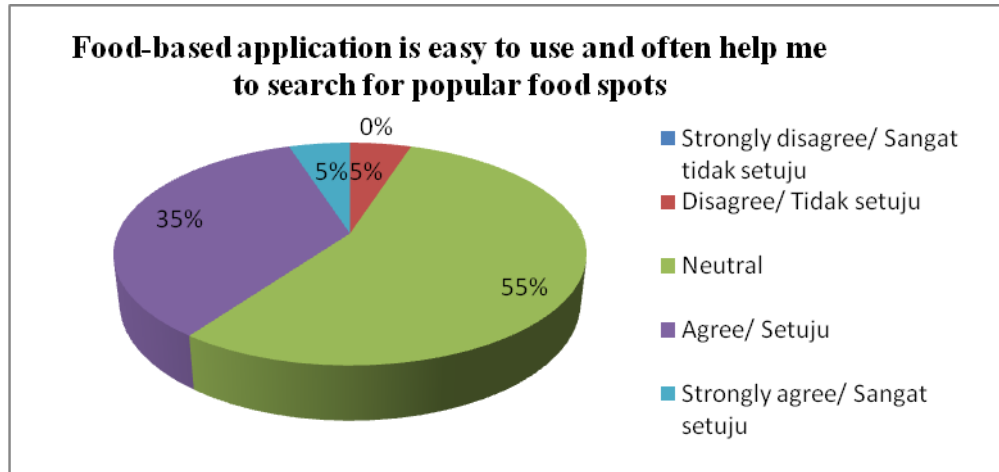


Figure 4.1.9: Usage of food-based application

4.2 Prototype

The prototype for this project is called the foodPedia which will consist of several main components. Below are the components of the application.

1. Search place
 - User is given the options to choose how the search mode will be
 - i) Search by area
 - ii) Search by food category
2. View list
 - User is able to view the list of food spots available
3. Choose place
 - User will choose the desired food spot to go
 - i) View the details of the place
 - ii) View the reviews about the place
 - iii) View the place on map
4. Add place
 - A link will be provided for the user to suggest a new place

The prototype is still under development process. Figures below illustrate the concept model of the application.

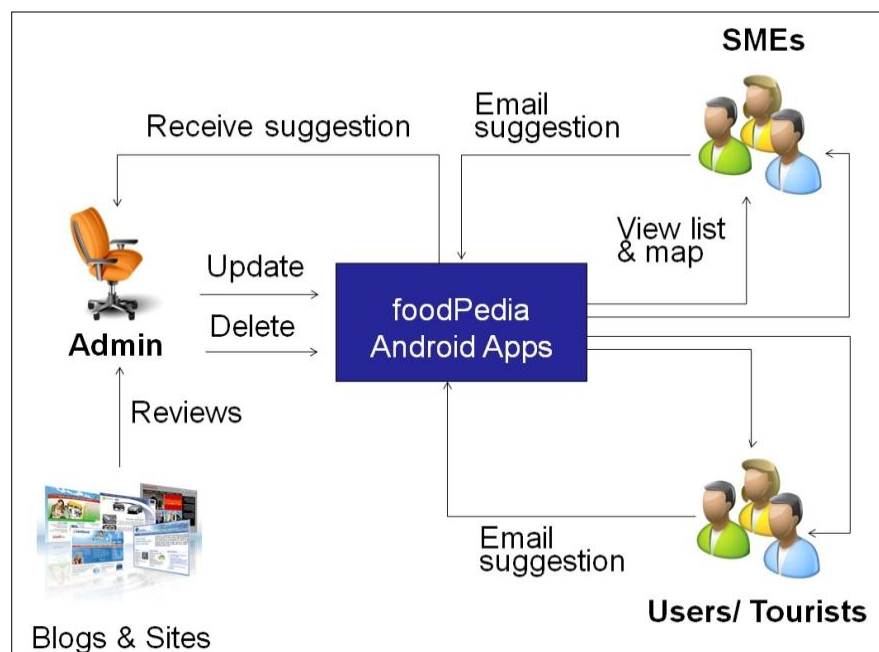


Figure 4.2.1: Concept model

4.2.2 Windows navigation diagrams

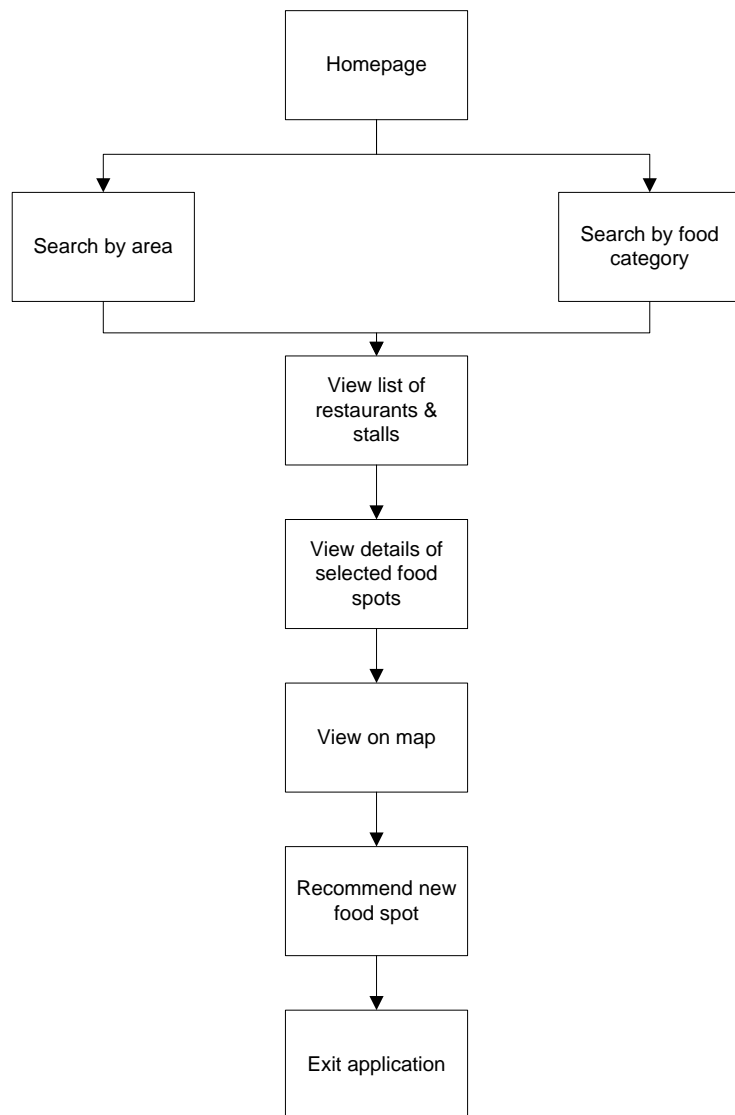


Figure 4.2.2: Navigation diagram

4.2.3 Interfaces

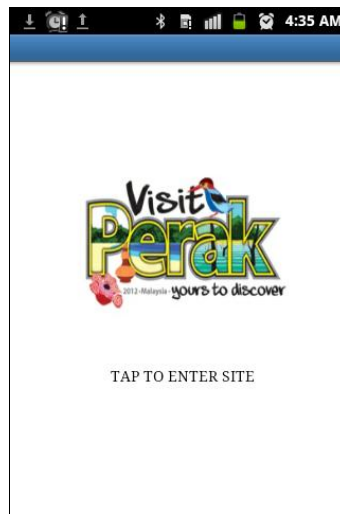


Figure 4.2.3.1: Flash screen



Figure 4.2.3.2: Homepage



Figure 4.2.3.3: Select area

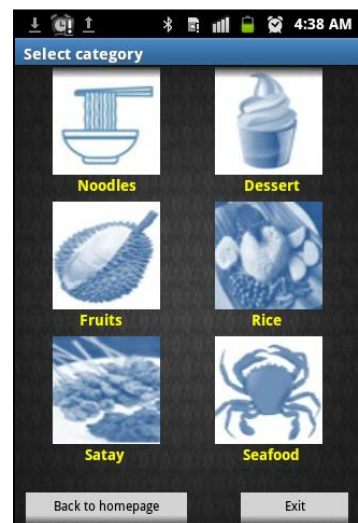


Figure 4.2.3.4: Select category



Figure 4.2.3.5: List of spots

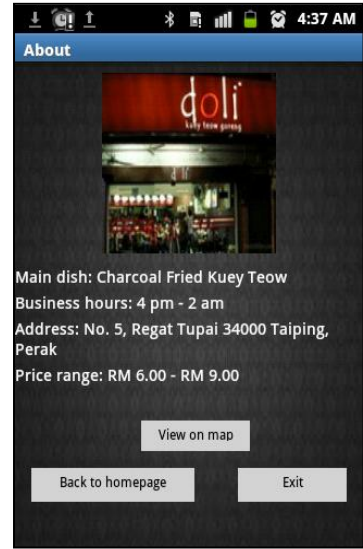


Figure 4.2.3.6: Details



Figure 4.2.3.7: Map

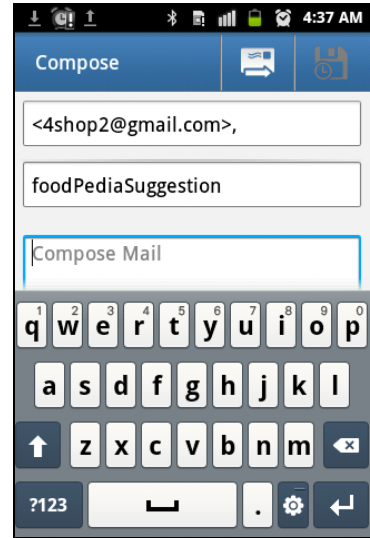


Figure 4.2.3.8: Email suggestion

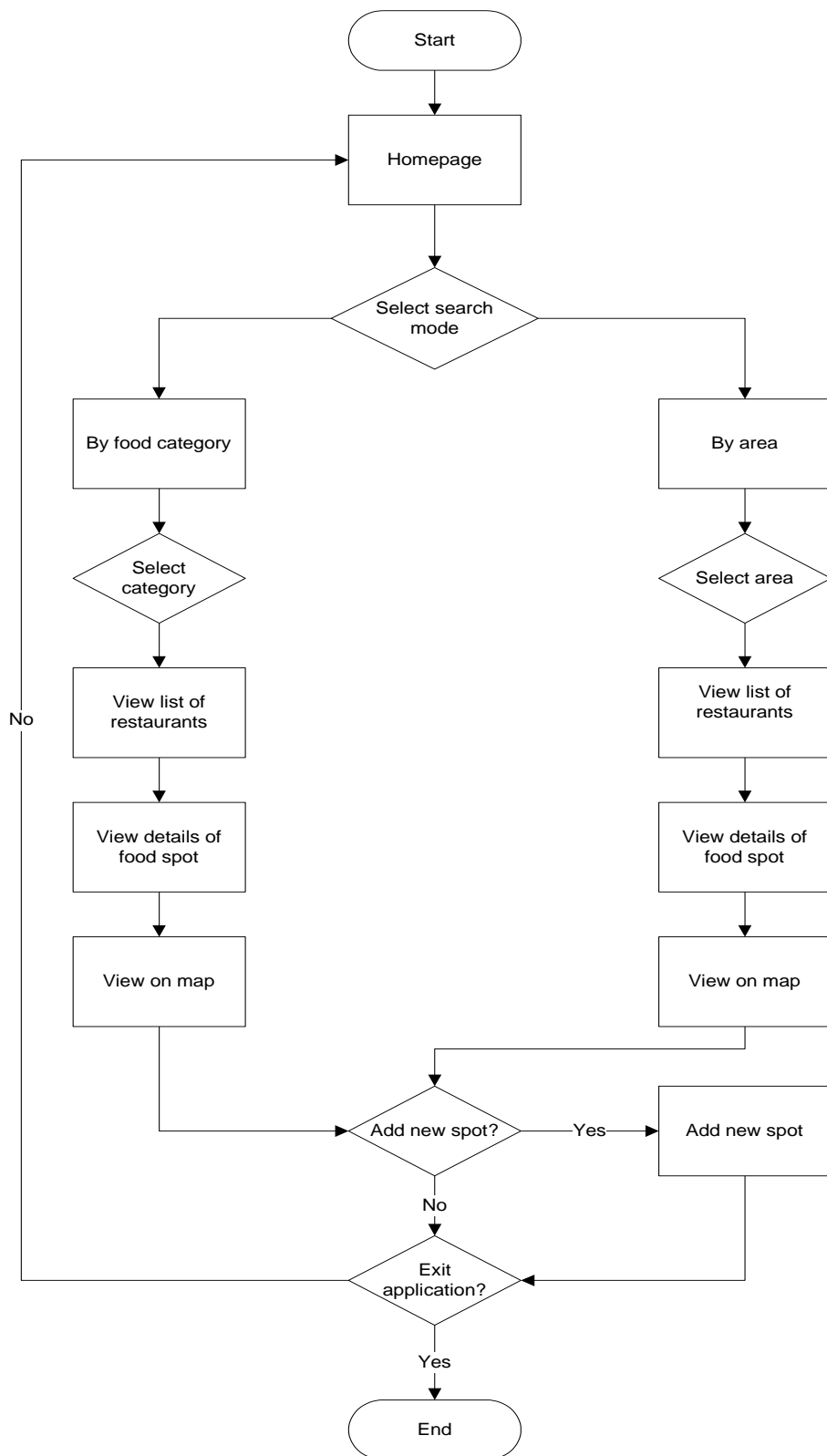


Figure 4.2.4 : Flowchart of the application

5 RECOMMENDATIONS AND CONCLUSION

Despite having the capability to suggest and provide the list of popular local food spots in Perak, foodPedia is hoped to provide a better platform for the user, not only to be used within the Perak areas but covers Malaysia as a whole. The application should be convenient where users are able to search for popular food spots in all states in Malaysia which at the same time become a medium to help the entrepreneurs in Malaysia to promote their local specialties as well.

Besides that, to make the application to become more interactive, the application could as well adopt the features of other food based application such as users are able to give reviews and comments on the food spots they had visited to be shared with other users. They could as well snap pictures of the food they had and share with others. Besides having to be given all the details, users can as well contribute by providing others the details for instance the reviews they made and pictures they snapped.

The application could as well be better if it is able to provide recommendation of nearby food spots to the user by locating the user's where about which would further provide them with flexibility in searching for the desired food spots.

Massive amount of SME businesses established in the country had as well create huge amount of job employment besides contributing huge portions of the total nation's gross production. Realizing how crucial the SMEs' roles are in contributing towards the nation's economic growth, technology should then be a great tool to be used in order to gain the competitive advantage and to adapt with the market environment which keeps on changing rapidly. The demand for android based application is then can be seen as one of the opportunities to be grabbed to help the SMEs.

This food spot application shall be one of the pilot projects for the enhancement of services industry specifically the SMEs in food and beverages sector in conducting their business operation in the future. With further enhancement in the features and specifications, the application could

be great and useful apps especially the travellers to be used in Malaysia. Besides, it could be one of the ways as a Malaysian citizen to show support towards our tourism industry to provide a more convenient travelling experience to the travellers especially when it comes to local delicacies.

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APPENDIX 1: FINAL YEAR PROJECT 2 GANTT CHART

	Items	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14
		21/5 - 25/5	28/5 - 1/6	4/6 - 8/6	11/6 - 15/6	18/6 - 22/6	25/6 - 29/6	2/7 - 6/7	9/7 - 13/7	16/7 - 20/7	23/7 - 27/7	30/7 - 3/8	6/8 - 10/8	13/8 - 17/8	20/8 - 24/8
Planning	Discussion with SV														
	Prepare Gantt Chart														
Data collection	Distributing survey questions														
Data analysis	Data compilation and result identification														
	Data documentation														
System analysis	Understand the current application														
	Evaluate the feasibility of proposed application														
Design and development	Draft the system flow														
	Design application components														
	Design application prototype														
	Application testing														
	Evaluate the application														
Important dates	Progress report							4-Jul							
	Pre-SEDEX										25-Jul				
	Dissertation											1-Aug			
	VIVA														
	Final dissertation														

APPENDIX 2: SURVEY QUESTION

Food-based Android Application for Food Spots in Perak

Food-based application is one of the best alternatives to assist mobile device's users to locate the food place that they wish to go. This project aims to develop an android application which operate as a food finder for the user to search for local food spots specially those operates by the SMEs in Perak in support with Visit Perak Year. This survey aims to understand the current available access of information for user to look for local food and what they think about the sources./ Aplikasi berasaskan makanan ialah salah satu alternatif terbaik untuk membantu pengguna peranti mudah alih mencari destinasi makanan yang ingin dituju. Matlamat projek ini adalah untuk mencipta sebuah aplikasi android yang membantu pengguna untuk mencari destinasi makanan tempatan terutamanya yang diusahakan oleh SME di Perak sebagai tanda sokongan kepada Tahun Melawat Perak. Kaji selidik ini bertujuan untuk memahami akses kepada maklumat yang sedia ada untuk pengguna mencari destinasi makanan tempatan dan mengetahui pandangan mereka terhadap sumber-sumber tersebut.

* Required

Section/Seksyen 1: Background/Latar Belakang

The objective of this set of question is to know the background of respondents (Objektif set soalan ini adalah untuk mengetahui latar belakang responden).

Age/ Umur *

- 18 – 25 years old/ 18 – 25 tahun
- 26 – 33 years old/ 26 – 33 tahun
- 34 – 41 years old/ 34 – 41 tahun
- > 41 years old / > 41 tahun

Gender/ Jantina *

- Male / Lelaki
- Female/ Perempuan

Place of stay/ Tempat kediaman *

- Perak / Perak
- Outside Perak/ Luar daripada Perak

Occupation/ Pekerjaan

- Government servant / Penjawat awam
- Private servant / Kakitangan swasta
- Student / Pelajar

- Self-employed/ Bekerja sendiri

Section/ Seksyen 2 : Access to information/Akses kepada maklumat

The objective of this set of question is to understand the current access of information among the respondents when they travel to search for popular food spots and their opinion on the current information sources. / Objektif set soalan ini adalah untuk memahami akses kepada maklumat dalam kalangan responden semasa pergi mengembara mencari destinasi makanan popular dan pandangan mereka terhadap sumber maklumat yang sedia ada.

1. What did you refer to when you want to look for popular local food spots when you travel? / Apakah panduan anda jika anda mahu mencari destinasi makanan tempatan yang popular semasa pergi mengembara? *

- Travel agency/ Agensi pelancong
- Website/ Laman sesawang
- Blogs/ Blog
- Internet-based application/ Aplikasi berasaskan internet
- Locals/ Penduduk setempat

2. Have you come across any food-based application locating food destination before?/ Pernahkah anda tahu apa-apa aplikasi berasaskan makanan yang menempatkan destinasi makanan sebelum ini? *

- Yes, I had./ Ya, saya pernah.
- No, I haven't./ Tidak, saya tidak pernah.

*

	Strongly Disagree/ Sangat Tidak Setuju	Disagree/ Tidak Setuju	Neutral/ Neutral	Agree/ Setuju	Strongly Agree/ Sangat Setuju
There are many review sites available for me to look for good food./ Terdapat banyak laman yang boleh dilawati untuk saya mencari makanan yang enak.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information provided in the	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Strongly Disagree/ Sangat Tidak Setuju	Disagree/ Tidak Setuju	Neutral/ Neutral	Agree/ Setuju	Strongly Agree/ Sangat Setuju
--	------------------------------	---------------------	------------------	--

review sites or blogs are sufficient./
Maklumat yang disediakan di laman sesawang atau blog sudah mencukupi.

The current websites and application helps and provide direction for me to search for the food spots./ Laman sesawang dan aplikasi yang sedia ada membantu dan menunjuk arah yang perlu dituju untuk mencari lokasi makanan tersebut.

The current websites and application provide flexibility for me to search for the food spots./ Laman sesawang dan aplikasi yang sedia ada memberi fleksibiliti kepada saya untuk mencari destinasi makanan.

The current websites, blogs or application covers many food categories available./Laman sesawang, blog atau

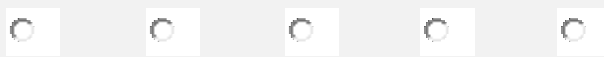
Strongly Disagree/ Sangat Tidak Setuju	Disagree/ Tidak Setuju	Neutral/ Neutral	Agree/ Setuju	Strongly Agree/ Sangat Setuju
--	------------------------------	---------------------	------------------	--

aplikasi yang ada
kini merangkumi
banyak kategori
makanan.

Websites and blogs
are easy to use and
ease me to search
for popular food
spots. / Laman
sesawang dan blog
yang sedia ada
mudah untuk
digunakan dan
memudahkan saya
mencari destinasi
makanan yang
popular.



I have to open
multiple sites to
search for good
food./ Saya perlu
membuka beberapa
laman sesawang
untuk mencari
makanan yang
enak.



Location-based
application is easy
to use and often
help me to search
for popular food
spots. / Aplikasi
berasaskan lokasi
mudah untuk
digunakan dan
sering membantu
saya mencari
destinasi makanan
yang popular.

