

Receipt Box: A Receipt Management System for Business Travelers

by

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Dissertation submitted in partial fulfillment of
the requirements for the
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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the
Business Information System Programme
Universiti Teknologi PETRONAS
in partial fulfillment of the requirement for the
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(BUSINESS INFORMATION SYSTEM)

Approved by,

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UNIVERSITI TEKNOLOGI PETRONAS

TRONOH, PERAK

September 2013

CERTIFICATION OF ORIGINALITY

This is 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.

ANIZ SYUHAIZA BINTI AHMAD ZAIDI

ABSTRACT

Receipt Box is designed to be the best one-stop center for storing and managing the business travel receipts that simplifies the life of the business travelers. Receipt Box is an application that stored from a mobile and can be viewed from a desktop from Receipt Box web based. The users just need to key in specific details from their claim receipt, snap picture and the information will be kept in the database that integrated with the website. Most of the company required receipt as an evidence for the claiming process to be allowed. To keep the business travel receipts in a place may be a big trouble to the business travelers as the nature of the business travel receipts that faded if keeps it for too long or it has contact with water and always lost and scattered all over the place. The main objective of developing this project is to develop a mobile application that provides a systematic way for the business travelers in managing their business travel receipt while on business trip. Receipt Box only a mobile application that targeted to the business travelers personally and not integrated with any claiming system for any organization. From the survey that conducted to the business travelers, there are high demands on Receipt Box to ease and solve their problems. 50% of the respondents believed Receipt Box is helpful and 45% of respondent are strongly agreed that Receipt Box will be an important tool for business travelers. Hence, it is believed that most travelers might have a better solution for their problem by having Receipt Box.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

As workers that work with any kind of organization, people will experienced in travelling to perform their job. The business travelers are the people who are travel for business purposes. Usually, all of the expenses that the business travelers spend while on travel are claimable according to their company policy. Some of the companies will ask the workers to pay the expenses by using their own money first. Then, when they already come back from their business travel they need to fill in the claim form and attach the evidence of their expenses which are receipts. However, the receipts that they got during the business travel tend to lose as in many cases they only kept their receipt in their wallet. Other than that, the receipt also will be faded if it is kept too long or have contact with water.

Based on U.S Travel Association, business travel in United States of America alone is responsible for \$246 billion in spending and 2.3 million American jobs. According to P-touch Means Business ¹ survey that conducted by Brother International Corporation, disorganization is a reason why employees are not being reimbursed for business travel from their employers. There are about 30% of offices workers misplaced or lost the business travel receipts and they have lost out on getting reimbursed for a business or travel expense.

Since the business travelers are busy people, an application that helps the business traveler in managing their claim receipts in systematic way is needed. The application need to be simple and easy to use. Hence, this project will initiate Receipt Box: A Receipt Management System for Business Travelers that use android as the platform to make it accessible using mobile phone. The database stored in mobile application will link to a website and the users can generate report

¹ Brother International Corporation, <http://www.prnewswire.com/news-releases/p-touch-means-business-survey-reveals-offices-waste-more-than-177-billion-per-year-looking-for-lost-items-101465149.html>

and print their claim receipts at the website. The users need to key in specific details from their claim receipt and the information will be kept in the database. The database that integrated with the website can be accessible through a desktop at anywhere by using the same login ID and password. This project will focus on how to capture the information needed for the claiming matters and help the business travelers manage their claim receipts in systematic way.

1.2 Problem Statement

The businesses travelers mostly are busy people. Hence, the tendency of losing the business travel receipts is high. Most of the business travel receipts is missing or lost when the business travelers on business trip. Other than that, the nature of the receipts that faded if keeps it for too long or it has contact with water. As the business travelers lost the business travel receipts or the receipts faded, the business travelers do not have evidence for their expenses while on business trip and cannot claim the money back. Besides that, most of the business travelers agreed that the different sizes and shapes of business travel receipt make it harder and nasty to keep. The user tends to keep in a wallet or pocket file and lost. So, the business travelers cannot get reimbursed from their employer.

Based on the preliminary survey conducted, about 73% of respondents who are business travelers are agreed that they are always lost the business travel receipt when travelling. The business travelers also have difficulty to find their business travel receipts in the office when to submit the claim form. 36% of business travelers believed that it is a challenge to manage the business travel receipts is the business travel receipts are getting faded during attaching it to the company. About 52% of business travelers also think that the business travel receipt being lost and keep nowhere is a challenge to manage the business travel receipts.

1.3 Objective

1. To develop a user-friendly mobile application that provides a systematic way for the business travelers in managing their business travel receipt while on business trip.
2. To study the challenges faced by the business travelers and the ways in managing the business travel receipts.
3. To analyze the user requirements in developing the mobile application that help business travelers in managing their business travel receipt while on business trip.

1.4 Scope of Study

Business traveler is a traveler whose expenses are paid by the business he works for. This project is targeted to business travelers. Receipt Box is a mobile application that uses android as the platform. The mobile application will be integrated with a website and can be accessed through a desktop at anywhere. The main aim of developing the Receipt Box is to organize the business travel receipt in more systematic way. The user has to download and install the application in the mobile phone. The user needs to create username and password. All the information of the claim receipts will be captured via mobile. The users need to key in specific details from their claim receipt and the information will be kept in the database. The same database stored via mobile can be accessed through website.

Receipt Box analyzes the challenges faced by business travelers while on business trip. All the information gathered will be analyzed and added as the features and functions to the Receipt Box. The Receipt Box also did not integrate with any company's claiming system. Receipt Box is a stand-alone application that helps the business travelers to manage the business travel receipts in more systematic way. The figure 1.1 shows the scope of study for Receipt Box project in summary.

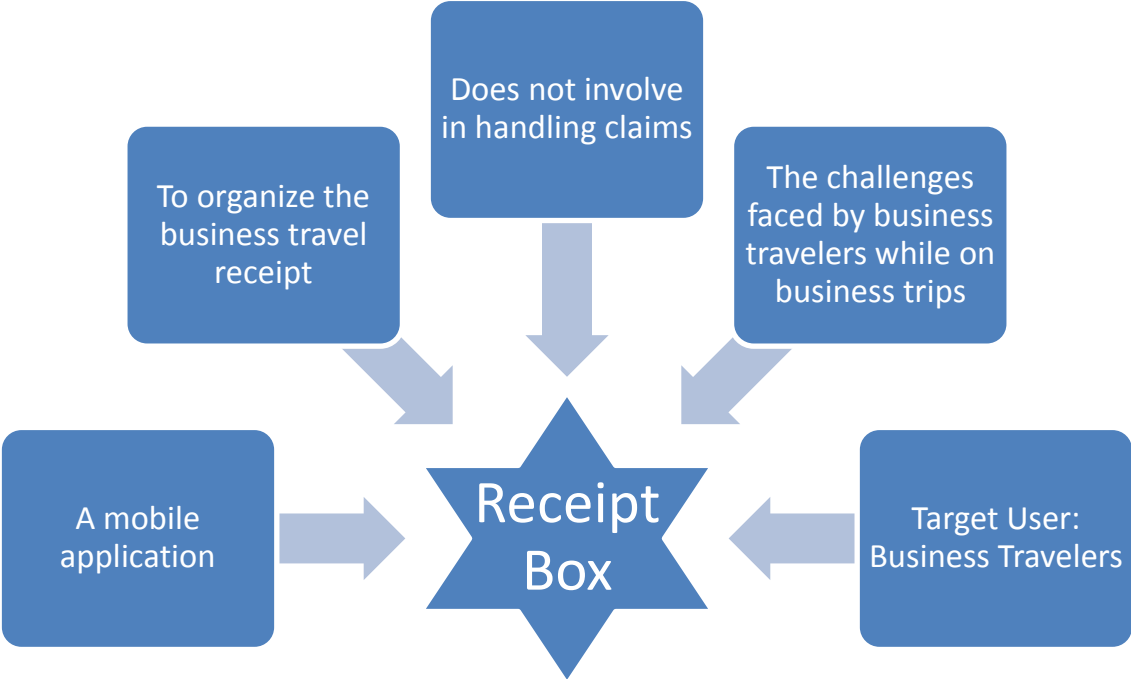


Figure 1.1: Scope of Study for Receipt Box

1.5 Significance and Relevancy of the Project

Receipt Box will be a useful application to the business travelers while on business trips. This is because the business travelers are the busy people and need an application that simplifies their lifestyle. From the previous research had been done, most of the existing mobile application did not have the features of the user can access the database through website. By having Receipt Box, the user can produce the report and print out the business travel receipts by accessing the Receipt Box web-based.

This project will be divided into two (2) phase. The first phase will be focusing more on data gathering, literature review, technical learning and research. This phase will be completed in 12 weeks. Then, the second phase will be focusing on the development, testing, deliverable and documentation. The second phase is estimated to be completed in 14 weeks. Hence, the project will take 26 weeks to be completed.

CHAPTER 2

LITERATURE REVIEW

2.1 Definition of mobile apps

According to Wikipedia, a mobile application is a software application designed to run on smartphones, tablet or mobile devices. Apple App Store, Google Play, Windows Phone Store and BlackBerry App World are the example of the owner of the mobile operating system. The mobile app usually available through application distribution platforms that operated by the owner. Some apps are free while others must be bought. Mobile apps were originally offered for general productivity and information retrieval. This is including email, calendar, contacts, stock market and weather information. However, other categories are developing such as mobile games, banking, and order tracking application as public demand and the availability of developer tools drove the rapid expansion. According to a May 2012 comScore study, more mobile subscribers used apps than browsed the web on their devices. Researchers found that usage of mobile application strongly correlates with user context and keep increasing day by day.

According to Singh (2013) in his study, mobile apps usages are growing 35% today. At this time, all smartphone and tablet vendors are focusing to create a strong mobile apps ecosystem. Besides, the demand of mobile apps on smart devices like smartphones and tablets are increasing nowadays which also forced the developers for mobile apps and device makers to focus on it. This is the reason why mobile apps ecosystems are getting momentum day-by-day across the world.

According to Singh (2013), a study commissioned by Compuware in conjunction with Equation Reach, majority of smartphone owners are likely to use mobile apps to mobile websites. The study was conducted study over United States of America, United Kingdom, France, India, Japan and Germany with a respond over 3354 respondents that had either smartphone or tablet and accesses internet via their devices. The result shows that 85% of people are willing to use mobile websites for mobile apps. Apparently, 55% of respondents admitted

that mobile apps were more convenient. 48% and 40% of users accepted that mobile apps were faster and easier to browse respectively. Interestingly based on the survey conducted, 79% of respondents said that they would only retry an app if it failed once or twice to work first.

According to Singh study, mobile apps engagement is declining. As per a Flurry's report, the frequency of mobile apps use by users in a week has dropped to 3.7 today compared to 6.7 in 2009. Nowadays, marketers and app developers easily perceive opportunities in mobile app market. Mobile app will generate \$25 billion revenue in 2013. Interestingly, smartphone apps are estimated to contribute about \$16.4 billion and tablets app roughly \$8.8 billion to the market.

The number of mobile applications stores has been growing non-stop. Perez (2011), states that there are about 800,000 apps in Apple's Store and 750,000 for Android user in Play Store. Users are seems like to believe more on established publishers today. On her research, she state that it is very hard for newcomers to become breakout success at this point, so the decks are already stacked against new apps before they ever go live. Today's users have a lot of choice for their mobile apps and their behavior cannot be predicted on their choices. Around quarter of mobile apps used once and abandoned back in 2011. According to Mobilewalla, the founder of AnindyaDatta, estimated 80% to 90% of apps are eventually has been deleted from the user's phone in his speaking to USA Today.

According to the study on "Apps Continue to Overtake Mobile Web" by Perez, Mobile World Congress in Barcelona, the GSM Association (GSMA) partnered with mobile analytics form Zokem to publish highlights from Zokem's recent smartphone research study. In the report, it finds that mobile apps are overtaking mobile web browser. The disadvantages of mobile web are the small screen, the rendering power of smartphones and limitations of website based application logic, it makes the web browser is unsuitable. Even the latest smartphone supporting HTML 5, Flash and other powerful web technologies, it still make the web browser application is not suitable for most cases. Verkasalo said in his study that other factors that contribute to apps' success are the ease of monetization within app stores and the growth of the mobile apps ecosystem. This is the reason why the apps still continue to overtake the mobile web.

According to Whitfield on his journal on What Apps are People Using, the market size of smartphone and tablets users downloading is almost double up compared to 46 billion apps in 2012. Worldwide, games are the largest category of apps that being downloaded in major app store such as Apple App Store and Google Play. Instead of games, the Instant Messenger (IM) also hit the world and incredibly popular. The table shows the users of Instant Messenger until January 2013.

Service	Users (M)	Date
WhatsApp	200	Dec 2012
WeChat	300	Jan 2013
Viber	175	March 2013
Line	100	Jan 2013
Kakao Talk	70	Dec 2012
BBM	60	Dec 2012
ChatON	10	Dec 2012
iMessage	45*	Jan-13
Skype	10*	Dec 2012
Facebook Messenger	700m mobile users, Jan 2013	
- And there are many others		

* = Estimated

Figure 2.1: The users of Instant Messenger until January 2013

2.2 Business Travel Receipts

According to Lee, Schinder and Schell in the book of 'Mobile Applications: Architecture, Design, and Development, there are two largest groups of people that use mobile devices which are workers and consumers. For the 'road warriors' that refers to employees that travel for much of their work life, they are the person who is need to go mobile. The 'road warriors' might have a routine of attending meetings everywhere, checking emails, reading or writing business documents. The business travelers travel much of their work life and always stay in hotels and use various types of public transportation. The lifestyle of the business travelers is frequently 'on the go' and they need a variety of mobile devices that suits with their lifestyle to make their routing more ease. Lee, Schinder and Schell have state that workers want the mobile device or mobile applications that make their work life easier or better. According to Lee, Schinder and Schell, there are advantages when mobilize the business. One of them is it can improve workflow efficiency and productivity. It will help the workers in reducing the redundant activities such as having to re-enter data. Then, being mobilize can improve the data currency and accuracy. A mobilized workforce can receive and provide information to existing business systems in a timely fashion. During the data gathering and reporting process, the number of errors can be reduced.

Whitfield estimate that there are at least 1 billion users around the world and most of them are the same person that is likely to have multiple apps installed on their smartphone. The research conducted shows that iPhone and iPad users tend to choose games, entertainment, education and lifestyle apps. For Android users, they tend to prefer games, entertainment, personalization and books. Besides, the users tend to choose the free apps compared to paid apps. There are 90% of apps downloaded worldwide were free in 2012.

According to Kristel Wills in an article entitled “E-Receipts Make Your Business Travel Even Better”, she has stated that it is difficult to track paper receipts and the time is wasted to find and input the data from the receipt to our report. Kristel Wills believed that electronic version of receipt may help the business travelers. The electronic version of the receipt from Kristel point of view is when the suppliers upload the receipt straight into a system. The business travelers do not have to think about the receipts and put the receipts in a folder labeled “trip receipts”.

A study by David Pogue (2009), in his article entitled “A Better Way to Manage Receipts for Business Travel”, it is stated that it is difficult to become a master of all nasty little receipts that he collect along his business trips. He also stated that it is hard to get reimbursed for hotel, transportation and meals as it is hard to keep the receipts. The different sizes and shapes of receipts make it harder to keep it. During business trips, there is no place to stash them on the trips and when get home, the business travelers need round the receipts up, label it, tally it and clip it together. According to David, it takes a lot effort to keep the receipts.

The company also did not pay the business traveler if they did not have evidence of receipts. There is no way to get reimbursement if business traveler cannot prove the receipts to the company. According to David (2009), there is a Neat Receipts scanner. This software on the computer not only displays a larger and clearer version of the receipts, it is actually attempts to recognize what details on the receipt.

2.3 Related Works

Based on the research had been done, there are four (4) application that help the business travelers to store and manage the business travel receipts. The applications are Travel Expense Lite, Smart Receipt, Receipt Filer Lite and Digital Receipts. Although these application might have some similarities with Receipt Box, but still it do not have the features of web-based that can be accessed through desktop.

2.3.1 Travel Expense Lite

Travel Expense Lite helps the business travelers to record the expense during travelling like on a business trip, and out of the office appointment or a person vacation. Travel Expense Lite display the total amount of travel expense in the selected currency. It is also display the distribution of expense category in pie chart to ease the user to review the report. The user can export the expense record which is in CSV file to SD card. Then, the user can email the travel the expense record to the receiver as a proof of the receipt. The server will always backup and restore the database. Travel Expense Lite also support 27 currencies and come out with the features of configurable date and time format. The user have to login with password and can add new record with default value.

2.3.2 Smart Receipt

Smart Receipt helps the business travelers to record the expenses more efficiently with fully customizable receipt categories such as Meal, Transportation and Hotel. It is optimized for speed and easy to use. Smart Receipt come out with a features of flexibility of receipt reporting as it is build the expense report as PDF files or CSV file for Excel. The CSV output is fully customizable according to the user needs. Smart Receipt is also built-in to support for many different currency and it is battery efficient. Smart Receipt will track the receipts data and allow the user to generate both PDF and CSV reports that can be share with email account. A PDF report is tabulated to improve the readability and look professional.

2.3.3 Receipt Filer Lite

Receipt Filer Lite is an application that helps the user to record the expenses efficiently with including the taxes. The user can snap the picture of the receipt then view the picture before save it in the database with the ability of zoom in or zoom out the picture. Receipt Filer Lite has its receipt categories such as business, clothing, entertainment, food and transportation. The data and pictures can be export to email account to start to do reporting. The Receipt Filer Lite also has the ability of back up the data to make sure all the data are saved securely.

2.3.4 Digital Receipts

Digital Receipts is an application that has two ways to capture the receipts. The user can Touch & go at participating stores or by using Camera Scan at anywhere. If the user is using the Touch & Go method, the user just has to scan the proximiant code at the checkout counter. The user also has the choice of snapping their own receipts and fill in the details of the receipts. The user can instantly save and email the receipt to email account. The user can create the expense report just by doing it in their smartphone and send it to recipient' email. Digital Receipts has the features of Loyalty Card and Saved Coupons. The user can collect the rewards points when collect receipts from participating stores.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 METHODOLOGY

The waterfall model is normally using the software development a life cycle (SDLC) in which enforces moving to the next phase only after the completion of the previous phase. For developing the Receipt Box, the student have adapted the waterfall model and modified the model to suit the timeframe the project timeframe and feasibility. The figure 3.1 shows the stage taken place in Receipt Box project. It consists of Planning phase, Analysis phase, Design phase, Testing phase and Deliverable phase.

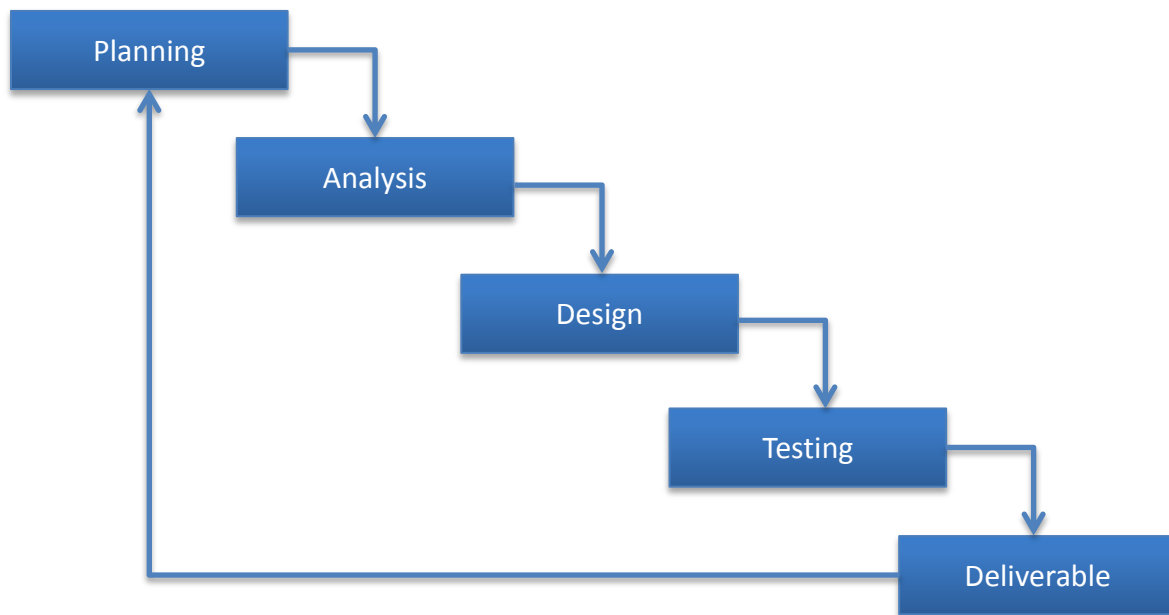


Figure 3.1: The waterfall model for Receipt Box

3.2 PROJECT ACTIVITIES

In this section, the student will explain about the project activities taken place in the project. The project activities that have taken place by the student in completing the project are planning, analysis, design, testing and deliverable.

3.2.1 Planning

In planning phase, an interview session and survey have been conducted to study the business travelers' behavior. For the interview session, there were two (2) interviewers which are Ahmad Wardi B Abdullah, an Executive of Finance and Asset Management for Universiti Teknologi PETRONAS (UTP) and Nur Hidayah Bt Shukor, an Executive of Technical Data for Petroleum Management Unit (PMU). The survey that has been conducted was targeted to business travelers.

The objective of interview session with Mr. Ahmad Wardi B Abdullah is to identify the process of claiming matters takes place for an organization. Mr. Ahmad Wardi explained on how Universiti Teknologi PETRONAS handles claiming among the staff. Besides, the interview session with Ms. Nur Hidayah Bt Shukor is to analyze the business travelers' behavior in different perspective. The objective of second interview session was to identify the problem faced by business travelers. Moreover, the student wants to identify the method that is used by business travelers in managing the business travel receipts. The student wanted to know is there is specific method or system that is used by business travelers in managing their business travel receipts. The interview session with Ms. Hidayah also was to identify the function needed by a business traveler while on business trip. This is to know what criteria business travelers are looking for a system that manages the business travel receipts.

A survey that targeted to business travelers was also conducted in order to evaluate whether mobile apps is relevant to be implemented as a solution for the business travelers. The objective of conducting the survey is to investigate the travelling behavior and challenges faced by business travelers in managing the business travel receipts. Moreover, the survey also to study the perceived usefulness of developing a mobile application that manages business travel receipts. Lastly, the survey was conducted to identify the function needed by the business travelers to manage the business travel receipts.

3.2.2 Analysis

After the planning phase has been done, analysis phase has been taking placed. In analyzing the data gathered from the survey, the student has used the basic statistics. This is to study and identify the perceived usefulness of the survey. From the statistics, the student can know what criteria the business travelers are looking for on a mobile application that manages their business travel receipts.

3.2.3 Design

In designing phase, the student should develop a mobile application on managing the business travel receipts based on the design requirements. In design phase, the student was designing the system architecture and designing the interface for the prototype and started to develop the prototype for the project. The interface should be suitable with the business travelers which is a busy people. The interface of the project should be simple and user-friendly. In this phase, the student discovered the tools required in order to complete the project.

3.2.4 Testing

The objective in testing phase is to evaluate the interface of the mobile application and the website in terms of its usability and its features. It is important to know that the mobile application is user-friendly. Testing phase is the execution of the mobile application development. In testing phase, the student will analyze the testing result and debug the major and minor problem. After that, application testing by user has been taken place to check the specifications of the prototype is aligned with the requirements and meet the objectives of the study.

3.2.5 Deliverable

In order to make sure that the project is deliverable to the entire user, the student has to evaluate the software first. This is to make sure that the software testing is meeting the user requirements. Then, the application can be delivered to all of the business travelers to use it in managing business travel receipts.

3.3 PROJECT METHOD AND ACTIVITIES

3.3.1 Gantt chart

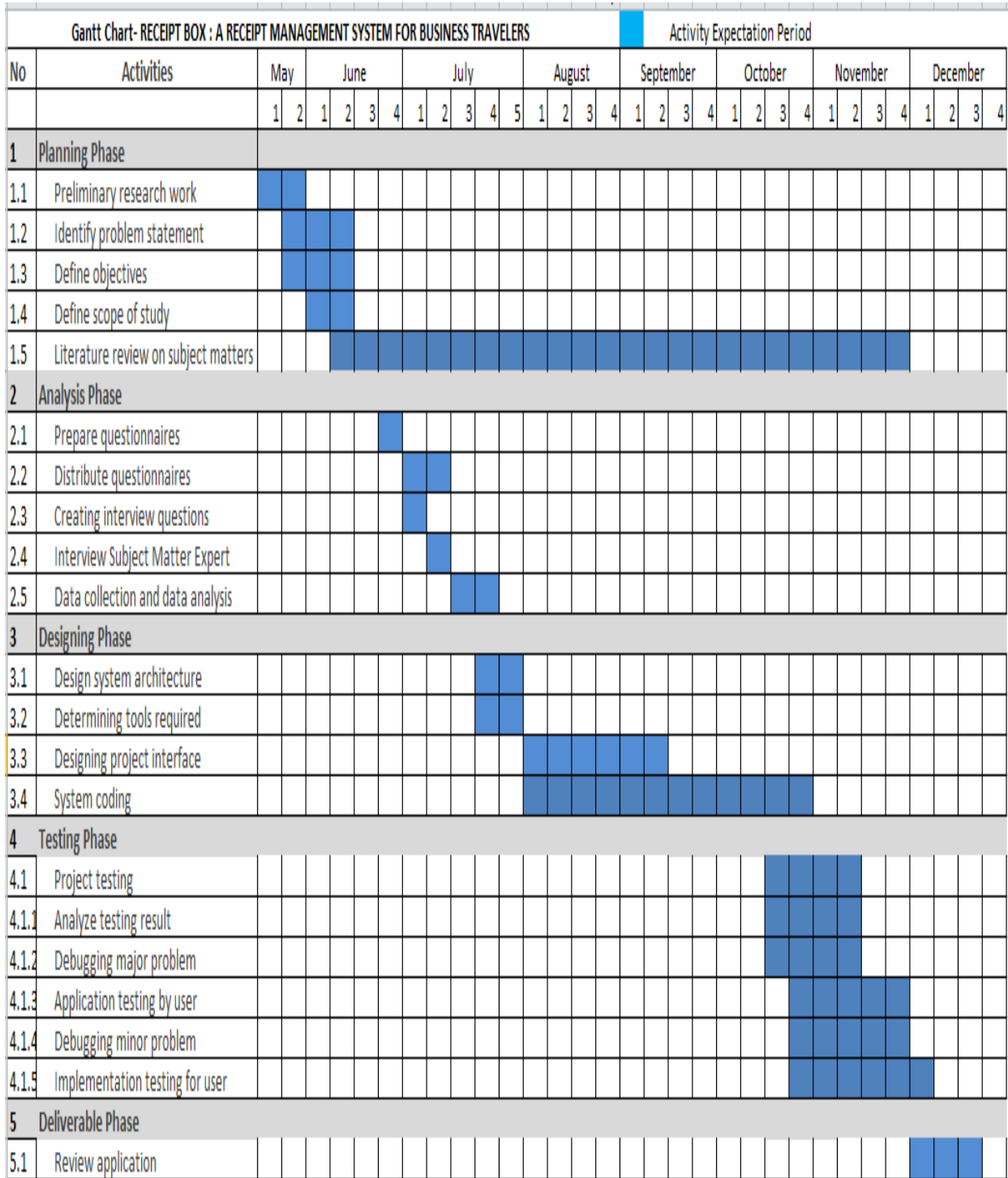


Figure 3.2: The gantt chart for Receipt Box project

Figure 3.2 shows the Gantt chart in completing the project of Receipt Box. As for now, the student is at the phase of designing which are developing the system coding. The student is starting the coding to execute the project. The user interface design has been executed in Final Year Project 1 (FYP1).

3.3.2 Key milestone

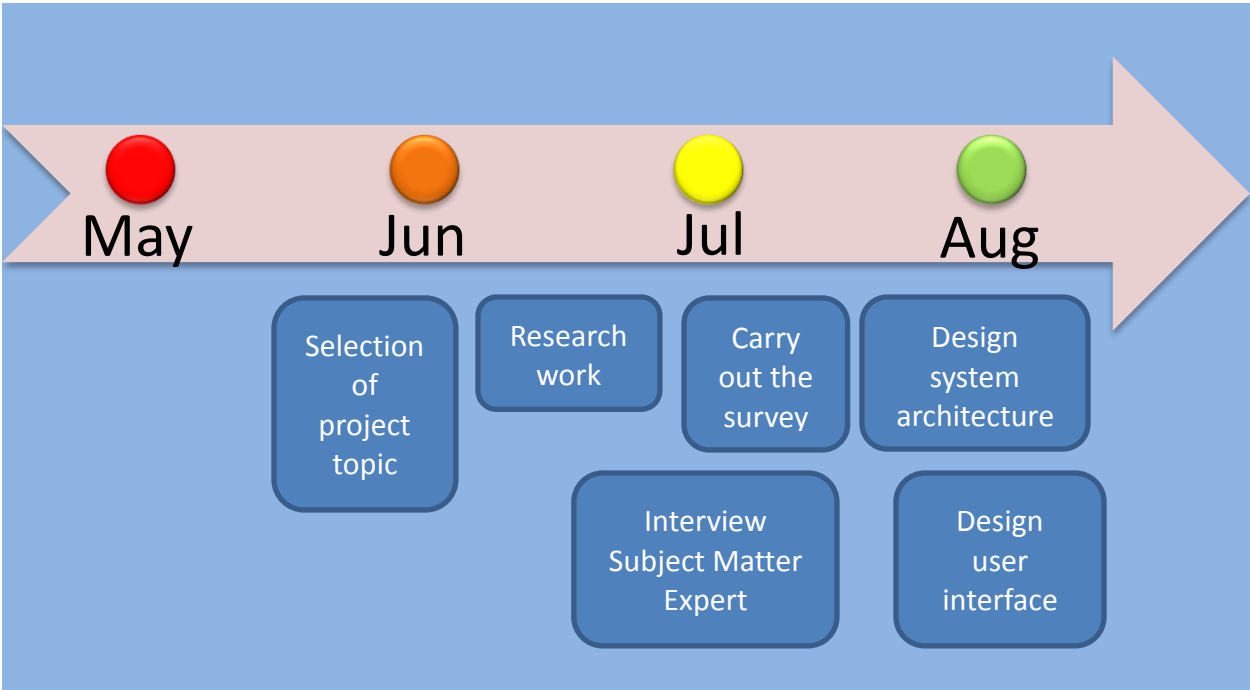


Figure 3.3: The key milestone for Receipt Box project in FYP1

Figure 3.3 shows the key milestone for completing the Receipt Box. The project starts on late of May for selection of topic and followed by doing the research work on the subject matters in the late of June. Then, in the early of July, it is the stage of preparation for the survey questionnaire and carries out the survey. In gathering more information to develop the Receipt Box project, interview session of the Subject Matter Expert (SME) has taken place. Lastly, in the month of August, the system architecture and user interface for Receipt Box project is designed.

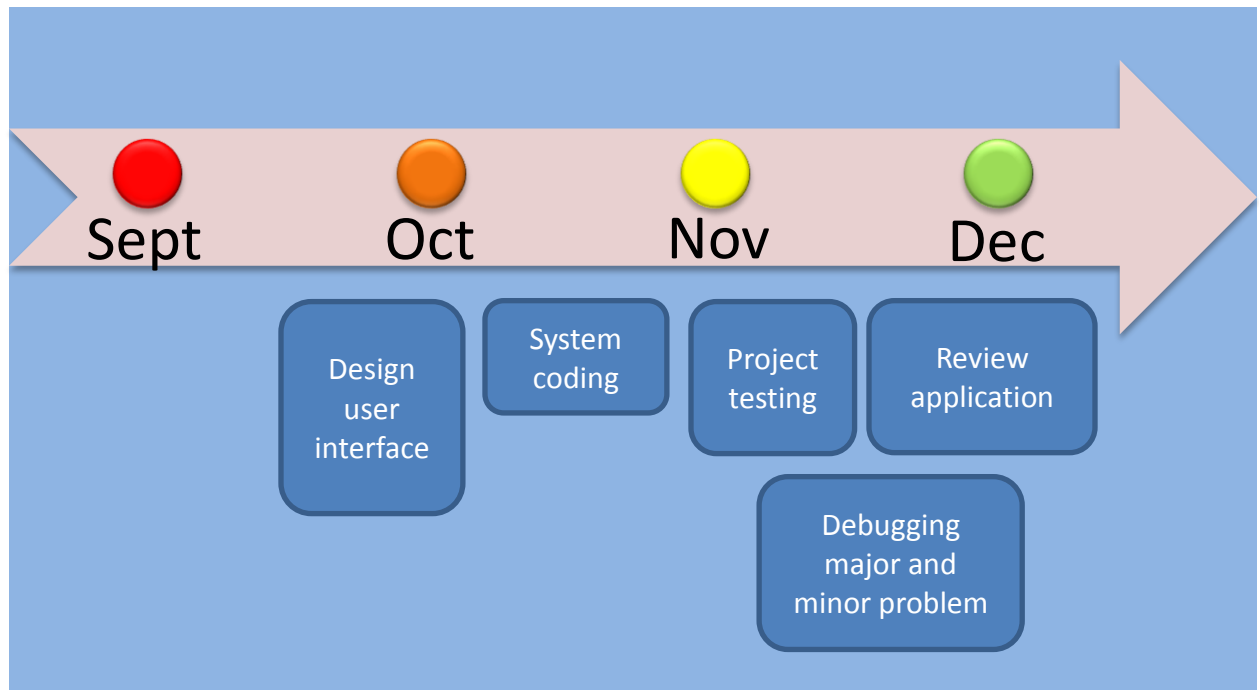


Figure 3.4: The key milestone for Receipt Box project in FYP2

Figure 3.4 shows the key milestone for completing the Receipt Box. The project starts on late of September for designing the user interface and followed by doing the system coding in October. Then, in the early of Nov, it is the stage of preparation for the project testing. Project testing will be executed to identify either the user requirements has been meet or not. The student will fix the problem by debugging major and minor problem in the project based on the project testing result. Lastly, in the month of December, the student will review the application and starts deliver it to the user.

3.4 REQUIRED TOOLS

Tools required are divided into two (2) aspects which are hardware and software

3.4.1 Hardware

- Android Devices (tablet/mobile phone)
- Personal computer
- Printer
- Broadband for Internet access

3.4.2 Software

- Eclipse IDE
- Java Development Kit
- Android SDK
- Android Device Manager
- DroidDraw
- Adobe Photoshop CS3

CHAPTER 4

RESULT AND DISCUSSION

In this section, it will be discussed about the result gained by a survey that has been conducted. A survey had been conducted (Appendix 1) to the targeted user which is business travelers. The survey consists of 16 questions and gets a feedback from 22 respondents. The survey is distributed to the staff of PETRONAS, staff of Universiti Teknologi PETRONAS and staff of government sector. The survey only distributed to a staff for any company is because to obtain the fullest results as they have experience in travelling for business purposes.

4.1 DISCUSSION OF FINDING

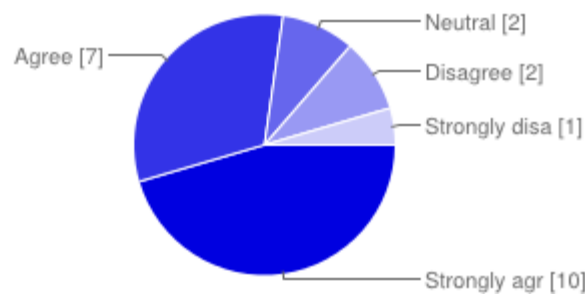
4.1.1 Section A: Demographic

As the survey has been distributed, 50% of the respondents are aged between of 26 years to 40 years old. This means that most of the respondents have experience at least two to three years of working. There are 50% of male respondents and another 50% female respondents. The survey is spread to the business travelers which are the people who are working. Most of the respondents are working with private sector which is 68% and another 32% are working with government sector. It can be concluded that most of the respondents are working in the area of engineering and technology. Then, 32% of the business travelers are doing business and another 14% are health care or science work area and accounting/ finance/ marketing/ sales work area respectively. Besides, 50% of the respondents are always travel for business or working purposes, 45% are often travelling and only 5% respondents are answering never travel. This means that most of the respondents have experience in travelling for business or working purposes. Then, the question in the survey is asking the respondents on the claiming of the travel expenses. 45% of the respondents are strongly agreed that they always claim their travel expenses. 36% of the respondents are agreeing that they always claim their travel expenses. This means that most of the respondents are claim their travel expenses to the company.

4.1.2 Section B: Travelling Behavior

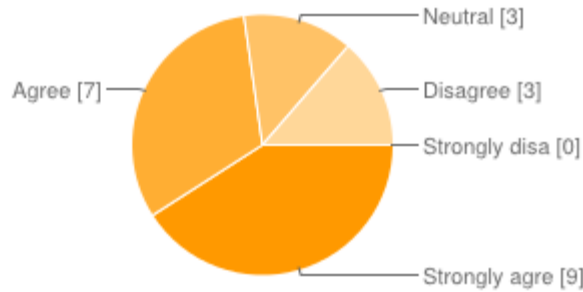
In this section, the student will discuss about the travelling behavior based on the survey conducted. The question that has been asked to the respondents is about travelling behavior of a business traveler. This is why it is so important to distribute the survey to the right people which is business traveler.

Question 1: My business travel receipts are all over the place



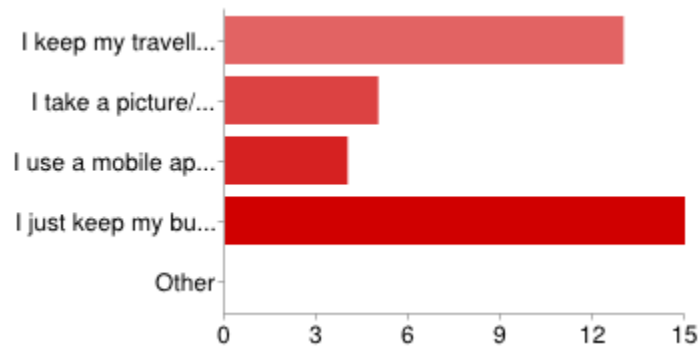
Next question on travelling behavior theme is asking whether the business travel receipts of the respondents are scattered all over the place. Most of the respondent strongly agreed with a percentage of 45% and 32% are agreed that the business travel receipts are scattered all over the place. Only 9% of respondents also think they are disagreed that the business travel receipts are all over the place.

Question 2: I always lost my business receipts when travelling



9 out of 22 respondents are strongly agreed that they always lost their business travel receipts when travelling. The question is asking the respondents to give rating from strongly agree to strongly disagree. Another 3 of the respondents are neutral and 3 are disagreed. 32% of the respondents feel that they are agreed that they always lost the business travel receipts when travelling.

Question 3: What is your way to keep and manage your business travel receipts?

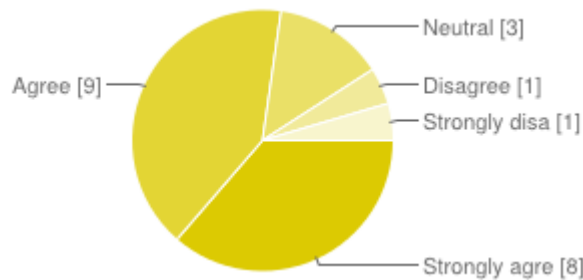


I keep my travelling business travel receipts in a paper folder/ file	13
I take a picture/ scan my business travel receipts and keep in a folder inside my computer	5
I use a mobile application that manage/ store my business travel receipts on my mobile phone	4
I just keep my business travel receipts in my pocket wallet	15
Other	0

Next, the question is asking the respondent's way to keep and manage the business travel receipts. Most of the respondents with a percentage of 41% answered that they keep the business travel receipts in pocket wallet. Another 35% are answering they keep their business travel receipts in a paper folder or file and 14% keeps and manage their business travel receipts by take a picture or scan the business travel receipts and keep in a folder inside the computer. That means most of the respondents did not have an application to keep and manage the business travel receipts.

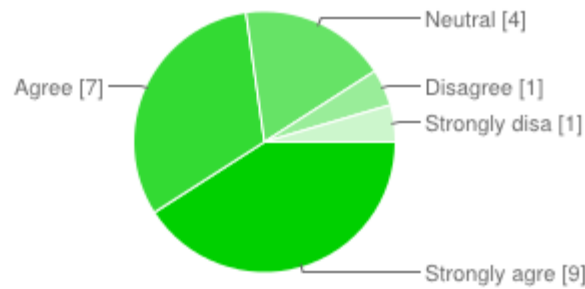
4.1.3 Section C: Challenges

Question 4: It is a challenge for me to keep my business travel receipts



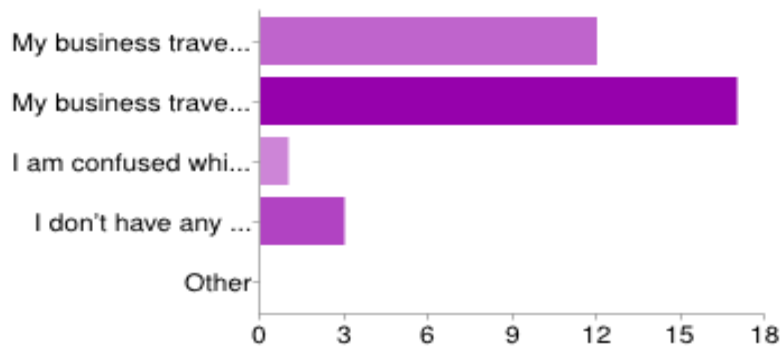
The next section is the challenges faced by the business travelers. The first question in this theme is asking the respondents whether they faced a challenge to keep the business travel receipts. Most of the respondents with a percentage of 41% agreed that it is a challenge for them to keep the business travel receipts and 36% of the respondents are strongly agreed. This means that most of the business travelers are facing a challenge to keep the business travel receipts as most of the business travel receipts tend to lost.

Question 5: I have difficulty to find my business travel receipts in the office when I want to submit my claim form



The next question is asking the respondents about having difficulty to find the business travel receipts in the office when want to submit the claim form. From the survey conducted, it can be concluded that most of the respondents having difficulty in finding the business travel receipts as 41% of the respondents are strongly agreed and 32% are agreed. It means that most of the business travelers having difficulty in finding the business travel receipts especially want to submit the claim form as the business travel receipts are scattered all over the place.

Question 6: The reason why it is a challenge for me to manage my business travel receipts are:

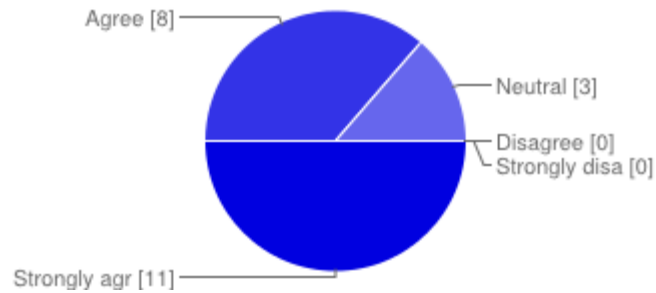


My business travel receipts are getting faded when I want to attach it to the company	12
My business travel receipts are lost and I don't know where I put them	17
I am confused which business travel receipts is belong to which business trip	1
I don't have any problem while attaching the business travel receipts to the claim form	3
Other	0

Then, the next question is asking about the reason it is a challenge for the respondents to manage the business travel receipts. 52% of the respondents think that their business travel receipts are lost and they do not know where they put the business travel receipts. Another 36% of the respondents believed that the business travel receipts are getting faded when they want to attach it to the company. Only 9% of the respondents did not have any problem while attaching the business travel receipts to the claim form. This question indicate that the nature of the business travel receipts which is easily getting faded and the business travel receipts are always lost are the biggest challenges for them to manage the business travel receipts.

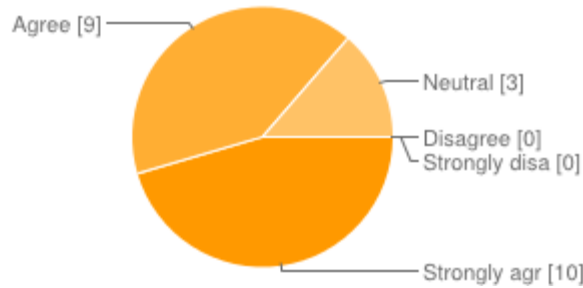
4.1.4 Section D: Perceived Usefulness

Question 7: I feel that Receipt Box is helpful in managing my business travel receipts



The next theme in this questionnaire is Perceived Usefulness. In this theme, the student wants to get feedback and opinion about the usefulness of developing Receipt Box. The first question being asked in this theme is the respondents opinion either Receipts Box is helpful in managing the business travel receipts or not. From the survey conducted, 50% of the respondents are believed that Receipt Box is helpful in managing the business travelers' business travel receipts. 36% of the respondents are agreed that Receipt Box is helpful and another 14% of the respondents are neutral to believe that Receipt Box is helpful in managing the business travel receipts for business travelers. This means that Receipt Box might be helpful in managing the business travel receipt if the business travelers are on business trips.

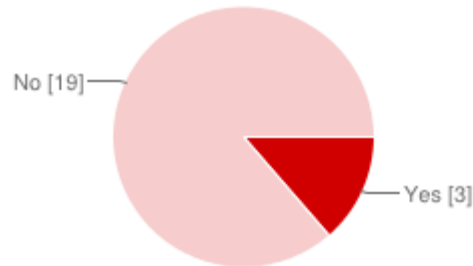
Question 8: I believe that Receipt Box will be an important tool for me to manage my business travel receipts



Then, the next question is asking whether the Receipt Box will be an important tool for the business travelers to manage the business travel receipts. From the survey conducted, it can be concluded that most of the respondents are strongly agreed and believed that Receipt Box will be an important tool for them to manage the business travel receipts. 45% of the respondents are strongly agreed and 41% are agreed. From this question, it can be concluded that Receipt Box or an application that store the business travel receipts are important tool for business travelers especially while they are on business trip.

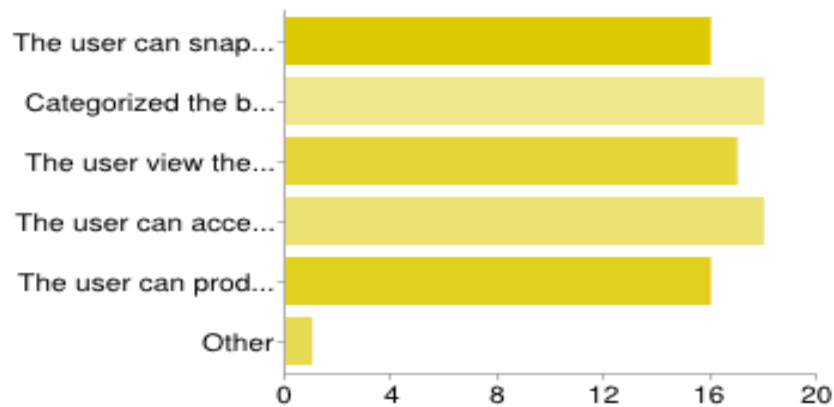
4.1.5 Section E: Proposed Receipt Box

Question 9: I am aware that there exists a mobile application that manages my business travel receipts



The last section in this questionnaire is to gather the opinion about proposed Receipt Box. The question is asking whether the respondents are aware that there exists a mobile application that manages the business travel receipts for business travelers. 86% of the respondents are answering they did not know that there is a mobile application that manages the business travel receipts. Another 14% are answering 'Yes' and they are aware about the mobile application. This can indicate that most of the business travelers are not aware about the mobile application that manages the business travel receipts. It is an opportunity to develop Receipt Box as not many developers are developing this type of service.

Question 10: If I am developing an application that manage business travel receipts, what are the function that you would like to have in the application?



The user can snap the picture of the business travel receipts	16
Categorized the business travel receipts according to the specific category such as transportation, meals and etcetera	18
The user view the database of stored information in the mobile	17
The user can access the database through website	18
The user can produce report and print out their claim business travel receipts through the website	16
Other	1

Next, this question is asking the opinion of the respondents about the function and any specific features they would like to have in Receipt Box. Most of the respondents would like to have the features of categorized the business travel receipts according to the specific category such as transportation, meals and etcetera with a percentage of 21%. Another 21% also thinks that the features of the user can access the database through website will be an important features in Receipt Box. 19% of the respondents also believed that the features of the user can produce report and print out their claim business travel receipts through the website also is important. There are 1% of the respondents are answering other and stated that the features of snap the picture of business travel receipts and it automatically detect the content without need to key in. This question indicate that most of the features that offered by Receipt Box is important and needed by the business travelers to manage their business travel receipts.

4.2 DISCUSSION

Based on the survey conducted, it shows that most the respondents are aged between 26 years old to 40 years old. This indicates that the respondents have more experience in travelling for business purposes. Besides, most of the respondents are come from the private sector and working in engineering or technology work area.

45% of the respondents are seldom traveling for business or working purposes and always claim their travel expenses. Besides, most of the respondents are strongly agreed that the business travel receipts are scattered all over place by the percentage of 45%. The respondents also strongly agreed that they always lost the business travel receipts when travelling. This is because the business travelers tend to keep the business travel in a paper folder or file and just keep the business travel receipts in pocket wallet. The business travelers are lacking of having a mobile application that manage and store the business travel receipts.

41% of the respondents are agreed that it is a challenge to keep the business travel receipts. It is also a difficulty for business travelers to find the business travel receipts in the office especially when the business travelers want to submit the claim form to finance department. The respondents are agreed it is a challenge is because the business travel receipts are lost and getting faded as kept it too long. This proved that Receipt Box would help the business travelers in managing the business travel receipts.

Most of the respondents believed that Receipt Box is helpful and will be an important tool for business travelers in managing the business travel receipts. However, 86% the respondents did not aware that there are mobile applications that manage the business travel receipts. This is an advantage to develop Receipt Box as many business travelers want more features from this project.

4.3 RECEIPT BOX SYSTEM FLOW

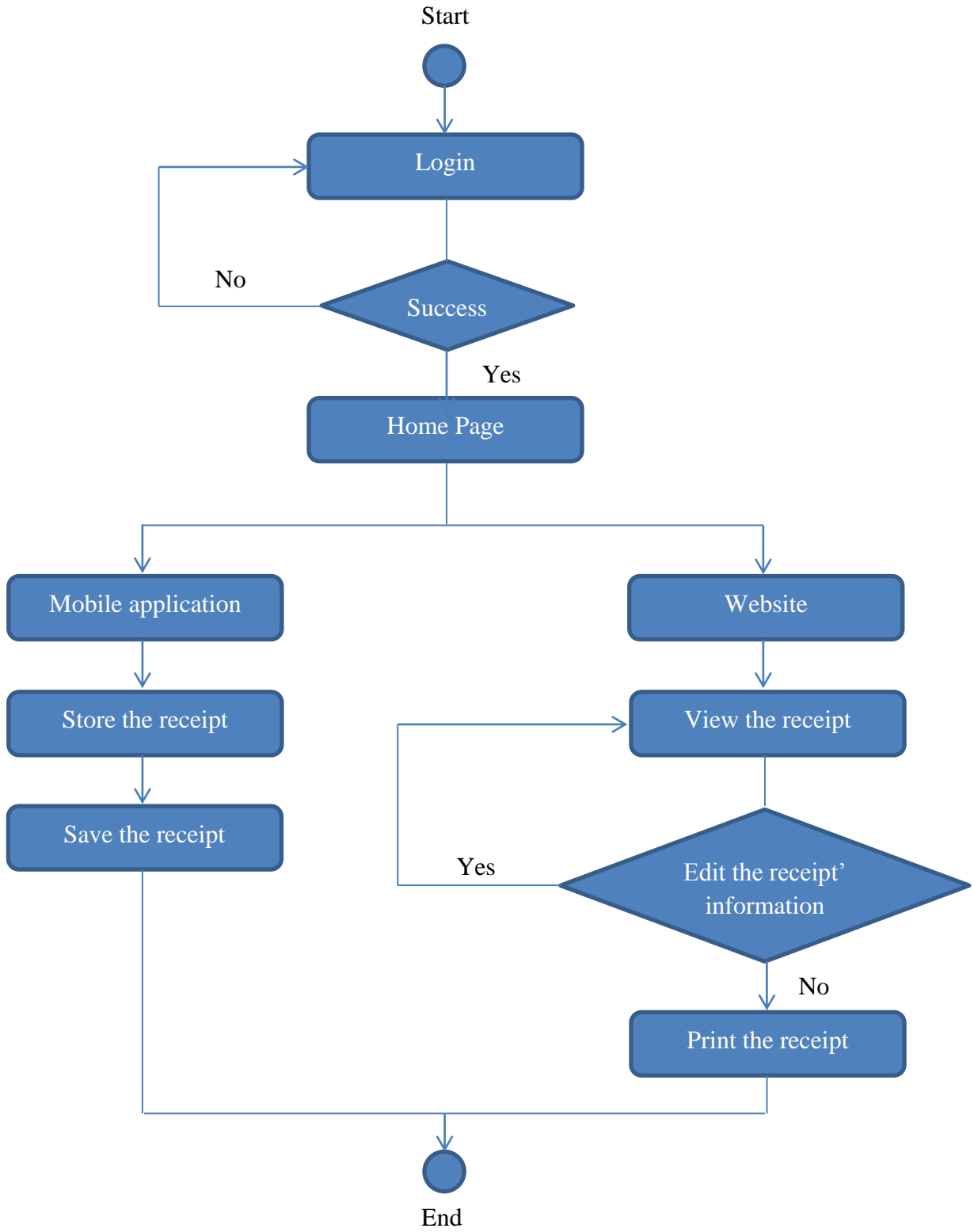


Figure 4.1: The flow chart of the system flow for Receipt Box

The figure 4.1 shows the flow chart of the system flow for Receipt Box. Based on the flow chart, the user needs to register username and password first. If the user succeeds to login, then it will proceed to the main page of Receipt Box. If the user fail to login, he needs to re-enter the username and password. The main page of Receipt Box is divided into two (2). They are Receipt Box's mobile application and Receipt Box's website. In Receipt Box's mobile application, the process starts when the user snaps the receipt image and captures the information. After that, the user has to save the information in order to make it accessible at Receipt Box website. Then, if the user wants the features producing the report and print out the business travel receipts, the user can access the Receipt Box web-based. The user still can edit the details of the business travel receipts in Receipt Box web-based. If the user wants to edit the details, he/she still can do so. If there are no details to add up, the user can proceed to the next step which is printing the business travel receipts and report. After that, the user can use the printed report and attach to claim form to get reimbursed of the expenses on the business trips.

4.4 RECEIPT BOX SYSTEM ARCHITECTURE

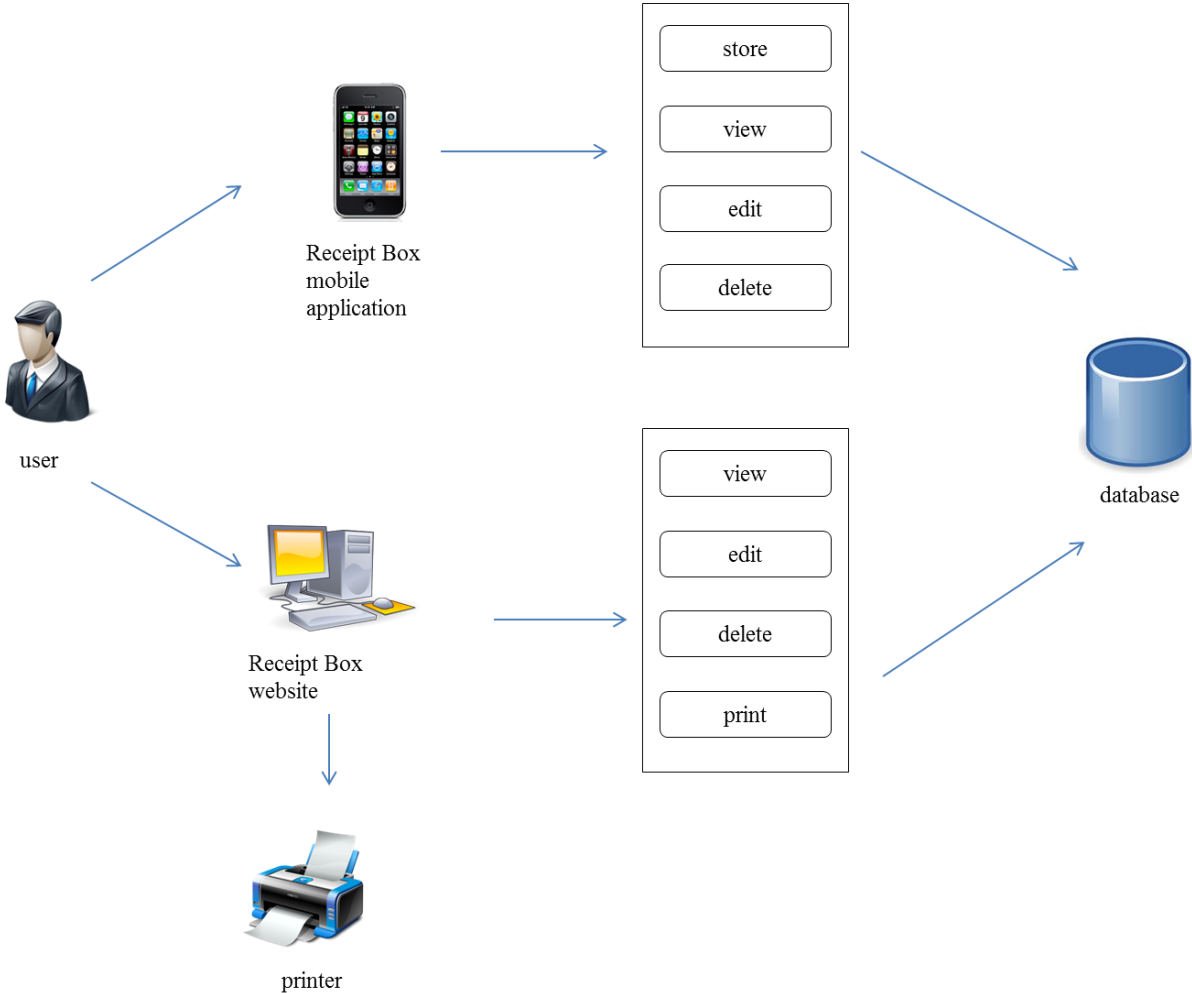


Figure 4.2: The system architecture of Receipt Box project

The figure 4.2 shows the system architecture of Receipt Box. The process of Receipt Box starts with the user login the system in an Android phone. In the mobile application system, the user can have the functions of store, view, edit and delete. All the information stored and gathered will be stored in a database. The user also can login in the website system to view the database. Receipt Box's website has the function of view, edit, delete and print. The system will access the same database that stored by using Receipt Box's mobile application. The user has extra function by using the website which is print function. By using Receipt Box's website, the user can print the receipt and report to attach to the company.

4.5 RECEIPT BOX PROTOTYPE



Figure 4.3: The screen shot of the main page for Receipt Box

Figure 4.3 shows the screen shot of the main page for Receipt Box. The user needs to key-in the username and password to login. The same username and password will be used for Receipt Box's website. Hence, all databases that stored in the mobile application will be automatically saved in the website.

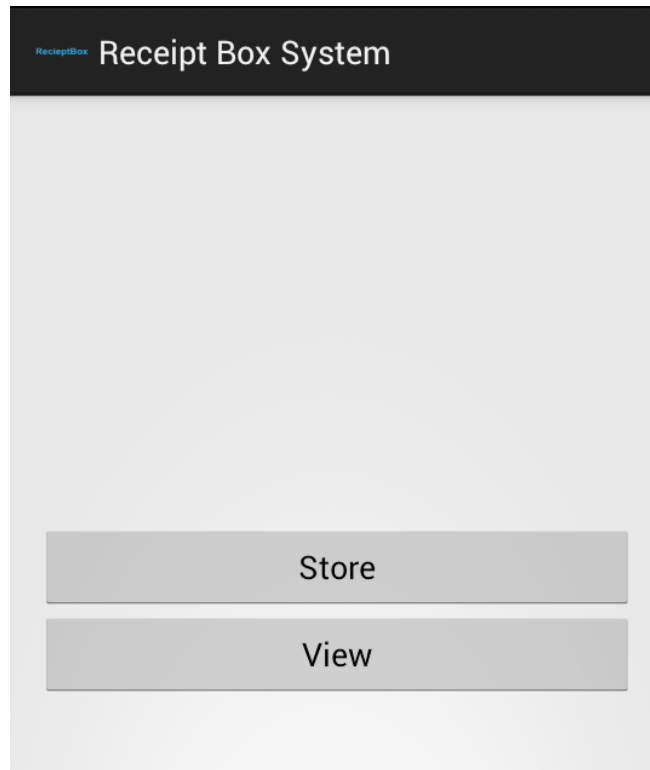


Figure 4.4: The page of main features in Receipt Box

The figure 4.4 shows the page of the main features available in the Receipt Box. After login, the user can store new database of business travel receipts by clicking the button 'Store'. The user also can view the stored business travel receipts by clicking the button 'View'. All the saved business travel receipt will be available for viewing.



Figure 4.5: The page of Receipt Box to store new database

The figure 4.5 shows the page to store new database. When the user wants to add new database of business travel receipts and click 'Store', it will lead to this page. The user can choose the category such as hotel, transportation, meals and others. This categorization according to the specific category can help the user to keep track the cash flow while on business trips.

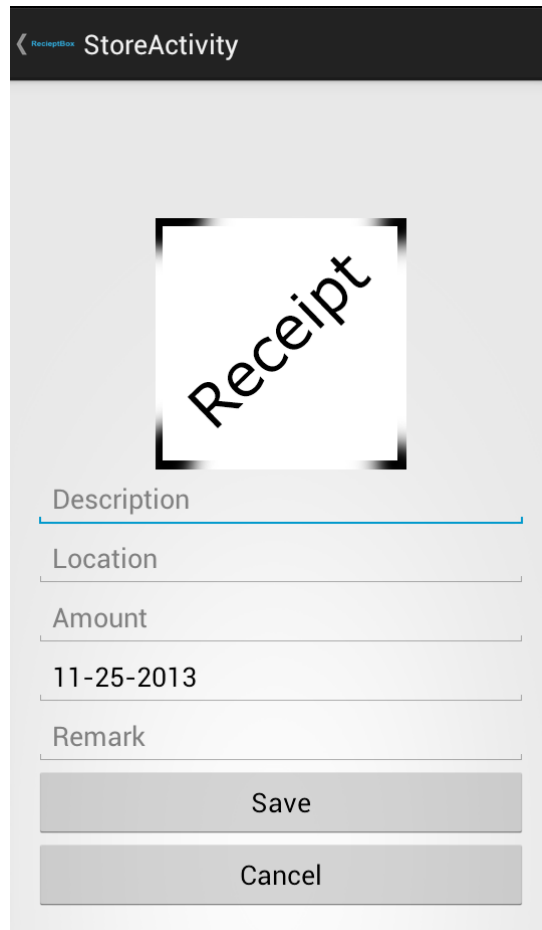


Figure 4.6: The screen page of ‘Store’ in Receipt Box

The figure 4.6 shows the screen page of ‘Store’. For example, the user wants to add expenses about ‘Transportation’, and then it will lead to this page. The user need to key-in the details and can snap the picture of the business travel receipts. The user need to key-in about the description, location, amount of the expenses, the date of the business trips and remarks. The user can snap the picture of the business travel receipts by click the ‘Receipt’ button. The ‘Receipt’ button will lead to the camera functions. Then, the user can save the new database. The entire database will be stored and the user can view from their smartphone or via Receipt Box website.

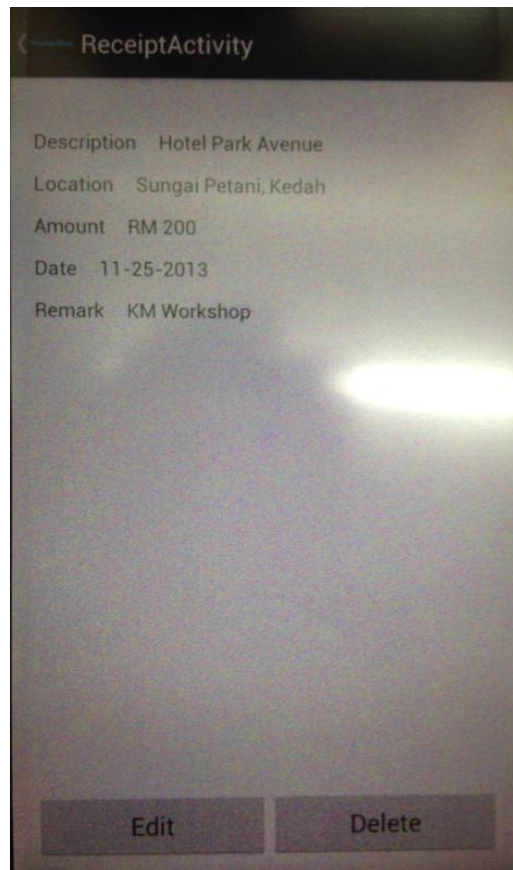
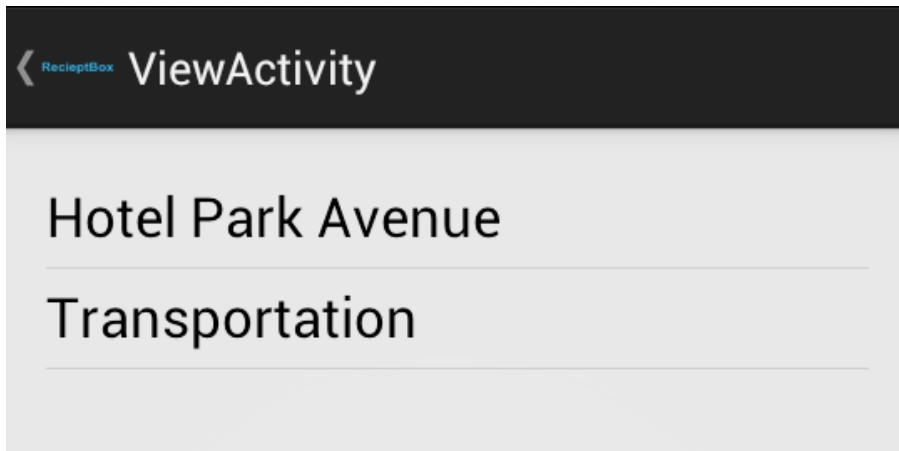


Figure 4.7: The screen page of 'View' in Receipt Box

The figure 4.7 shows the screen page of 'View'. If the user wants to view the stored database, it will lead to this screen page. The user has to choose which business travel receipt stored to review. For example, the user was clicked the "Hotel Park Avenue", and then it will lead to the next page which is the information of business travel receipt for "Hotel Park Avenue. The user can still edit the details of the business travel receipts after save it. The picture of the business travel receipts also available at this screen page.



Figure 4.8: The website of Receipt Box

The figure 4.7 shows the screen page of 'View'. By using the Receipt Box's website, the user can access, view and print the report of the business travel receipt to get reimbursed by the company. The user need to login by using the same username and password in order to get access to the website. The legality of the digital usage by using Receipt Box mobile application can be protected as it captures the data and the pictures. The user can easily manage their business travel receipt and not having problem of different sizes and shapes of business travel receipt.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

The Receipt Box intended to help the business travelers who are always travel on business trips. The business travelers should have an application that manages them for going mobile whenever they are. Based on the survey conducted, most of the business travelers believed that Receipt Box is an important in managing the business travel receipts in more systematic way. The Receipt Box just needs the user to snap the picture of the business travel receipts and fill in the details. Then, the user still can access the database through Receipt Box web-based to print the report. As the main target audiences would be the business travelers, the usability and user-friendliness features are the core elements that are going to be focused on. Overall, this application is simple to use and it is very effective for the busy people who are always on business trips.

5.2 RECOMMENDATION

There are still some improvement and features need to be added in Receipt Box in future in order to make it more reliable and effective while the business travelers are on business trips. At the next stage, the student needs to start developing the Receipt Box web-based and integrate it with the mobile application. Based on the survey conducted, there are some features that suggested by the respondent in order to improve the quality of Receipt Box.

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APPENDIX

1. QUESTIONNAIRE

Introduction

The development of Receipt Box will help travelers to manage their traveling receipts into a more systematic way. The Receipt Box requires users to key- in specific details about their traveling receipts and it will stores the data securely. It is very helpful for the business travelers as they can key-in the data immediately and attaching the receipt by not worrying the receipt is lost. The idea of developing this application is to avoid faded receipt and the problem of losing the claim receipt. The objective of this survey is to gather information about problems usually faced by business travelers to claim their travel expenses. Thank you for your participation.

❖ **Section A: Demographic**

1) Age

- a. 18 and below
- b. 19-25
- c. 26-40
- d. 40 and above

2) Gender

- a. Male
- b. Female

3) You work in

- a. Government sector
- b. Private sector
- c. Others: _____

- 4) Field of work
- a. Business
 - b. Engineering/ Technology
 - c. Health Care/ Science
 - d. Accounting/ Finance/ Marketing/ Sales
 - e. Entertainment/ Music/ Film/ Arts
 - f. Others: _____

❖ **Section B: Travelling Behavior**

- 5) I always travel for business/ working purposes
- a. Often
 - b. Seldom
 - c. Never
- 6) I always claim my travel expenses
- a. Strongly agree
 - b. Agree
 - c. Neutral
 - d. Disagree
 - e. Strongly disagree
- 7) What is your way to keep and manage your business travel receipts? (*Participant can tick more than one*)
- a. I keep my travelling business travel receipts in a paper folder/ file
 - b. I take a picture/ scan my business travel receipts and keep in a folder inside my computer
 - c. I use a mobile application that manage/ store my business travel receipts on my mobile phone
 - d. I just keep my business travel receipts in my pocket wallet
 - e. Others: _____

8) My business travel receipts are all over the place

- a. Strongly agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly disagree

9) I always lost my business receipts when travelling

- a. Strongly agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly disagree

❖ **Section C: Challenges**

10) It is a challenge for me to keep my business travel receipts

- a. Strongly agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly disagree

11) I have difficulty to find my business travel receipts in the office when I want to submit my claim form

- a. Strongly agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly disagree

12) The reason why it is a challenge for me to manage my business travel receipts are:

(Participant can tick more than one)

- a. My business travel receipts are getting faded when I want to attach it to the company
- b. My business travel receipts are lost and I don't know where I put them
- c. I am confused which business travel receipts is belong to which business trip
- d. I don't have any problem while attaching the business travel receipts to the claim form
- e. Others: _____

❖ **Section D: Perceived Usefulness**

13) I feel that Receipt Box is helpful in managing my business travel receipts

- a. Strongly agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly disagree

14) I believe that Receipt Box will be an important tool for me to manage my business travel receipts

- a. Strongly agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly disagree

❖ **Section E: Proposed Receipt Box**

15) I am aware that there are exist a mobile application that manages my business travel receipts

- a. Yes
- b. No

16) If I am developing an application that manage business travel receipts, what are the function that you would like to have in the application? (*Participant can tick more than one*)

- a. The user can snap the picture of the business travel receipts
- b. Categorized the business travel receipts according to the specific category such as transportation, meals and etcetera
- c. The user view the database of stored information in the mobile
- d. The user can access the database through website
- e. The user can produce report and print out their claim business travel receipts through the website
- f. Others: _____