

Universiti Teknologi MARA

**Online Help Desk System Using Expert
System**

BY

**NOR FAEZAN BT AMDAN
2005731282**

**THESIS SUBMITTED IN FULFILLMENT OF THE
REQUIREMENTS FOR**

**BACHELOR OF SCIENCE (HONS)
INFORMATION SYSTEM ENGINEERING
FACULTY OF INFORMATION TECHNOLOGY
AND QUANTITATIVE SCIENCE**

OCTOBER 2007

ACKNOWLEDGMENT

“In the name of Allah, Most Gracious, Most Merciful”

First and foremost I would like to say thankful and Alhamdulillah that only with Allah blessings, I could finished this final year project. A full appreciation would be given to both my parents and family for all their support and understanding throughout the semesters and while I was completing my project.

I would like to express my gratitude to my project supervisor, Pn. Azlin Ahmad for providing me with a great supervision and giving me her advices and guidance from the first stage of this project. Thank you also to both ISE thesis coordinator, PM Dr. Wan Adilah Wan Adnan and PM Rashidah Rawi for their guidance in doing this final year project.

Special thanks to my friends and classmates, which have been supporting each other since the first day of doing the proposal until the day of submission of this final year project. Thank you for all the brilliant ideas that have been suggested.

Finally, I would like to say thank you to everyone that has been involved in this project whether it is formally or informally.

Thank you.

ABSTRACT

This research is about to develop an online help desk system with a troubleshooting that uses a rule-based expert system. The main focus for this research is to let user to be able to interact with the system independently to search for solution for problems encountered by them without having to wait for the engineers to consult them. The objectives of this research are to identify the characteristics of online help desk system using rule-based expert system, to design an online help desk system using rule-based expert system and to demonstrate a prototype of an online help desk system. A few prototypes and studies on troubleshooting using rule-based expert system has been chosen through the Internet in order to identify the characteristics of a rule-based expert system by analyzing what are the common characteristics that each of them have. The help desk system is then designed based on the characteristics found. The design and implementation of the help desk system is using PHP language and database used is Oracle 9i. The final product of this research is a prototype of an online help desk system using rule-based expert system. And by that therefore, all three objectives of this research have been achieved.

TABLE OF CONTENTS

CONTENT

PAGE

APPROVAL	i
DECLARATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
LIST OF TABLES	v
LIST OF FIGURES	ix
LIST OF ABBREVIATION	x

CHAPTER 1: INTRODUCTION

1.1	Introduction	1
1.2	Research Background	2
1.3	Problem Statement	3
1.4	Objectives	3
1.5	Scope	3
1.6	Research Significance	4

CHAPTER 2: LITERATURE REVIEW

2.1	Definition of Help Desk System	5
2.2	Expert System	6
2.3	Knowledge-based system: Rule-based System	

2.3.1	Knowledge-based System	7
2.3.2	Rules as Knowledge Representation Technique	8
2.3.3	Rule-based System	9
2.3.4	Structure of Rule-based System	9
2.3.5	Method of Rule-based System: Forward Chaining	11
2.4	Existing System: Characteristics of Rule-based Expert System	12
2.4.1	Expert System for Car Maintenance and Troubleshooting	12
2.4.2	Expert System: PDAMum	15
2.4.3	MobES Expert System	18
2.4.4	MYCIN	18
2.5	Summary	21

CHAPTER 3: METHODOLOGY

3.1	Introduction	22
3.2	Research Methodologies	
3.2.1	Problem Assessment Phase	24
3.3.1.1	Primary Data	24
3.3.1.2	Secondary Data	25
3.2.2	Data Analysis Phase	
3.2.2.1	Knowledge Acquisition	25
3.2.3	Design Phase	27
3.2.3.1	Knowledge Representation	28
3.2.3.2	Class Design	28
3.2.3.3	Interface Design	29
3.2.3.4	Database Design	29
3.2.4	Development Phase	30
3.3	Summary	30