

BORANG PENGESAHAN STATUS TESIS

JUDUL: DSS FOR HOUSE SELECTION IN MALACCA

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DSS FOR HOUSE SELECTION IN MALACCA

Is written by me and is my effort and that no part has been plagiarized without citations.

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DEDICATION

*To my beloved parents, supervisor, lecturers, and my friends for giving
assistant to complete this project successfully.*

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LIST OF ABBREVIATIONS

FTMK	-	Fakulti Teknologi Maklumat dan Komunikasi
DSS_HS	-	Decision Support System for House Selection in Malacca
DSS	-	Decision Support System
AHP	-	Analytical Hierarchy Process
GUI	-	Graphic User Interface
DBMS	-	Database Management System
MYSQL	-	Structured Query Language
RAM	-	Random Access Memory
PHP	-	Pre-Hypertext Processor
PC	-	Personal Computer
LAN	-	Local Area Network
DFD	-	Data Flow Diagram
SSADM	-	Software Structure Analysis Design Management
ERD	-	Entity Relationship Diagram
DDL	-	Data Definition Language
SCM	-	Software Configuration Management
AUT	-	Application User Testing

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ABSTRACT

DSS for House Selection in Malacca is a system developed based on the web based application for any housing developer companies. The purpose of this system is developed to overcome the difficulties of expected buyers searching for house information that time consuming, difficulties to make house selection based on their preferred criteria and the managing of many records by manually. The main objectives to develop DSS for House Selection in Malacca are ease users in choosing their preferred house. To avoid all the difficulties, a few resolutions had been done especially by developing system computerized used the concept of Decision Support System (DSS) in producing the suggestion for expected buyers, online booking for buyers and data managing systematically for administrator. As for the users of the system, three users are identified to access the system that they either expected buyers, sales representative of the housing developer company and system administrator. For distinctive features, the system have several functions such as selection house based on preferences value, checking for booking status by key in IC number and managing of house information. As for the Decision Support System part, the system employs the Decisions Table technique. The system consists of four main modules, searching module, selection module, booking module and administration module. As for the development process, this project used the evolutionary prototyping methodology, Macromedia Dreamweaver MX 2004 as software, PHP as the programming language whereas MySQL is for the database management system.

ABSTRAK

'*DSS for House Selection in Malacca*' adalah sistem yang berasaskan aplikasi web yang dibangunkan untuk syarikat perumahan. Tujuan sistem ini dibangunkan adalah bagi mengatasi masalah yang wujud seperti proses pencarian maklumat rumah yang susah dan mengambil masa terlalu lama, sukar membuat pemilihan yang tepat bagi sesebuah rumah dan masalah menyimpan rekod yang terlalu banyak disebabkan kaedah yang lama. Objektif utama dalam membangunkan *DSS for House Selection in Malacca* adalah untuk menawarkan bantuan kepada pembeli-pembeli dalam memilih rumah idaman mereka. Bagi mengatasi masalah yang wujud dalam sistem sedia ada, beberapa langkah telah diambil antaranya memperluaskan penggunaan komputer secara menyeluruh, menitikberatkan penghasilan cadangan yang meliputi kriteria yang dipilih oleh pembeli dengan menggunakan pendekatan "*Decision Support System (DSS)*", penempahan rumah melalui aplikasi atas talian dan juga pengurusan data secara sistematik. Terdapat tiga pengguna bagi sistem ini iaitu pembeli yang ingin membeli rumah, wakil jualan bagi syarikat perumahan dan pentadbir sistem. Sistem yang dibangunkan ini juga mempunyai fungsi-fungsi tertentu untuk memastikan keberkesanannya antaranya terdapat fungsi pemilihan rumah berdasarkan nilai kecenderungan, penyemakan status penempahan berdasarkan no kad pengenalan dan pengurusan maklumat bagi setiap buah rumah. Sistem ini juga mengimplementasikan teknik jadual keputusan. Sistem ini merangkumi empat modul utama iaitu Modul Carian, Modul Pemilihan, Modul Penempahan dan Modul Pentadbir. Sistem ini dibangunkan berdasarkan metodologi prototaip evolusi dan menggunakan perisian Macromedia Dreamweaver MX 2004 serta PHP sebagai bahasa pengaturcaraan manakal MySQL pula sebagai pangkalan data untuk system ini.

CHAPTER I

INTRODUCTION

1.1 Project Background

DSS for House Selection in Malacca (DSS_HS) is developed as an assistant for any individual in choosing their dream house. This system can also make the current manual system which is choosing and booking houses easier. This system is computerized by implementing the decision support system and will only be developed for housing developer companies.

The system consists four main modules includes, Searching Module, Decision Support Module, Booking Module and Administration Module. As for the Decision Support System part, the system employs the Decisions Table technique. Overall, this system will benefit the buyers and housing developer companies towards improving their business.

By just surfing the web application, user will go through the DSS function and then choose the criteria of their dream house. The DSS will response to their choice. This system will help prospect buyers to select the house suitable to the criteria which they had been chosen based on the information supported by the system. It will also help the developers to manage and keep their buyers data in a safe way.

1.2 Problem Statement

The proposed to develop DSS for House Selection in Malacca (DSS_HS) is based on many reasons. Before this, buyers get information and make decision to buy their dream house by themselves. It so difficult for buyers to make their decision to choose the best house which is fulfills their criteria .The problems is as below:

- a) Difficulty to make the right choice in choosing preferred house.
- b) Do not have platform to get information about house and the specification
- c) Time constraints to search and find the information about the house.
- d) Incorrect choice of house without support from any system.
- e) House developer will face many problems in data management.

1.3 Objectives

The main objectives to develop DSS_HS are:

- To make information about houses available anytime and anywhere.
- To offer assistant to the buyers in choosing preferred house.
- To allow online booking payment
- To record information about buyers and sales details.

1.4 Scope

DSS_HS has been classification into several scopes. This system will only limited to house selection located in Malacca only. They are:

a) Users

- For buyer or purchaser to buy a house
- For authorized system administrator for managing information.
- For authorized sale representatives for maintaining requiring information.

b) Modules/Function

1) Searching

- This system provide searching module to help users search the house information either by house type, house price range or house location.

2) Decision Support

- This module or function allowed expected buyer to make selection for their dream house based on criteria given. Also known as advance searching

3) Booking

- The system provide online booking for expected buyer to make a booking for their preferred house

4) Administration

- This system provides security features through staff ID and password for sale representative whereas username and password for system administrator where only authorized user can access to managing the system with different authorization.

c) Environment

- Mozilla Firefox as a browser.
- Xampp as stand-alone server.

1.5 Project Significance

The system will promote the houses projects under housing developer companies because through the system, prospects buyer can find the detail information online. The system will also help buyers to reduce time and money to search the information from different companies.

The system should help the buyer to select their dream house. With the function of the DSS, the system should attract more prospect buyers to choose their interested house based on the criteria given.

Using this web-based system, the buyers should not have to worry about information and data managing. Buyers can also get an expert advice in buying their own house by selecting the house's criteria. They can make a booking online.

1.6 Expected Output

This system is developed in hoping to help users in finding their dream house and make selection through the decision support function. DSS_HS is will also change the manual system that is time consuming. It also useful for housing developer companies especially for the administration in managing the data.

1.7 Conclusion

As a conclusion, the system helps prospect buyers to select their dream and preferred house based the on criteria chosen. The prospect buyers who are concerned about the house information and do not have much time to make survey, will have benefit from this system.

This chapter has explained the whole function of the system and how the system should works. The next chapter will discuss on literature review of the project and the methodology that is used in developing the system.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

Literature review is the fact and information that can be used as the reference. The data for the reference are findings from the past research or sentence and also the existing systems that are used today. The data and information were also collected through interview with the sale representative of housing developer companies. The purpose of a literature review is to give confidence to the reader about the project study with related information, sentence and the ideas that have been on a topic and what are the strengths and weaknesses. Literature review is also important to fulfill user requirements and specifications.

Methodology is a method or process of activities that has been used in developing the system. DSS for House Selection in Malacca (DSS_HS) is a web base application using decision support concept. There are phases in developing the system, and each step of this phase is shown by modeling it. Normally only the end goal of the process is manifested as a physical work product. In software, the analysis and design activities are normally governed by a specific methodology.

2.2 Facts and Finding

2.2.1 Decision Support System

A Decision Support System (DSS) is an umbrella term used to describe any computer application that enhances the user's ability to make decisions. More specifically, the term is usually used to describe a computer-based system designed to help decision-makers use data, knowledge and communications technology to identify problems and make decisions to solve those problems.

(<http://www.google.com/what is Decision Support System>)

Since the definition of Decision Support Systems can be stretched to include almost any application that processes data there is some confusion as to exactly what constitutes a DSS. In an effort to clarify the term, DSS can be separated into seven broad categories, each aiding decision making by different methods. Following are three of them that are suitable to this system:

2.2.1.1 The Computer-Aided Decision

Finlay (1994) define a decision involves making a selection from a set of alternative choices. Broadly speaking, a decision-support systems (DSS) is simply a computer system that helps you make a decision by leveraging the *multi-criteria decision-making* model. DSS provide a means for decision-makers to make decisions on the basis of more complete information and analysis. Among the main advantages of the use of DSS are the following:

- i. Increased number of alternatives examined
- ii. Better understanding of the business
- iii. Fast response to unexpected situations
- iv. Improved communication
- v. Cost savings
- vi. Better decisions
- vii. More effective teamwork
- viii. Time savings

- ix. Better use of data resources

2.2.1.2 Phases in Decision Support System

There are three phases in make decision using decision support system (Simon, 1960). The phases are:

i) **Intelligent Phase**

In DSS_HS, this phase is user defining the main problems for them to buy a house which fulfill their prefer criteria.

ii) **Designing Phase**

The houses criteria's such as type of house, price, location, facilities and nearest infrastructure will be defined and listed to support the decision. After that, this phase will find the best alternative solution. In DSS_HS, the technique that is used is decision table. The items in decision table must be completed. For example, the criteria for house selection will be completing by the user to get the list of their prefer house matching with the criteria.

iii) **Choosing Phase**

The alternative or selection house will be defined and choose by user. Not all the alternatives will be having in this phase because only the best alternative will be choosing. In this time, users make their choice with the house alternative and base on their prefer criteria

2.2.1.3 Models in Decision Support System (DSS)

DSS enables to solve any type of problems structure such as selection problem, uncertainty and objective problem. Any types of problem structure have the suitable model. For example for objective problem, the model that is suitable for this problem is linear programming model. DSS for House Selection in Malacca will be developed based on problem structure in make selection. There are a few models can be applied namely:

- i. Decision Table
- ii. Analytical Hierarchy Process (AHP)
- iii. Decision tree.

i. Decision Table

Decision tables are a precise yet compact way to model complicated logic. Decision tables, like if-then-else and switch-case statements, associate conditions with actions to perform. But, unlike the control structures found in traditional programming languages, decision tables can associate many independent conditions with several actions in an elegant way.

Decision tables are typically divided into four quadrants, as shown below.

Table 2.1: Decision Table

Conditions	Condition alternatives
Actions	Action entries

Each decision corresponds to a variable, relation or predicate whose possible values are listed among the condition alternatives. Each action is a procedure or operation to perform, and the entries specify whether (or in what order) the action is to be performed for the set of condition alternatives the entry corresponds to.