

WEB-BASED PROPERTY MANAGEMENT SYSTEM

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DEDICATION

To my beloved family and friends

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ABSTRACT

The thesis studies and analyzes the existing difficulty in Henry Butcher Malaysia (HBM) Kluang branch primarily in relation to advertisement methods as well as uncollected property valuation reports. The current advertisement methods adopted by HBM Kluang branch is less effective since it covers small area but higher costs are involved. On the other hand, since no deposit payment is collected for each property valuation case, the clients have no immediate response to collect the valuation report once it is finished. As a result, there exist bunches of uncollected property valuation reports in the company. Consequently, the Web-based Property Management System is duly proposed to serve as an electronic platform to assist HBM Kluang branch in conducting its daily business operations.

The proposed Web-based Property Management System is a web-based solution where Active Server Pages (ASP) serves as its main programming language, while Unified Modeling Language (UML) approach is applied to model all related system diagrams at design stage. Meanwhile, during system development process, Object Oriented Methodology (OOM) is applied instead of using any structural or procedural methodology. This is due to OOM features that promote simplicity, reusability, reliability and increase the development speed.

The primary users for this web-based system are clients of HBM Kluang branch and its internal staff. The Web-based Property Management System covers four diverse modules which are *property-for-sale*, *property-to-value*, *registration* and *staff* modules. Using the proposed Web-based Property Management System, clients can search for properties, make online appointment with the staff, view their property's approximate market value and submit request to HBM Kluang branch to conduct actual property valuation.

ABSTRAK

Tesis ini mengkaji dan menganalisis masalah yang dihadapi oleh Henry Butcher Malaysia (HBM) cawangan Kluang berkaitan dengan kaedah pengiklanan dan masalah laporan penilaian hartanah yang tidak dituntut. Kaedah pengiklanan yang dipraktikkan pada masa kini kurang efisien kerana ia memerlukan kos yang tinggi tetapi merangkumi skop kawasan yang kecil. Tambahan pula, memandangkan tiada bayaran deposit yang diambil untuk setiap laporan penilaian hartanah, terdapat segelintir daripada pihak klien yang enggan menuntut laporan tersebut setelah ia disediakan. Maka dengan itu, terdapat laporan hartanah yang tidak dituntut dalam simpanan pihak syarikat. Oleh itu, *Web-based Property Management System* dibina untuk bertindak sebagai platform elektronik untuk membantu HBM cawangan Kluang dalam menjalankan operasi hariannya.

Web-based Property Management System yang dicadangkan ini menggunakan *Active Server Pages (ASP)* sebagai bahasa pengaturcaraan utama manakala pendekatan *Unified Modeling Language (UML)* diaplikasikan pada peringkat reka bentuk sistem. Semasa proses pembangunan sistem dilakukan, metodologi secara struktur atau prosedur tidak diaplikasikan, sebaliknya pendekatan *Object Oriented Methodology (OOM)* diadaptasikan. Hal ini kerana ciri-ciri *OOM* menjadikan proses pembangunan sistem bertambah mudah dan fleksibel.

Pengguna utama sistem ini ialah klien dan pekerja HBM cawangan Kluang. Sistem ini merangkumi empat modul utama iaitu modul *property-for-sale*, modul *property-to-value*, modul *registration* dan modul *staff*. Dengan menggunakan sistem ini, klien boleh mencari hartanah, membuat temujanji secara *online* dengan pihak pengurusan syarikat, melihat anggaran harga pasaran untuk hartanah yang diinginkan dan meminta pihak syarikat untuk melakukan penilaian hartanah yang sebenar.

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LIST OF ABBREVIATIONS

ASP	Active Server Pages
ATM	Automated Teller Machine
CD-R	Compact Disk-Recordable
EFT	Electronic Fund Transfer
FIABCI	International Real Estate Federation
IE	Internet Explorer
IIS	Internet Information Service
ISM	Institutions of Surveyors Malaysia
HBM	Henry Butcher Malaysia
HTML	Hypertext Markup Language
OLTP	On Line Transaction Processing
OOM	Object Oriented Methodology
OS	Operating System
PC	Personal Computer
PIN	Personal Identification Number
PHP	PHP Hypertext Pre-processor
REHDA	Real Estate and Housing Developers' Association Malaysia
SQL	Structured Query Language
UML	Unified Modeling Language
WTW	Williams Talhar and Wong

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CHAPTER 1

PROJECT OVERVIEW

1.1 Introduction

Malaysia has 3,413 registered Internet users per 10,000 people, thus, making it the second most frequent users of the Internet among South East-Asians according to statistics compiled by the Malaysians Communications and Multimedia Commission (The Star, 2005). Consciously, this figure will positively increase from time to time. Since Internet is being extensively adopted nowadays, many see its potential to serve as an enabling tool to implement Information Technology-based solution. Companies and individuals are able to view the importance of Internet in making their business easier, smarter and strategic especially when Internet has become a norm among the Malaysian society.

Leveraging on this technology, a *Web-based Property Management System* is proposed for Henry Butcher Malaysia (HBM), one of the skillful real estate companies available in Malaysia. HBM has 20 branches in strategic locations throughout Peninsular and East Malaysia which are Kuala Lumpur, Ampang, Subang, Petaling Jaya, Damansara Intan, Alor Setar, Kulim, Penang, Butterworth, Kuantan, Kuala Terengganu, Seremban, Melaka, Muar, Johor Bahru, Kluang, Kuching, Miri, Kota Kinabalu, Sandakan and Tawau. However, for this project the Kluang branch is chosen.

The Web-based Property Management System will serve as an electronic platform to enhance the paper-based business operations currently implemented at HBM, Kluang branch. By employing this web-based solution, HBM Kluang branch is expected to become more competitive and strategic as it is likely to diminish the yearly expenses that primarily involves bundle of papers, stationeries and printing materials as well as providing convenience to its clients.

1.2 Background of Problem

Henry Butcher Malaysia (HBM) was formerly known as Henry Butcher Lim and Long Sdn Bhd and involves in various field of real estate industry that includes property valuation, agency, property auction and machinery. The headquarters is located in Kuala Lumpur and it has branches all over Malaysia such as Seremban, Melaka, Muar and Miri. However for illustration purpose, this project is only concentrating on the Kluang branch.

Even though as a whole HBM involves in various field of real estate industry, HBM Kluang branch is more focusing on buying and selling the property, property valuation and property auction. Property here is typically consists of residential property. Each of these operations will produce an end report which is signed by the registered valuer or auctioneer. In order to become a registered valuer, the candidate must have a recognized degree, two years working experience under a registered valuer and pass a test of professional competent. Then only the respective candidate will be registered under the Board of Valuer, Appraisers and Estate Agency Act.

On the other hand, to become a registered auctioneer, the candidate should posses an experience working under an auctioneer of that particular state and pass interview conducted by the state secretary. The auction license is issued by the state of authority. Meaning, if a candidate obtains the auction license from Johor, the candidate can only conduct property auctions in Johor. The candidate is not allowed to conduct the auction in Selangor.

Currently, HBM Kluang branch is fully utilizing the paper-based solutions in conducting its daily business operations. In the context of buying and selling the property, the property owner will consult with HBM Kluang on the current price of their property if it is sold at that specific time. If the owner agrees with the sold price identified by the company, then only HBM Kluang branch advertises that property to the public. However, using the paper-based solution, HBM Kluang branch usually takes longer time to sell the property. This is most likely due to ineffective advertising method and spread of news. As a result, the company is not able to pull more potential buyers for the advertised property.

On the other hand, a property must be valued if the owner wants to get the bank loan, to pay for stamp tax or for asset management. Once the property valuation finished, an end property valuation report is distributed to the property owner. The report will be signed by the registered valuer to certify that the price valued by the real estate company is aligned with the current market value. Then, the property report must be collected by the owner and sufficient payments should be made. The current problem that exists in HBM Kluang branch is that some clients neglect to collect the property report. The clients do not have the initiative to collect the report since they have not made any payment in advance for that report. They tend to think that it is fine not to collect the property report since they have yet pay for that valuation service. When the property report is not collected, HBM Kluang gets nothing for its valuation service and there exists bunch of uncollected property reports. Therefore, the company would like to have an electronic property management platform, which is customized to HBM Kluang branch environment and raising issues to help their business grows stronger.

The next section 1.3 – statement of the problem will further explain the circumstances currently exist at HBM Kluang branch.

1.3 Statement of the Problem

As mentioned briefly in section 1.2 – background of the problem, the problems faced by HBM Kluang branch can be further listed as below:

- The spread of news on property for sale is less effective since it circulates only in Kluang town. As a result, more time is consumed to find the right buyer since the potential candidates are very limited.
- The company found out that it is tedious to advertise the properties to be sold using the conventional methods; banners, telephone calls and flyers as it involves more time, cost and energy to implement.
- The clients feel frustrated when they were told that the officer in charge is not around when they want to discuss and get additional information on any property that they have in mind.
- The company found out that there exist uncollected complete property valuation reports and therefore, the company receives nothing for payment.
- In some cases, the clients feel shock and not satisfied with the price of their property valued by HBM Kluang branch. When this happens, the property valuation price need to be justified by the court and thus, leaves a rather bad perception of the company.

Seeing such obstacles exist in HBM Kluang branch, it motivates the author to develop a Web-based Property Management System so that the business operations may run more smoothly.

According to HBM Kluang branch manager, none of HBM branch has applied such system to support their daily business operations. The headquarters in Kuala Lumpur once had asked a software house to develop such system. Unfortunately, due to some technical problems faced by the software house, the initial plan to develop such system is not being able to carry out. For that reason, the full adoption of this web-based system is expected to resolve HBM Kluang branch's obstacles mentioned above.

1.4 Project Objective

The objectives of the Web-based Property Management System are listed as follows:

- To study HBM Kluang branch's existing manual property management system that mainly uses paper-based solution in relation to:
 - i) difficulties in managing the property advertisement in areas other than Kluang town.
 - ii) uncollected complete property valuation reports by the clients.

- To analyze, design and develop a web-based property management system that is able to:
 - i) facilitate property advertisement without restriction by the locality of the property.
 - ii) assist the clients in getting in touch with the officers for further information on the advertised property.
 - iii) accomplish online payment transaction paid by the clients once their request to value a property is submitted to HBM Kluang branch.
 - iv) provide a pre-valuation process on the selected property so that, clients can have a brief knowledge on the approximate value of the property. This uses an expert system engine.

- To formulate organizational strategies in implementing the proposed Web-based Property Management System.

1.5 Scope

The proposed Web-based Property Management System is developed based on HBM Kluang branch circumstances and environment. In general, the proposed system is decomposed into four different modules as illustrated below.

▪ **Registration Module**

- a) The registration module is divided into two categories which are client registration and staff registration.
- b) For client registration, any Internet user who is interested in becoming one of the HBM Kluang branch's client is the focus people for the client registration module.
- c) The Internet user needs to fill in all their particulars in the client registration form and submit it to HBM Kluang branch.
- d) In return, HBM Kluang offers free two months property bulletin and information on the latest available property once the Internet user has successfully become one of its clients.
- e) The free two months property bulletin will be sent to the respective clients through post.
- f) Meanwhile, information on the latest available property that matches the clients' interest as specified in the client registration form will be sent to their email.
- g) On the other hand, for staff registration, internal staff of HBM Kluang branch is the focus people for the staff registration module.
- h) The staff must fill in all their details in the staff registration form in order to gain access to the staff module.
- i) The staff is allowed to indicate their preferred username and password in the staff registration form.

- **Property-for-Sale**

- a) The primary user for this module is clients of HBM Kluang branch who would like to buy a property.
- b) A search engine is available in this module. With this search engine, clients of HBM Kluang branch can look for any type of property that meets their needs and requirements. The search is conducted based on type of property, location, state or price range.
- c) The outcome of the property search will list out all the available property that matches closely with the keywords entered earlier together with all its related descriptions.
- d) The outcome of the property search involves only the listed properties with HBM Kluang branch. The system will not return results concerning properties listed with other real estate company.
- e) The property descriptions will only display the general image of the property mainly the front view of the property together with all related information on the property such as the property ID, provision land area, number of bedroom and bathroom, tenure and most important the listing price.
- f) It will not cover any 3D images of the property. Therefore, the clients are not able to explore the property using the web browser as if they are walking into the real property.
- g) The clients can save and print the property descriptions for their future reference.
- h) In addition, this module allows the clients to compare two different properties side by side. Therefore, it facilitates the clients in making smarter decision as buying a property involves a large amount of money.
- i) This module includes an online appointment form where the clients will set the tentative date and time to meet the officer in charge for further discussions on the selected property.
- j) The officer in charge will confirm the meeting through email.
- k) This module will guide the clients in buying a property through its “Home Buying Guide” page.

- **Property-to-Value**

- a) The main user for this module is clients of HBM Kluang branch who wants the company to value their property.
- b) A property pre-valuation section is provided in this module where the clients can view their property's preliminary market value.
- c) The preliminary market value of the intended property is conducted based on five basic characteristics of the property which are:
 - the storey of the property either single storey or double storey.
 - the type of property.
 - the provision land area of the property.
 - the location of the property.
 - the number of bedroom available in the property.
 - either the property has any extension or not.
- d) For further property valuation process, the clients can submit their request to HBM Kluang branch using the online property valuation form.
- e) The online property valuation form includes an online payment that enables the clients to pay the deposit money or make an advance payment to HBM Kluang branch.
- f) HBM Kluang branch will start executing the request only when it has received the deposit payment from the respective clients.
- g) A notification from HBM Kluang branch will be sent to the clients using email once the company received the online property valuation form together with the deposit payment.
- h) The email will state that the client's property will be valued by HBM Kluang branch and please allow several days to complete the valuation process.

- **Staff Module**

- a) The primary user for this module is the internal staff of HBM Kluang branch.
- b) An appointment section is provided where the staff will be able to view or check their daily appointments with the respective clients.
- c) In addition, the staff can add new appointments and edit the details of existing appointments as there might be a situation where the tentative appointment is changed to another date and time.
- d) Besides, the staff is allowed to delete any canceled appointment.
- e) For each property cases that a particular staff handles, the property cases can be registered in this module.
- f) Similar to the appointment section, the staff may edit the details of the registered property cases whenever needed.
- g) The staff can mark the completed property cases to be inserted to the completed case section where the cases are kept for future reference.
- h) For security reason, this module allows the staff to change their current password.

Even though HBM Kluang branch conducts property auction, this operations will not be implemented in this Web-based Property Management System. This is due to the primary involvement of the court and legislative issues in dealing with the property auction. Therefore, more time must be spent in order to fully understand the actual business processes involved before developing the property auction system. Since time is the major concern for this project, the author found out that it is difficult to implement such system within the specific time frame.

All appropriate data on the properties that comprises of location, price range, type of property and so forth will be compiled from HBM Kluang branch with the help of its internal staff.

Meanwhile, in order to develop the Web-based Property Management System, the most essential hardware that HBM Kluang branch requires is the personal computer (PC). The PC will be fully utilized for the entire online operations of the system, from property advertisement and online appointment to online payment.

As for the software, the following list of software will be fully utilized in developing the web-based system.

- **Operating System**

Microsoft Windows XP Professional is used as the main operating system (OS) to run the proposed web-based system.

- **Server**

Internet Information Service (IIS) - IIS is a group of Internet servers with additional capabilities for Microsoft's Windows NT and Windows 2000 Server operating systems. Thus, it serves as a means to upload the design pages of Web-based Property Management System into the Internet.

- **Web Development**

Active Server Pages (ASP) - ASP is an open, compile-free application environment in which the author can combine HTML, scripts, and reusable ActiveX server components to create a powerful web-based business solution for HBM Kluang branch.

Macromedia Dream Weaver - It is an essential application primarily used to design the interface of the Web-based Property Management System.

- **Database**

Microsoft Access – Microsoft Access serves as the systems database to keep all the relevant information about the properties. Microsoft Access is a relational database management system from Microsoft, packaged with Microsoft Office Professional which combines the Jet relational database engine with a graphical interface. The development environment provides productivity-enhancing features for both advanced developers and beginning users.

- **Documentation and Presentation**

Microsoft Visio - This software is used to draw all the UML diagrams needed during the design process. The diagrams include use case diagram, sequence diagram, activity diagram, collaboration diagram and etc.

Microsoft Word - The Word processor is required to assist the author in completing the project documentation.

Microsoft Project - This application is mainly used to track the progress of the proposed web-based system. With its Gantt chart, it guides the author in completing the system without delay.

Microsoft Power Point - Microsoft PowerPoint is utilized to create professional looking presentations and slide shows during the presentation session.

In developing the proposed system, web-based solution is identified as the most appropriate platform due to its simplicity and low maintenance cost. Whereas, the object oriented serves as its methodology that will be carry out through out the system development process. For further explanations, the reader may refer to chapter 3 – methodology.

A sequence of test will be done to ensure a quality and strategic system is served to HBM Kluang branch and its clients. All the particular modules will be first tested followed by the integration test, where two or more different units that have already been tested are combined into a single component and the interface between them is tested. Finally, a test performed by an end user or system owner is conducted in order to verify whether or not the delivered system fulfills their needs and requirements.

1.6 Importance of Project

The proposed system, Web-based Property Management System proves benefits both to HBM Kluang branch and its clients.

Looking from the organizational context, HBM Kluang branch is able to broaden its client's network as the proposed web-based system will provide the easiest, fastest and most efficient property advertising method. Throughout this system, people around Malaysia are able to view the property advertisement at anytime, anyplace and therefore, its probability to cover clients outside Kluang is high. In addition, this system enables the reduction of advertisement cost as paper-based property advertisement is no longer serves as the core advertising method. Furthermore, with the system's online appointment form, it confirms the availability of the officer in charge and thus, enhances the level of trust and ease of communication between HBM Kluang branch and the clients.

In addition, with the advance payment function, it reduces the probability of uncollected property valuation report by the clients. As a result, HBM Kluang branch will be able to enlarge its profit as all their property valuation services are paid off.

On the other hand, with this proposed web-based system the clients will have the control power at their fingertips. In seconds, they can have access to multiple properties that matches their needs and requirements without physically go to HBM Kluang branch to get additional information on the properties.

Furthermore, the proposed Web-based Property Management System offers the most recent two months property bulletin for free to the clients of HBM Kluang branch. To become one of the clients, Internet users need to register themselves first to make them one of the clients and therefore eligible for the offer. This method is used by HBM Kluang branch in order to grab as many as possible Internet users in becoming its reliable clients and avoid them from choosing other real estate company as their main property reference. Hence, the proposed system creates value both to HBM Kluang branch and its clients.

1.7 Chapter Summary

This chapter briefly explained to the readers about the overview of the proposed Web-based Property Management System that includes project objectives, project scope and project importance. The proposed system is developed to resolve the current circumstances of Henry Butcher Malaysia (HBM), Kluang branch identified earlier by the author.

The proposed system is duly proposed to enhance the daily business operations of HBM Kluang branch. As an electronic supporting tool, the system is able to facilitate HBM Kluang branch to get in touch with multiple clients in multiple places, other than Kluang town. In addition, HBM Kluang branch is able to increase their earnings since it will receive deposit payment for each property valuation cases through online payment made by its clients.

Web-based Property Management System fully utilizes the web-based model as Internet has been widely adapted in most of today's businesses. Consequently, convenient access environment is created among the users as they are allowed to search for related property and request HBM Kluang branch to value their property at anytime, anywhere.

In general, the proposed Web-based Property Management System will serve as a strategic electronic platform to assist HBM Kluang branch in enhancing their property advertisement means instead of using the conventional way that primarily involves papers. The clients may seek for brief information on the property without physically go to HBM Kluang branch. Moreover, the communication between the clients and staffs of HBM Kluang branch will improve as the clients will have an additional choice to request for property valuation which is through the property-to-value section.

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