DESIGN AND DEVELOPMENT OF AN APPLICATION FOR AN INDIVIDUAL INSURANCE AGENT

BY

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A REPORT

SUBMITTED TO

Universiti Tunku Abdul Rahman

in partial fulfilment of the requirements

for the degree of

BACHELOR OF INFORMATION TECHNOLOGY (HONS) INFORMATION SYSTEMS ENGINEERING

Faculty of Information and Communication Technology

(Perak Campus)

SEPTEMBER 2015
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Date     : __________________
ACKNOWLEDGEMENTS

I would like to express my sincere thanks and appreciation to my supervisors, Ms. Chan Lee Kwun who has given me a chance to engage in Web-based Project. Moreover, she also provided me a lot of ideas and feedback for completing this project. When I am feel give up, she guided me during the project. It is my first step to establish a career in design field. A million thanks to you.

Apart from that, I would like to thanks and appreciation to my moderator, Ms. Wong Pei Voon who has given me a lot of challenge in this Project. Besides, she has provided me a lot of interesting idea and let my project more powerful and valuable.

Finally, I must say thanks to my family and my friends for their support, love and continuous encouragement throughout the course.
ABSTRACT

In this report, Insurance Agent System is developed to solve some problems that faced by the users, especially the agent. It has significant effect for them as they need to perform their tasks faster, ease for them to use, and convenient for them. The report also explains about how the problem occurs for the insurance agents and how Insurance Agent System can solve the problem effectively. There are 8 modules implemented to improve the existing system. Seven out of eight modules are used to solve the existing problems. Another one module is a special module that considered as a new idea. Therefore, the agents can easily handle their jobs by using Insurance Agent System.
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Chapter 1 Introduction

1.1 Project Title

- Design and Development of an Application for an Individual Insurance Agent

1.2 Motivation and Problem Statement

- Existing Insurance Agency System is not easily to register an account as an agent and not easily to login the system.
  - Agent needs to request for an account by sending a form letter and submit it to the insurance companies, and then login with their particular ID number. Some of the agent are also not well in memorizing, so they unable to remember the longer ID number.

- Existing Insurance Agency System does not notify the customer when their insurance is opened to a new or renewed.
  - The customer does not know their insurance is being opened or not, this may cause some cheating cases, which may also affect the customers’ trust towards the agent. For instance, an agent takes the money from a customer without open the insurance to them.

- Existing Insurance Agency System does not allow the agent and customer to view back their details in a list.
  - The agent cannot views back their last time details such as cover note and quotation that they had opened last time.
• Existing Insurance Agency System is sending the reminder of insurance date that is expire soon by letter to their customer, and does not remind the agent for bank-in payment after the insurance money is collected from customer.
  o When the customer’s vehicle insurance expire date is on next week, the letter will arrive to recipient lately about 1-2 days after the date expired. The existing system will not remind the busy agent when the bank-in date is near to expire, therefore some of the agents have been in black-list due to they does not bank-in the collected money.

• Existing Insurance Agency System does not auto input the customer’s details and vehicle details.
  o The agent must take some times to key in the customer’s details and vehicle details manually by themselves.

• Existing Insurance Agency System is only can print by agent and view in hardcopy after printed.
  o The agent needs goes to the print page to print, and then just can view it after printed.

• Existing Insurance Agency System cannot amend their privacy information easily such as username, password, address, email, and telephone number.
  o The agent cannot changes the password immediately when it is leak out to hacker.
• Existing Insurance Agency System needs to quote all information with all names, birthday, ID no., address and phone number to know the price of insurance.
  o Very troublesome to key in the all inputs, it takes a very long time to done it and need redo when typo error happen.

1.3 Project Scope

This project will develop and deliver an enhanced and effective insurance agency system. The system will give the user to ease of use and more convenience. It can be helpful in the agent’s thinking, action and planning to be successful like the owner of company.
1.4 Project Objective

- To study what is the current practice / product in the market.
- To develop an Individual uses Insurance Agency System prototype for managing his/her own record which consists of the following modules/functions:
  - Module 1:
    - To develop a Login module, which allows the user to login with the customize username and protect the user’s customer privacy data from leak out.
  - Module 2:
    - To algorithm an Auto Notification Service module, which able to notify the customer when their insurance was opened.
  - Module 3:
    - To produce a Data Management Table - UI Interface module, which can provide an easy way to manage the customer details.
  - Module 4:
    - To algorithm a Reminder module, which can remind the agent to submit the amount of insurance payments to Company and remind the customer about the date of their insurance cover that is coming soon expire.
  - Module 5:
    - To develop a Searching and Auto Input module, which allows them to search the details and auto input in shorter time by customer IC number and Vehicle Number.
Module 6
- To develop a Printing module, which can print out the result in PDF file that can be downloaded and printed into hard copy.

Module 7
- To develop a Settings module, which allows the user to set their details such as name, email, telephone, and address.

Module 8 (New Special Module):
- To develop a Quotation module, which allows the agent to quote an insurance price in a shorter time. And so far, all the insurance companies have not had this function yet.


1.5 **Project Innovation and Contribution**

- To employ a login method that can type in simple username and be more secure for system. To protect the user’s customer details.
  - The login method allows the user to set a username that is easy memorize for them. Besides, it is also allowed the user to store and manage the customer’s insurance, and also can gain other benefits such as reminder and notification to a specific user.

- To improve the notification module that enable to notify the customer when their insurance was opened.
  - It will notify the customer when insurance was opened. By using this module, it can avoid the cheating cases such as customer just directly pays the money for open insurance, but they do not know whether their insurance is really opened or not.

- To improve the data management view from coding to table with UI Interface. Information or details view UI Interface can save much time for agent to view the data.
  - The user can easily view the details nicely and will not looked messy.

- To improve the reminder method from letter to e-mail, so it can directly remind both agent and customers. It remind also the agent to submit the payment due within expire date period. This module can also solve the financial problem of company because email is free of charge.
  - When the customer’s insurance deadline is before 15 days, it will automatically generate the email and notify the customer. When agent payment due submission date is near, the pop up message reminder will keep remind the agent until it is submitted.
• To employ the searching and auto input module, which can allow the agent to search the customer and auto input the information in shorter period used in open insurance.
  o The agent can fast auto input by searching the details of customer and it can reduce the time of type the information one by one.

• To employ printing module that can allows the agent to print in PDF view from result of Cover Note and Quotation.
  o This allow the agent to view, download and print the PDF to hard copy. Customer can also view back the PDF and print out the report according by policy number.

• To employ settings that allows the agent to amend the profile details for themselves such as email, name, username, and password.
  o This allows the user to get more customization on their details for comfortable and flexible purpose, therefore the user no needs contact with the system provider to amend their details.

• To employ quotation that allows the agent to calculate the price briefly with less input and less time.
  o Take a shorter time to input the information and its outcome with the price of insurance.
1.6 Background Introduction

Insurance can be known as a premium or a form of risk management that giving monetary compensation to another entity for the cost of potential loss incurred (Pareto n.d.). Insurance can be sort in many forms such as life insurance, long-term care insurance, and burglary insurance and others. Insurance is also a kind of protection or a safety for human because we feel a need of security to lower down the risky. Thus, insurance allows individuals, business, and other entities to protect their significant financial losses at a reasonably affordable rate due to unexpected disasters. For example, if you are the main contribution of income in your family, there is significant loss and financial hardship when you died. At this time, the insurance makes sense in which monthly premium will replace your income to survive your family life. Therefore, as your life situation changes, you will need insurance. Thus, an insurance agent takes place to help you with an annual insurance review.

Insurance agents are licensed in conducting the business on behalf of insurance companies. They usually operate with insurer under the term of an agent agreement, and help the insurer to manage their insurance process. The insurer-agent relationship can be operated in many different forms, such as independent, exclusive, insurer-employed and self-employed (The Role of Insurance Intermediaries n.d.). For instance, agents are independent when they work with more than one small insurance company, and agents are exclusive when they are selling one business line for each of several companies or represent one insurance company in one geographic area.

Insurance agents are playing a vital role in insurance industry. They provide financial advisory services and customer support to the customers. Whenever customers ask for the best insurance products or services, the insurance agents must deliver the customers’ desired insurance products or services that suit their requirements. And, when the customers talk to an agent, they will get insight on coverage that best suit their needs and they feel their investments are best protected too. Insurance agent also helps in promoting and selling insurance products and services to its customers. For example, a life insurance agent can not only sell the life insurance policy, they also can sell or promote general insurance such as health insurance, disability insurance or other financial packages like mutual funds and other securities to the customers (Role and Responsibilities 2014).
Chapter 2 Literature Review

2.1 Literature review

2.1.1 Login Module

Login module is the most important module to users because it can identify an agent and allow the agent to save the data such as customer insurance history and payment information and other interactions (Yvonne 2015). It can also easily be managed by the system, in which the particular customer, vehicle, and insurance are belong to which agent. Therefore, the agent will not get messy in managing the data. Moreover, it puts also the user details as watermark at the bottom of cover note and quotation, so the customer can find back his or her particular agent.

Figure 2.1 Login from UTAR Portal (UTAR Portal 2014)

Figure 2.1 above shows an example of login form in UTAR Portal. The purposes to login the UTAR Portal are want to get the latest announcement, latest schedule, email, and final exam result. Therefore, if there is no have login module, it is hard to identify the particular student and disseminate the latest information to them.
2.1.2 Notification Service for the insurance System using Electronic Mail Message (EMM)

The notification to the recipient is very important because it can notify the recipient about any important notices, so they will not miss up on them. Frequently now most of people have own individual electronic mailbox to receive the message such as announcement, reminder, notification, and advertisement. For the company, a successful organization should have to interact and communicate with different audiences such as customers, employees, partners and suppliers by sending the e-mail (Ibrahim A.S.M et al 2009).

Figure 2.2 System Module for send email (Ibrahim A.S.M et al 2009)
The explanation from Figure 2.2 above is after done the process in website, the server will check the condition in database. Once result is shown okay, the database will automatically send to mail server, and then mail to the particular person.

This module in this insurance system can provide more convenience ways to the company and also the customers. This is because it will automatically send the notification in form of electronic mail to the customer. For example, when the customer’s insurance is renewed or new, the system will automatic generate the email notification to notify the customer. Therefore, the customer will get the notice from their message about their insurance, which may also can reduce the scam for business.

![New sign-in from Chrome on Windows](image)

Figure 2.3 UTAR Portal Reminder (UTAR Portal 2014)

The example shown in Figure 2.3 above is about the Google has notify its user that he or she is new sign-in in another computer. So, the user will get attention on his or her account is being hacked or not. This has shown that the notification module is very important for e-commerce.
2.1.3 Data Management Table

Data Management Table is a best way to the users who are the agent, to help them to view the data easily by UI Interface view. Compare to the coding-based, the user must hire someone who has MySQL skill to manage the report. The benefits of this function is it is portable, in which it can be managed in anyway and not just in the office or working place. In addition, it is also allows the user to manage the data easily in table view. Therefore, users with zero technical skill can also have a look the data with no SQL coding.

![Manage Aviation Trainer Table](image)

**Figure 2.4 Data Management Table (Anbuselvan 2015)**

![MySQL Command](image)

**Figure 2.5 MySQL Command (Robert, E 2014)**

The Figure 2.4 above shows that the table view of data management is used to view the data without any technical skills needed. The Figure 2.5 shows there is need of database language with technical skill such as DDL, DML, DQL, DCL, and DTL. The advantage in using this module is easily to view compared to coding-based above
in Figure 2.5. Moreover, whenever the users are at somewhere, they still can access the web application to view it, and get history and details of data.
2.1.4 Reminder Module

The reminder is much different with notification, and it is very useful to the user compared with notification, because it can remind the user daily or it will remind the user about any important task when they opened the web application. The difference between reminder and notification is reminder keeps reminds the user until the task is completed, whereas notification just notify the user about the latest message once time. Therefore, it is easier to motivate or push the user to achieve something.

The reminder is to remind the agent about the submission of payment due of customers' insurance that need to pay to the insurance company, because the money payment is kept by the agent. Besides, it is also reminds both agent and customers about customers' insurance date is expire soon. There is only the way to reduce any miss out to submit the payment and not miss out the insurance date (John M.G et al 2014).

Figure 2.6 UTAR Portal Reminder (UTAR Portal 2014)

Figure 2.6 above illustrates the reminder used by UTAR and it is also apply to insurance system in similar concept to notify the agent to submit the payment due. Figure 2.6 above is an example of the reminder of UTAR Portal, in which to remind
the students to fill in their account number in order for UTAR can be easily to refund. In addition, the students cannot ignore this important reminder as they will keep face it when they opened UTAR portal every time until they fill in their account number completely.

Figure 2.7 Notifications from UTAR mail (UTAR Portal 2014)

Figure 2.7 above is also one of the example to illustrate the reminder of UTAR through electronic mail message, which also implies the similar concept in insurance system. Figure 2.7 shows about the reminder of MUET message. It reminds all of the students to submit their MUET result to FGO, but some do not submit yet. So the UTAR mail server will multicast who are not submitting the MUET result yet, and then that particular students will submit their result soon once they received the notification from UTAR mail.

So, this module applies in insurance system can remind the customers and agents when the insurance date is expire soon. Therefore, they can renew the insurance before expire date.
2.1.5 Searching and Auto input Module

Nowadays searching and auto input module is becoming more important to web based system because it can save a lot of time to re-input for a same person. This is a good solution to overcome the problem of more inputs in the form. The function of this module is to allow the user input the details and search inside the database, then it will auto input the last time information to particular column fields. Moreover, when the input sent to the database, the database is going to match with the input. When they had been matched, the output will auto input to particular column fields. Therefore, searching and auto input module is to help the user to save their time and be more convenience to use.

Figure 2.8 search and auto input (Auto Form 2015)

Figure 2.8 above shows an example of how the user searches the input and gets the auto input to others particular column fields. The user inputs the information in
customer’s ID number, then search in database, and the result will auto input to others particular column.
2.1.6 Printing Module

The print is an output of an object that brings many meanings such as print on screen, print on paper, and others. People like to view or save the softcopy rather than save in hardcopy, because it wastes the place or capacity for storing the hardcopy if it is in large quantities. Therefore, PDF file is more suitable and compatible to all machines. It prints the document in an electronic image that can view, save, print into hard copy, or forward to someone else (John 2010).

Figure 2.9 PDF embed viewer in HTML (Michael 2015)

Figure 2.9 above shows that the PDF file is viewed in HTML, so the customers no need to download again the file. They can direct view the content of PDF, and it is easier to use and save the place for them. In insurance system, it can be applied in auto
generate the result and direct to view the content of PDF. Thus, they can save in the machine and print on paper when they want to keep it.
2.1.7 **Settings Module**

Settings is important also for a user, because it can customize the privacy information of the user. In common practices, the user can customize their name, username, password, address, telephone number, and others. User will feel annoy when there is no have settings page.

![Figure 2.10 Settings in Facebook page](Facebook 2015)

The Figure 2.10 above shows that there is a settings page in Facebook Web, the user can simply change the name, username, password, email, and others, but some of the settings need to verify whether it is unique such as username and email. Therefore, insurance system can also apply with this module, in which the agent can direct change their privacy information without any contacts with the company.
2.1.8 Quotation Module

All the companies have not done the quotation module before, thus many agents complaint that they need to insert all information (input) that take much time to process and take time to log in the system in order to make quotation on it. Therefore, quotation module is very useful in Insurance Agency System because it allows the agent to take a shorter time to quote a numbers of prices that the person can insure.

Figure 2.11 Quotation of car insurance (Money Super Market 2014)

Figure 2.11 above shows that the quotation module allows the agents to quote the price of insurance for the car without log in the system. So, the agents can save their time in quoting the price. In this insurance system, it is quoted 3 companies such as AMG, Kurnia, and Zurich at a same time, and also shows the recommendations to customers on which company they should go for in order to gain more benefits.
### 2.2 Comparison of AMG, Zurich, Kurnia and Individual use Insurance agent system.

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<th>AMG</th>
<th>Kurnia</th>
<th>Zurich</th>
<th>My system</th>
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<td>1. Login Module</td>
<td>Login by ID number</td>
<td>Login by ID number</td>
<td>Login by ID number</td>
<td>Login by username</td>
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<tr>
<td>2. Notification services by using E-mail</td>
<td>Do not notify.</td>
<td>Notify the customer through SMS.</td>
<td>Do not notify.</td>
<td>Notify the customer through Email.</td>
</tr>
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<td>3. Data Management Table</td>
<td>Can view all histories of insurance cover note in a particular vehicle.</td>
<td>Can view all histories of insurance cover note in a particular vehicle.</td>
<td>Can view only the previous insurance cover note in a particular vehicle.</td>
<td>Can view all histories of insurance cover note with all vehicles and customers details.</td>
</tr>
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<td>4. Reminder</td>
<td>Do not remind on submission of payment due. Remind only the agent about the customer’s insurance cover period before 2 months of date expire soon.</td>
<td>Remind the agent to submit the payment due by pop-up message. Remind the customer before 1 month of insurance cover period date expire soon through SMS.</td>
<td>Do not remind on submission of payment due. Do not remind customer when customer insurance cover period date is expire soon.</td>
<td>Remind the agent to submit the payment due by using pop-up message. Remind the customer before 1 month of insurance cover period date expire soon through email.</td>
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Table 2.1 Comparison of 3 companies (Part 1 of 3)
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<th>AMG</th>
<th>Kurnia</th>
<th>Zurich</th>
<th>My System</th>
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<td>5. Searching and Auto Input Module</td>
<td>Can search all information even under other agents, and auto input to others particular column fields.</td>
<td>Can search all information even under other agents, and auto input to others particular column fields.</td>
<td>Can search information only under the particular agent, and auto input to others particular column fields.</td>
<td>Can search all information even under other agents, and auto input to others particular column fields.</td>
</tr>
<tr>
<td>6. Printing Module</td>
<td>It allows agent only to view in pdf file in Google Chrome without any support of embed source.</td>
<td>It must go through many steps, then just can reach in re-print page. It allows agent only to view in pdf file in Google Chrome without any support of embed source.</td>
<td>It allows agent only to view in pdf file in Google Chrome without any support of embed source.</td>
<td>It is only 1 step to reprint page. It allows agent and customer to view the history of insurance cover note and quotation in embed source.</td>
</tr>
</tbody>
</table>

Table 2.2 Comparison of 3 companies (Part 2 of 3)
<table>
<thead>
<tr>
<th></th>
<th>AMG</th>
<th>Kurnia</th>
<th>Zurich</th>
<th>My System</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Settings Module</td>
<td>Must go HQ department to make endorsement, then just can update the privacy information.</td>
<td>Must go HQ department to make endorsement, then just can update the privacy information.</td>
<td>It is easily to update the user’s privacy information without go through the HQ department.</td>
</tr>
<tr>
<td>8.</td>
<td>Quotation</td>
<td>Must type all the details, including customer, vehicle, and insurance, then just can know the answer.</td>
<td>Must type all the details, including customer, vehicle, and insurance, then just can know the answer.</td>
<td>Type within 5 column only, then will have outcome with 3 answers with different insurance company, and get the recommendation. They can also view or reprint the quotation result.</td>
</tr>
</tbody>
</table>

Table 2.3 Comparison of 3 companies (Part 3 of 3)
2.3 Fact - findings

This phase is going to interview an agent who is deputy in the insurance company of AMG and Zurich. She has more than 15 years working experienced about the existing system of insurance. She said the insurance system updated was very slow, and maybe the company has this idea, but it is takes much times to implement it. Therefore, the existing system causes her much troublesome when she was new. Moreover, some of companies exist still using hard copy handwriting to renew insurance, this causes the customer has to wait for a week to send it to the company and system of JPJ road tax, then just can open it and make payment.
2.3.1 Data Collection

She has requested some of the functional to combine with the existing system to run perfectly. Table below shows the functional table list, and figures below show the data collected from her about the guides in calculating insurance prices of 3 different companies.

<table>
<thead>
<tr>
<th>Functional</th>
<th>Apply for this new system</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Notification</td>
<td>Yes</td>
</tr>
<tr>
<td>2 Quotation</td>
<td>Yes</td>
</tr>
<tr>
<td>3 Sorting</td>
<td>No</td>
</tr>
<tr>
<td>4 Self-learning</td>
<td>No</td>
</tr>
<tr>
<td>5 Reminder</td>
<td>Yes</td>
</tr>
<tr>
<td>6 NCD auto check</td>
<td>No</td>
</tr>
<tr>
<td>7 Searching module</td>
<td>Yes</td>
</tr>
<tr>
<td>8 Data management table – UI interface</td>
<td>Yes</td>
</tr>
<tr>
<td>9 Printing module</td>
<td>Yes</td>
</tr>
<tr>
<td>10 Settings module</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 2.4 Table of Data Collection
Figure 2.12 Table list of Loading of Motorcycle Comprehensive and Third Party for AMG and Kurnia Insurance Company
Figure 2.13 Table list of Loading of Motorcycle Comprehensive and Third Party for Zurich Insurance Company
Figure 2.14 Table list of Loading of Private Car Comprehensive for AMG and Kurnia Insurance Company
### Table List of Premium of Motorcycle and Private Car for AMG, Kurnia, and Zurich Insurance Company

**Private Cars**

<table>
<thead>
<tr>
<th>Cubic Capacity Not Exceeding</th>
<th>Comprehensive (RM)</th>
<th>Third Party (RM)</th>
<th>Act (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400</td>
<td>283.85</td>
<td>108.45</td>
<td>97.30</td>
</tr>
<tr>
<td>1600</td>
<td>292.00</td>
<td>121.50</td>
<td>108.00</td>
</tr>
<tr>
<td>2300</td>
<td>332.80</td>
<td>135.80</td>
<td>122.40</td>
</tr>
<tr>
<td>3000</td>
<td>355.30</td>
<td>150.30</td>
<td>136.50</td>
</tr>
<tr>
<td>4100</td>
<td>365.85</td>
<td>169.35</td>
<td>147.50</td>
</tr>
<tr>
<td>4350</td>
<td>416.30</td>
<td>176.40</td>
<td>158.40</td>
</tr>
<tr>
<td>4400</td>
<td>468.00</td>
<td>190.80</td>
<td>172.80</td>
</tr>
<tr>
<td>Over 4400</td>
<td>478.38</td>
<td>209.85</td>
<td>183.60</td>
</tr>
</tbody>
</table>

**Private Motorcycles**

<table>
<thead>
<tr>
<th>Cubic Capacity Not Exceeding</th>
<th>Comprehensive (RM)</th>
<th>Third Party (RM)</th>
<th>Act (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>72.60</td>
<td>30.60</td>
<td>27.80</td>
</tr>
<tr>
<td>100</td>
<td>96.20</td>
<td>36.80</td>
<td>32.65</td>
</tr>
<tr>
<td>125</td>
<td>119.80</td>
<td>41.30</td>
<td>37.20</td>
</tr>
<tr>
<td>225</td>
<td>136.40</td>
<td>60.70</td>
<td>48.80</td>
</tr>
<tr>
<td>380</td>
<td>186.10</td>
<td>64.30</td>
<td>56.20</td>
</tr>
<tr>
<td>500</td>
<td>210.10</td>
<td>73.60</td>
<td>67.56</td>
</tr>
<tr>
<td>550</td>
<td>239.79</td>
<td>82.90</td>
<td>74.60</td>
</tr>
<tr>
<td>Auto Cycles and Mechanically Assisted Pedal Cycles under 50cc</td>
<td>36.90</td>
<td>22.00</td>
<td>18.60</td>
</tr>
<tr>
<td>Auto Cycles and Mechanically Assisted Pedal Cycles over 50cc</td>
<td>48.40</td>
<td>22.70</td>
<td>18.80</td>
</tr>
</tbody>
</table>

Figure 2.15 Table list of Premium of Motorcycle and Private Car for AMG, Kurnia, and Zurich Insurance Company
Chapter 3 System Analysis and Design

3.1 Methodologies

Figure 3.1 Phased Developments

The methodology of the system selected for developing Insurance Agency System is Phased Development. Phased Development breaks the system into a sequence of version. Each version has its own Analysis, Design, Implementation phases which are in a smaller scale compared to the overall system. This method delivers the useful system to the users quickly, however it does not cover all functions yet. The initial of first version is very important to identify the fundamental functions, so analysis of system must be in-depth. For example, when the version 1 has some bugs or errors, it will be debugged on next version until the whole system is satisfied.
3.2 Tools and equipment

- Platform
  - Window 7 home edition

- Programming language
  - PHP
  - HTML
  - CSS
  - JavaScript
  - JQuery
  - AJAX
  - C# (Windows Service)
  - MySQL

- Software involve
  - NetBeans IDE 8.0.2
  - XAMPP (Apache Distribution)
  - Microsoft Visual Studio 2013
  - Oracle MySQL
  - Google Chrome
  - PDF Viewer
3.3 **Hardware Requirement**

- **Minimum:**
  - OS: Windows Vista
  - Processor: Pentium 4 2.3GHZ
  - Memory: 256MB RAM
  - Graphics: Intel
  - Browser: Google Chrome, Mozilla Firefox, Internet Explorer 9

- **Recommended:**
  - OS: 7 / 8 /10
  - Processor: Intel i3
  - Memory: 2GB RAM
  - Graphics: Intel
  - Browser: Google Chrome, Mozilla Firefox
3.4 Gantt Chart

Figure 3.2 Gantt Chart (part 1 of 3)
Chapter 3 System Analysis and Design

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>19 days</td>
<td>4/28/2015</td>
<td>5/11/2015</td>
</tr>
<tr>
<td>Create working data model</td>
<td>6 days</td>
<td>4/28/2015</td>
<td>5/4/2015</td>
</tr>
<tr>
<td>Design the GUI</td>
<td>7 days</td>
<td>5/4/2015</td>
<td>5/11/2015</td>
</tr>
<tr>
<td>Identifying reusable component</td>
<td>6 days</td>
<td>5/11/2015</td>
<td>5/17/2015</td>
</tr>
<tr>
<td>Implementation</td>
<td>19 days</td>
<td>5/18/2015</td>
<td>6/6/2015</td>
</tr>
<tr>
<td>Develop Prototype</td>
<td>7 days</td>
<td>5/18/2015</td>
<td>5/25/2015</td>
</tr>
<tr>
<td>Test the Prototype</td>
<td>2 days</td>
<td>5/25/2015</td>
<td>5/27/2015</td>
</tr>
<tr>
<td>Review the System</td>
<td>2 days</td>
<td>5/27/2015</td>
<td>5/29/2015</td>
</tr>
<tr>
<td>Conduct the troubleshooting</td>
<td>6 days</td>
<td>5/29/2015</td>
<td>6/4/2015</td>
</tr>
<tr>
<td>Update all Documentation</td>
<td>2 days</td>
<td>6/4/2015</td>
<td>6/6/2015</td>
</tr>
<tr>
<td>Development of System Version 2</td>
<td>40 days</td>
<td>6/7/2015</td>
<td>7/17/2015</td>
</tr>
<tr>
<td>Perform details Analysis for Functional Requirement</td>
<td>10 days</td>
<td>6/7/2015</td>
<td>6/17/2015</td>
</tr>
<tr>
<td>Reminder</td>
<td>4 days</td>
<td>6/7/2015</td>
<td>6/11/2015</td>
</tr>
<tr>
<td>Searching Module</td>
<td>3 days</td>
<td>6/11/2015</td>
<td>6/14/2015</td>
</tr>
<tr>
<td>Printing Module</td>
<td>3 days</td>
<td>6/14/2015</td>
<td>6/17/2015</td>
</tr>
<tr>
<td>Design</td>
<td>14 days</td>
<td>6/18/2015</td>
<td>7/2/2015</td>
</tr>
<tr>
<td>Create working data model</td>
<td>3 days</td>
<td>6/18/2015</td>
<td>6/21/2015</td>
</tr>
<tr>
<td>Design the GUI</td>
<td>6 days</td>
<td>6/21/2015</td>
<td>6/27/2015</td>
</tr>
<tr>
<td>Identifying reusable component</td>
<td>2 days</td>
<td>6/27/2015</td>
<td>6/29/2015</td>
</tr>
<tr>
<td>Analyze previous version of system</td>
<td>3 days</td>
<td>6/29/2015</td>
<td>7/2/2015</td>
</tr>
</tbody>
</table>

Figure 3.3 Gantt Chart (part 2 of 3)

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation</td>
<td>14 days</td>
<td>7/3/2015</td>
<td>7/17/2015</td>
</tr>
<tr>
<td>Develop Prototype</td>
<td>4 days</td>
<td>7/3/2015</td>
<td>7/7/2015</td>
</tr>
<tr>
<td>Test the Prototype</td>
<td>2 days</td>
<td>7/7/2015</td>
<td>7/9/2015</td>
</tr>
<tr>
<td>Review the System</td>
<td>2 days</td>
<td>7/9/2015</td>
<td>7/11/2015</td>
</tr>
<tr>
<td>Conduct the troubleshooting</td>
<td>4 days</td>
<td>7/11/2015</td>
<td>7/15/2015</td>
</tr>
<tr>
<td>Update all Documentation</td>
<td>2 days</td>
<td>7/15/2015</td>
<td>7/17/2015</td>
</tr>
<tr>
<td>Development of System Version 3</td>
<td>55 days</td>
<td>7/18/2015</td>
<td>9/11/2015</td>
</tr>
<tr>
<td>Perform details Analysis for Functional Requirement</td>
<td>10 days</td>
<td>7/18/2015</td>
<td>7/28/2015</td>
</tr>
<tr>
<td>Settings Module</td>
<td>5 days</td>
<td>7/18/2015</td>
<td>7/23/2015</td>
</tr>
<tr>
<td>Quotation</td>
<td>5 days</td>
<td>7/23/2015</td>
<td>7/28/2015</td>
</tr>
<tr>
<td>Design</td>
<td>20 days</td>
<td>7/29/2015</td>
<td>8/18/2015</td>
</tr>
<tr>
<td>Create working data model</td>
<td>4 days</td>
<td>7/29/2015</td>
<td>8/2/2015</td>
</tr>
<tr>
<td>Design the GUI</td>
<td>8 days</td>
<td>8/2/2015</td>
<td>8/10/2015</td>
</tr>
<tr>
<td>Identifying reusable component</td>
<td>2 days</td>
<td>8/10/2015</td>
<td>8/12/2015</td>
</tr>
<tr>
<td>Analyze previous version of system</td>
<td>6 days</td>
<td>8/12/2015</td>
<td>8/18/2015</td>
</tr>
<tr>
<td>Implementation</td>
<td>23 days</td>
<td>8/19/2015</td>
<td>9/11/2015</td>
</tr>
<tr>
<td>Develop Prototype</td>
<td>7 days</td>
<td>8/19/2015</td>
<td>8/26/2015</td>
</tr>
<tr>
<td>Test the Prototype</td>
<td>4 days</td>
<td>8/26/2015</td>
<td>8/30/2015</td>
</tr>
<tr>
<td>Review the System</td>
<td>1 day</td>
<td>8/30/2015</td>
<td>8/31/2015</td>
</tr>
<tr>
<td>Conduct the troubleshooting</td>
<td>6 days</td>
<td>8/31/2015</td>
<td>9/6/2015</td>
</tr>
<tr>
<td>Finalize all Documentation Involved</td>
<td>4 days</td>
<td>9/6/2015</td>
<td>9/10/2015</td>
</tr>
<tr>
<td>Hand over final system deliverable</td>
<td>0 days</td>
<td>9/11/2015</td>
<td>9/11/2015</td>
</tr>
<tr>
<td>Presentation of Final Year Project 2</td>
<td>0 days</td>
<td>9/11/2015</td>
<td>9/11/2015</td>
</tr>
</tbody>
</table>

Figure 3.4 Gantt Chart (part 3 of 3)
Chapter 3 System Analysis and Design

Timeline

Figure 3.5 Timeline (part 1 of 3)

Figure 3.6 Timeline (part 2 of 3)
In Insurance Agency System, there are 5 phases of System Development Life Cycle (SDLC) needed in order to complete the whole project, which are Planning, Analysis, Design, Implementation, and Maintenance. In the Planning phase, user needs to plan the module tasks, identify the problem and its objective. In the Analysis phase, user analyzes the problem and finds the solution to solve the problem. In the Design phase, user has to design the system interface and also coding such as draws a class diagram. In the Implementation phase, user needs to code a system with the development tools in a complete project. Lastly, in the Maintenance phase, user has to improve the stability or fix some bugs in order to enhance the system.
3.5 Design Phase for new system

3.5.1 Functional Hierarchy Chart

![Functional Hierarchy Chart]

Figure 3.8 Functional Hierarchy Chart

**Explanation**

In Figure 3.8 the main page of the system is Home Page. Login Module is used to verify the user, and also for security identify user purpose, in which the user must login the system to access it in order to use the modules. There have 6 modules that can be used after the user login, which are Notification, Data Management Table, Reminder, Searching Module, Printing Module and Quotation. The notification will notify the customer when the insurance is opened. This module can avoid the cheating cases, because some of fake agent will not open the insurance after gets the money from customer. Therefore, notification to customer is for secure purpose. Besides, Data Management Table allows the user to view the details of customer, such as Customer details, Vehicle details, and Insurance details. Moreover, Reminder is to auto check the coming insurance before 30 days of expire date of insurance, and generate an email to send out to the user, who are the agent and customer. Another function is searching
module, it allows the user to search the details of customer in database and auto input the field. So, the benefit of this function is easily been used by users as user no need retype the information and can save much time. Reminder module will also notify the user the important things such as banking the customer’s paid insurance payment. This function will keep pop up the message and always remind the user until the payment is already due. When this function notice the user, user will not transfer or make payment late and will not get penalty. So, agent and customer have been reminding by the system.

The printing module is to print the report such as cover note and quotation into PDF view. In PDF view, it can also save in softcopy and print it out as hardcopy. The settings module allows the user to amend the information such as name, email, address, and telephone number. It is easy to change what the user want to change. The last function is Quotation which is the special module. Quotation is the mostly used by the user and customer. The customer always requests for the price of insurance, therefore this function will help the user to calculate the price of insurance easily.
3.5.2 Block Diagram

1. Login

![Block Diagram of Login Module]

**Explanation**

Firstly, the Agent registers for an account of Individual Insurance Agency System. After all the verification process of the account is done, it will store into database. The system will send the confirmation code to the Agent through Email. So, the Agent will verify the code by clicking the link sent by the system. After verified, the agent is become as one of the user, thus they can login the web based and use the functions.
2. Notification

Figure 3.10 Block Diagram of Notification

**Explanation**

From the Figure 3.10 above, the user is opened the insurance, and then the system will store the value in database. After that, the system will generate an email and notify the customer through email.
3. Report Module

![Block Diagram of Data Management Table]

Figure 3.11 Block Diagram of Data Management Table

**Explanation**

Once the user opens the Data Management Table, the table will request data from database system and displayed into table form. The user can also view back all of the cover note in customer details history.
4. Reminder

(i) Reminder for customer insurance cover period expire soon

![Diagram of Reminder for customer insurance cover period expire soon](image)

**Explanation**

Firstly, when the system starts to run every 24 hours, it will check the coming periods before 30 days of expire date of customer’s insurance cover. Secondly, the system will analyze in a list who is nearer to expire date. Thirdly, the system will remind the user and customer that the insurance is near to expire date, and ask them for renew. The system will check and send email to customer once time only, whereas the agent can send multiple times to inform the customer.
(ii) Reminder for agent the submission of payment due

Figure 3.13 Block Diagram of Reminder for agent the submission of payment due

**Explanation**

From Figure 3.13 above, the user has to login the system. The system will check from database on which it is Friday or last week payment that haven’t settle yet, the payments due will be reminded to the agent for faster submit to the insurance company that money paid by customer. When the user has not bank transfer yet, it will keep pop up the message to user until the payment is made completely.
5. Searching and Auto Input Module

![Diagram of Searching and Auto Input Module]

**Figure 3.14** Block Diagram of Searching and auto input Module

**Explanation**

From the Figure 3.14, the user inputs a sentence in the search bar, the system will match the information from database system. After the result comes out, it will show a list of result in table view and return to the user.
6. Printing Module

**Figure 3.15** Figure Block Diagram of Printing Module

**Explanation**

From the Figure 3.15, after the agent new or renew the insurance or quotation, the system will auto generate the result in PDF format. Therefore, the agent and customer can view, save to local machine, and print it out.
7. Settings Module

![Block Diagram of Quotation](image)

Figure 3.16 Block Diagram of Quotation

**Explanation**

The agent needs to amend their information when they are changing their information such as telephone number, because they maybe are loss their phone, so need to change a new number. This module can allow the user no need make any contact with the company to change their information.
8. Quotation

**Figure 3.17 Block Diagram of Quotation**

**Explanation**

From the Figure 3.17, the customer requests the price of insurance. The user will quote amount price of insurance to the system. The system will auto calculate out the result and send back to the user. So, user will let the customer knows the final answer and 3 types of insurance companies’ prices.
3.6 UML Diagram

3.6.1 Use-Case Diagram

![Use Case Diagram]

Figure 3.18 Use Case Diagram
3.6.2 Activity Diagram

1. Login

![Activity Diagram of Login](image)

Figure 3.19 Activity Diagram of Login
2. Notify the message

<table>
<thead>
<tr>
<th>Customer</th>
<th>User</th>
<th>System</th>
<th>Database</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Open the insurance</td>
<td>Generate an email to customer</td>
<td>Store in database system</td>
</tr>
<tr>
<td></td>
<td>Send the notification email to customer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 3.20 Activity Diagram of Notification
3. Manage the Data

![Activity Diagram of Data Management Table](image)

Figure 3.21 Activity Diagram of Data Management Table
4. (i) Remind Customer’s insurance cover period expire soon

![Activity Diagram of Reminder for customer insurance cover period expire soon](image)

Figure 3.22 Activity Diagram of Reminder for customer insurance cover period expire soon
(ii) Reminder agent need to submit the payment due

![Activity Diagram of Reminder for agent the submission of payment due](image)

Figure 3.23 Activity Diagram of Reminder for agent the submission of payment due
5. Searching the Details and auto input the fields

![Activity Diagram of Searching and auto input module](image)

Figure 3.24 Activity Diagram of Searching and auto input module
6. Printing Module

Figure 3.25 Activity Diagram of Printing Module
7. Settings Module

Figure 3.26 Activity Diagram of Settings Module
8. Quote the Price

![Activity Diagram of Quotation]

Figure 3.27 Activity Diagram of Quotation
3.7 Database Design

3.7.1 ERD Diagram

Figure 3.28 ERD Diagram
### 3.7.2 Description of ERD Diagram

![ERD Diagram](image)

**Figure 3.29 Description of ERD Diagram**
3.7.3 Object Diagram

Figure 3.30 Class Diagram of Quotation
3.8 User Interface Design

There are have many interface design for user, because it is save time bring user reach to destination.

Menu Bar

Before Login

After Login

![Menu Bar Comparison](image)

Figure 3.31 Menu Bar
Chapter 3 System Analysis and Design

**Home Page**

![Home Page Image]

**Figure 3.32 Home Page**

**Login Page**

![Login Page Image]

**Figure 3.33 Login Page**
Chapter 3 System Analysis and Design

Register Page

![Register Page]

Figure 3.34 Register Page

Confirm Register Page

![Confirm Register Page]

Figure 3.35 Confirm Register Page
Chapter 3 System Analysis and Design

**Report Page (for customer use)**

![Report Page](image)

*Figure 3.36 Report Page (for customer use)*

**Contact Us Page**

![Contact Us Page](image)

*Figure 3.37 Contact Us Page*
Chapter 3 System Analysis and Design

Index Home Page (After Login)

Figure 3.38 Index Home Page (After Login)

Pop up message at every Page

Figure 3.39 Pop up message at every Page
Chapter 3 System Analysis and Design

**Cover Note Page**

![Cover Note Page](image1.png)

**Figure 3.40 Cover Note Page**

**Report Page (Agent Use)**

![Report Page (Agent Use)](image2.png)

**Figure 3.41 Report Page (Agent Use)**
Chapter 3 System Analysis and Design

**Quotation Profile Page**

![Quotation Profile Page](image1.png)

**Figure 3.42 Quotation Profile Page**

**Client Profile Page**

![Client Profile Page](image2.png)

**Figure 3.43 Client Profile Page**
Agent Profile Page

Figure 3.44 Agent Profile Page

Settings Page

Figure 3.45 Settings Page
Chapter 3 System Analysis and Design

Logout Page

![Logout Page](image)

**Figure 3.46 Logout Page**
Chapter 4 Development and Testing

4.1 *Operating Manual*

4.1.1 How to register and login to the home page.

1. If you are at Home page, you must go to the register page for register a new account.

![Figure 4.1 Home page before login](image1.png)

2. At Register Page, you are required to fill in all inputs and submit it as shown in Figure 4.2 below. (All are required fields, except Telephone No.)

![Figure 4.2 Register page](image2.png)
3. After you success to register, the page will forward the link as shown in Figure 4.3 below.

![Figure 4.3 Thank you for register page.](image)

4. The server will send you an email for confirmation purpose. Click the link and redirect to complete the register page.

![Figure 4.4 Send confirmation from email](image)
5. After success in confirmation, it will notify you through email as well. Example of completion email has sent by system in Figure 4.6

![Individual Insurance Agent System](image)

**Figure 4.5 Completed the registration**

```
Welcome to Individual Insurance Agent System

Hello LOH CHUN

Welcome! Your registration with Individual Insurance Agent System is completed.

Regards,
Webmaster
Individual Insurance Agent System
```

**Figure 4.6 Completion email sent from system**
6. Login with username and password, after that it will show success to login and redirect to index page.

Figure 4.7 Login page

Figure 4.8 index home page after login
4.1.2 How to open a cover note insurance

1. In cover note page, you can have new or renew transaction. After input or fill in all details of user, submit it to server.

![Figure 4.9 cover note](image)

**Figure 4.9** cover note

**Transaction**: New

**Figure 4.10** New Transaction

**Transaction**: Renew

**Figure 4.11** Renew Transaction
2. The search bars at Insured IC No. and Vehicle No. is used to search and auto input the data as shown in Figure 4.12 below.

![Figure 4.12 search and auto input the data](image1)

3. After success submit to the server, the server will generate a PDF file and shown in report page. If you want to save or print the PDF file, the button is at bottom right.

![Figure 4.13 Result after cover note has opened](image2)

![Figure 4.14 New or Renew insurance has been opened sent email to customer](image3)
4.1.3 How do customer and I view back a specific previous cover note or quotation in PDF file

1. Go to the report page at both general page and after login page.

![Report Page](image)

**Figure 4.15 Report Page**

2. There have 2 types of policies that can search, which are cover note and quotation.

![Report for Cover Note](image)

**Figure 4.16 Report for Cover Note**

![Report for Quotation](image)

**Figure 4.17 Report for Quotation**
4.1.4 How to view back all quotation list

1. Go to the quotation page, at right column of table “qID”, by clicking it, then can open the PDF file.

Figure 4.18 Quotation Page

Figure 4.19 open PDF in Quotation Page
4.1.5 How to view back all customers list

1. At client profile page, it will auto generate a table list for user. Besides, it can also review back the insurance in all periods for a particular vehicle.

![Client Profile Page](image1.png)

Figure 4.20 Client Profile Page

![Open PDF in Client Profile Page](image2.png)

Figure 4.21 open PDF in Client Profile Page
4.1.6 How do I know the customer insurance cover period is expire soon and submit the payment to the company

1. Go to the Agent profile, the table list will tell you which customer insurance is going to expire soon and can inform them with multiple times.
2. You can submit the payment before the payment due is over.
3. You can view the transactions at right side.
4. You can view the total customer, vehicle, and insurance that have been made at right top side.

Figure 4.22 Agent Profile Page
4.1.7 How can I amend my information

1. Go to Settings page, you can change the name, username, password, license, email, and telephone number.

![Figure 4.23 Settings Page](image-url)
4.1.8 When the notification will notice me about submit the payment due

1. If you are miss submit the payment to company, the message will show as Figure below.

Figure 4.24 Pop up Message that last week payment haven’t submit

2. If you are haven’t submit the payment on Friday, the message will show as Figure below.

Figure 4.25 Pop up Message that on this Friday, Saturday, and Sunday payment haven’t submit
Chapter 4 Development and Testing

4.2 Testing

Black-box Testing

<table>
<thead>
<tr>
<th>Module</th>
<th>Event/Input</th>
<th>Expected Action/Output</th>
<th>Actual Action/Output</th>
<th>Comments/Corrections Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Login</td>
<td>Set and login the password with alphabets and numbers</td>
<td>Login success</td>
<td>Login success</td>
<td>Pass</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Set and login the password with periods and symbols like “&amp;”, “%”, and “^”</td>
<td>Login success</td>
<td>Login success</td>
<td>Pass. But it is not a good way for input period and symbols.</td>
</tr>
</tbody>
</table>

Table 4.1 Testing of Login Module
Table 4.2 Testing of Notification Module

<table>
<thead>
<tr>
<th>Module</th>
<th>Event/Input</th>
<th>Expected Action/Output</th>
<th>Actual Action/Output</th>
<th>Comments/Corrections Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notification</td>
<td>-</td>
<td>After opened the customer’s insurance, it will send email to customer</td>
<td>After opened the customer’s insurance, it will send email to customer</td>
<td>Pass</td>
</tr>
</tbody>
</table>
### Table 4.3 Testing of Data Management Table

<table>
<thead>
<tr>
<th>Module</th>
<th>Event/Input</th>
<th>Expected Action/Output</th>
<th>Actual Action/Output</th>
<th>Comments/Corrections Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Management Table</td>
<td>-</td>
<td>Show all list of client’s information, including customer details, vehicle details, and insurance details. It can also delete the client profile.</td>
<td>Show all list of client’s information, including customer details, vehicle details, and insurance details. It cannot delete the client profile.</td>
<td>The actual output same as expected output, but it cannot update or delete the customer details. This is because there is no point to delete the history, and if delete the information, it will get very messy for the system.</td>
</tr>
</tbody>
</table>
Chapter 4 Development and Testing

<table>
<thead>
<tr>
<th>Module</th>
<th>Event/Input</th>
<th>Expected Action/Output</th>
<th>Actual Action/Output</th>
<th>Comments/Corrections Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Searching and auto input</td>
<td>No input</td>
<td>No output</td>
<td>No output</td>
<td>Pass. If there is shows a list of customer details when no input, it will become nicer.</td>
</tr>
<tr>
<td></td>
<td>Input with no data inside the database</td>
<td>No output</td>
<td>No output</td>
<td>Pass.</td>
</tr>
</tbody>
</table>

Table 4.4 Testing of Searching and auto input Module
Chapter 4 Development and Testing

<table>
<thead>
<tr>
<th>Module</th>
<th>Event/Input</th>
<th>Expected Action/Output</th>
<th>Actual Action/Output</th>
<th>Comments/Corrections Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reminder</td>
<td>-</td>
<td>Remind the customer when the insurance expire date before 30 days</td>
<td>Remind the customer when the insurance expire date before 30 days</td>
<td>Pass.</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Remind the agent in pop up message when payment due is not submit yet by Friday or it is last week payment due</td>
<td>Remind the agent in pop up message when payment due is not submit yet by Friday or it is last week payment due</td>
<td>Pass.</td>
</tr>
</tbody>
</table>

Table 4.5 Testing of Reminder Module
### Table 4.6 Testing of Printing Module

<table>
<thead>
<tr>
<th>Module</th>
<th>Event/Input</th>
<th>Expected Action/Output</th>
<th>Actual Action/Output</th>
<th>Comments/Corrections Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printing</td>
<td>-</td>
<td>Auto generate into PDF file when insurance was opened</td>
<td>Auto generate into PDF file when insurance was opened</td>
<td>Pass.</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Auto generate the quotation result into PDF file</td>
<td>Auto generate the quotation result into PDF file</td>
<td>Pass.</td>
</tr>
</tbody>
</table>

Chapter 4 Development and Testing
## Table 4.7 Testing of Settings Module

<table>
<thead>
<tr>
<th>Module</th>
<th>Event/Input</th>
<th>Expected Action/Output</th>
<th>Actual Action/Output</th>
<th>Comments/Corrections Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Settings</td>
<td>Username- same name with previous name</td>
<td>Show error message and not update to the database</td>
<td>Show error message and not update to the database</td>
<td>Pass.</td>
</tr>
<tr>
<td></td>
<td>Password- no input</td>
<td>Show error message that column is empty</td>
<td>Show error message that column is empty</td>
<td>Pass.</td>
</tr>
<tr>
<td></td>
<td>Name, Address, Tel No., and License- input with alphabet, number, and periods</td>
<td>Update to database</td>
<td>Update to database</td>
<td>Pass.</td>
</tr>
</tbody>
</table>
### Table 4.8 Testing of Quotation Module

<table>
<thead>
<tr>
<th>Module</th>
<th>Event/Input</th>
<th>Expected Action/Output</th>
<th>Actual Action/Output</th>
<th>Comments/Corrections Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quotation</td>
<td>Sum insured-input RM20,000</td>
<td>Calculated.</td>
<td>Calculated.</td>
<td>Pass.</td>
</tr>
<tr>
<td></td>
<td>Sum insured-input RM2,000,000,000</td>
<td>Show the result</td>
<td>Cannot show the result in PDF file. Number is too big and it will over hidden some of the result. Limit from RM 1 to RM 9,999,999.</td>
<td>Pass when set the limitation.</td>
</tr>
</tbody>
</table>
Chapter 5 Conclusion

5.1 Objective Achieved & Problem Solved

There have some advantages in this system compared to system in other companies. The following are the advantages and the objectives have been achieved:

1. Agent can register the account and verify for themselves. Other companies need to submit with registration form and verify in their own company, this will take about few weeks to process it. Thus, the agent can save much of their times.

2. Customer will get notice when there is new or renew insurance has been made. Some of companies will not send notice to customers.

3. Agent can review back the customer details, vehicle and insurance details, and their history too.

4. The system will auto remind the agent about the payment due that haven’t submitted via pop up message. Moreover, customer will get remind from an email message when their insurance cover period is 30 days before expire date soon.

5. Agent can view, download, and print the previous insurance cover note and quotation in PDF format. However, other companies can only print the previous insurance cover note.

6. Agent can amend their privacy information such as address, telephone number, password and others. Other companies cannot easily to amend the privacy information as they need to make contact with the company, and then just can change it.
Chapter 5 Conclusion

7. Agent can quote the price in a faster and efficient way and get 3 results, and also recommendations. Other companies will not get such quotation, they need go through the steps that same like renew the insurance way such as type in customer details, vehicle details and insurance details, then just can get the result.

8. Each agent’s user account has their own unique username and email. Therefore, there is no have duplicate email and username used by unauthorized users.
5.2 Limitation & Problem Faced

There are some of limitations in this system that so far cannot be done. The following are those limitations:

1. There is a limited numbers of agents which only can register up to maximum of 99,999 persons.

2. Cover note and quotation cannot calculate more than 10 digits. In PDF view, it will overflow and some hidden happen.

3. Quotation page can list too longer when there is more than thousands lists.

4. The Client Profile Page will list too long when there is more than hundreds lists.

5. Although there has notify or remind the customer through email, but there is still has some of the customers will overlook their email messages.

5.3 Knowledge Gained

Throughout this FYP, I have gained much qualified knowledge. The knowledge that I have gained are following by:

- I have learnt how to code for window services.
- I have learnt 3 new language such as PHP, jQuery, and Ajax.
- I have learnt how the insurance system run.
- I have learnt how to open a public address.
- I have learnt how to code website to look like a real website.
5.4 Future Enhancement

This system can be upgrade further for future use.

- In future, customer can pay the insurance by themselves.
- The system can apply chatting system to provide a communication tool between customer and agent.
- The system can renew the customer’s insurance by using credit card. Therefore customer no need go again the center for renew insurance every year.
- The system can send SMS text message to customer for notify and remind purpose. Most of people are using phones nowadays, so SMS text message can easily arrive to customer.
Reference

Anbuselvan 2015, *Database*, Practical Session 3, Server Side Web Application Development, Faculty of FICT.


Reference


Appendices

Documents Gathered

Appendices 1
Appendices 3
### 1. Motor - Private Car Comprehensive

<table>
<thead>
<tr>
<th>Age of Vehicle (Years)</th>
<th>Damage Age</th>
<th>Rate of Damage (0%)</th>
<th>Rate of Damage (5%) (Nexc. for up to 1 year old vehicle)</th>
<th>Rate of Damage (10%)</th>
<th>Rate of Damage (S)</th>
<th>Rate of Damage (N)</th>
<th>Rate of Damage (M)</th>
<th>As per Premium Table</th>
</tr>
</thead>
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<tr>
<td></td>
<td></td>
<td></td>
<td>0%</td>
<td>5%</td>
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<td>15%</td>
<td>15%</td>
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<td>2</td>
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<td></td>
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<td></td>
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<td>15% (Nexc. for 0 &amp; 1 year old vehicle)</td>
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<td></td>
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<td></td>
</tr>
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<td>4</td>
<td>10%</td>
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<td>15% (Nexc. for 0 &amp; 1 year old vehicle)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>10%</td>
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<td>15% (Nexc. for 0 &amp; 1 year old vehicle)</td>
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<td></td>
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<td>15% (Nexc. for 0 &amp; 1 year old vehicle)</td>
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<td>15% (Nexc. for 0 &amp; 1 year old vehicle)</td>
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<td></td>
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<td>10%</td>
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<td>10%</td>
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<td>15% (Nexc. for 0 &amp; 1 year old vehicle)</td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Appendices 4**
### Motor Tariff 2014 - Premium Schedules

#### Private Cars

<table>
<thead>
<tr>
<th>Cubic Capacity Not Exceeding</th>
<th>Comprehensive (RM)</th>
<th>Third Party (RM)</th>
<th>Act (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400</td>
<td>286.85</td>
<td>108.43</td>
<td>97.20</td>
</tr>
<tr>
<td>1600</td>
<td>392.00</td>
<td>121.50</td>
<td>108.00</td>
</tr>
<tr>
<td>2200</td>
<td>322.80</td>
<td>135.80</td>
<td>122.40</td>
</tr>
<tr>
<td>3060</td>
<td>555.80</td>
<td>150.30</td>
<td>136.50</td>
</tr>
<tr>
<td>4100</td>
<td>385.85</td>
<td>169.35</td>
<td>147.50</td>
</tr>
<tr>
<td>4250</td>
<td>416.20</td>
<td>176.40</td>
<td>158.40</td>
</tr>
<tr>
<td>4400</td>
<td>448.00</td>
<td>190.80</td>
<td>172.80</td>
</tr>
<tr>
<td>Over 4400</td>
<td>478.38</td>
<td>209.85</td>
<td>183.60</td>
</tr>
</tbody>
</table>

#### Private Motorcycles

<table>
<thead>
<tr>
<th>Cubic Capacity Not Exceeding</th>
<th>Comprehensive (RM)</th>
<th>Third Party (RM)</th>
<th>Act (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>72.60</td>
<td>36.80</td>
<td>37.80</td>
</tr>
<tr>
<td>100</td>
<td>96.20</td>
<td>36.80</td>
<td>32.85</td>
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<td>125</td>
<td>119.80</td>
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<td>37.20</td>
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<td>225</td>
<td>136.40</td>
<td>60.70</td>
<td>48.90</td>
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<td>350</td>
<td>185.10</td>
<td>64.30</td>
<td>56.20</td>
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<td>500</td>
<td>210.10</td>
<td>73.60</td>
<td>57.56</td>
</tr>
<tr>
<td>500</td>
<td>230.70</td>
<td>82.80</td>
<td>74.80</td>
</tr>
<tr>
<td>Auto Cycles and Mechanically Assisted Pedal Cycles under 50cc</td>
<td>36.90</td>
<td>22.70</td>
<td>18.60</td>
</tr>
<tr>
<td>Auto Cycles and Mechanically Assisted Pedal Cycles over 50cc</td>
<td>48.40</td>
<td>22.70</td>
<td>18.60</td>
</tr>
</tbody>
</table>

Appendices 5