Web Based Expert System For i-Faraid

Houssen Himeda Mohammed Nafed

UNIVERSITY UTARA MALAYSIA

APRIL 2009

Web Based Expert System For i-Faraid

This thesis is presented to the Graduate School
In fulfillment of the requirements for
Master of Science (Intelligent System)
University Utara Malaysia

By

Houssen Himeda Mohammed Nafed

PERMISSION TO USE

This thesis presents a partial fulfillment of the requirement for a postgraduate degree from University Utara Malaysia. I agree that the University Library may make It Freely available for inspection. I further agree that the permission for copyright of this these in many manners, in whole or part, for scholarly purpose may be granted by my supervisor or, in their absence by the Dean of the Graduate School. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood shall be given to me and to University Utara Malaysia for any scholarly use which may be made of any material from my thesis.

Requests for permission to copy or to make other use of materials in this thesis, in whole or in part should be addressed to:

Dean of Graduate School
University Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman

ABSTRACT

Expert system is one of the important Artificial Intelligence application. The design of the web based expert system for Islamic inheritance laws are different from conventional computer programs as they can solve problems by mimicking human reasoning, relying on logic, belief , rules of thumb, opinion and experience in Faraid. This thesis discusses web based expert system for Islamic inheritance law for all Muslims, and identify the rules of wealth distribution as stated in the Quran through a knowledge acquisition process with an expert in Faraid.

ACKNOWLEDGEMENTS

(وَقُل رَّبِّ زِدْنِي عِلْمًا)

By the Name of Allah, the Most Gracious and the Most Merciful

First, I would like to express my thanks and gratitude to Allah for giving me the courage and the strength to complete this thesis. I am also deeply indebted to my supervisor- Assoc. Prof Dr Norita Md Norwawi. My special thanks to her. I salute her courage for the outstanding interest she showed to my topic. The assistance in terms of stimulation of suggestions and encouragement- is immeasurable. I pray to Allah to make her future endeavour, an easy task, as her interest with Islamic topics. I would also like to thank Sheikh Ahmad Adnan bin Fadzil for his cooperation in sharing his knowledge and experience in Islamic inheritance laws that contributes to the success of this study.

TABLE OF CONTENTS

Title **Page**

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

AI	Artificial Intelligence
BERT	Expert System as Bank Expert
CALTREC	California Travel Expense Claim System
CARMA	Computer-Assisted Real Estate Market Analyst,
DFD	Data Flow Diagram
E-Faraid	Electronic Faraid
EIA	Environmental Impact Assessment
ES	Expert System
ESCAPE	Expert System for Claims Authorization
I-Faraid	Intelligence Faraid
OIMES	Online Islamic Medication Expert System

CHAPTER 1

INTRODUCTION

1.1 Overview

Starting with the development of expert systems in the early seventies, and also computer software, scientists always seek to resolve problems through intelligent programmes (Donald, 1986). Expert system is one of the important application oriented branches of artificial intelligence. In the beginning, expert system development is in health and business application . In this study, the area selected is application of expert system for Islamic inheritance laws, relying on rules, from (Al-Quran) and four schools of thought (*Almathaheb*) where Inheritance is one of the most important branches of Islamic family related to *mirath*. In legal terminology means, inheritance is to be divided from the property of the deceased among his successors. In order to understand *mirath*, it is important to understand the sources of Islamic law, an expression which is often used interchangeably with Syariah Law, Hukum Syara or the Syariah. The Syariah is revealed through the Holy Qur'an and the Traditions (Sunnah) of Prophet Muhammad (s.aw). The Islamic Law of inheritance, is designed to serve and its natural and practical approach have also been widely admired by Muslim and non-Muslim scholars alike. Islamic Law of inheritance, in its present form is a fixed scientific and beautifully harmonious system. In Islamic legal philosophy the rules of inheritance propound the ideal way for the deceased to fulfil his duty to his surviving relatives and members of the family. The issue of inheritance is of fundamental importance. If it is applied correctly all heirs receive their just and legitimate shares resulting in clean-heartedness, happiness and *barkat* (blessings).

The Islamic Law of Inheritance, is the most important branch of Shariah (Islamic Law) by providing rigid and clear-cut-rules of inheritance. In Sura al-Nisa (Al-Quran).

The contents of the thesis is for internal user only

REFRENCES

Acquire.com,(2005). Acquire Intelligence: Expert System. Retrieved 20 Septemper,2005, from http://www.aiinc.ca/information/es.shtml.

Ahmad, H. B. D. L. T. J. R. (2008). Online Islamic Medication Expert Systems (OIMES). IEEE.

Awad, E. M. (1996). Building expert systems. West Publishing Company.

Beanlands, G. A. (1994). The Application of Expert Systems to Environmental Impact Assessment. Annotated Bibliography. (GEBEC Consultants, Halifax).

Behan, J. (1987). Overview of Financial Applications of Expert Systems, Proceedings of IEEE Computer Society, WESTEX-87: Proceedings-Western Conference on Expert Systems, Anaheim, CA, pp. 223-229.

Cantu-Ortiz. (1991). Operational expert system applications in Mexico –Francisco, J. Cant˚-Ort (editor), Pergamon Press, publisher: Butterworth-Heinemann

Durkin, J. (1998). Certainty Therory.(1st E.) Expert System: Design and Development.(pp.350-353). United States of America: Macmillan Publishing Company.

Durkin, J. (1994). Expert Systems: Design and Development.(p.28). United States of America: Macmillan Publishing Company

Donald A. Waterman (1986). A guide to Expert Systems, United States of America: Addison-Wesley Longman Publishing Co., Inc

Engelmore. (1993). Introduction Expert Systems and Artificial Intelligence Retrieved May 6, 2005, from http://www.wtec.org/loyola/kb/c1_s1.htm

Finn, G. A. (1989). Applications of expert systems in the process industry. In: G.G. Patry and D Chapman eds..Dynamic Modeling and Expert Systems in Wastewater Engineering. Lewis Publishers, Inc. Chelsea. MI.Chapter 6, pp. 167-192.

Giarratano, J.C & Riley, G. D (2005). Expert System Life Cycle. (4th Ed.) Expert Systems: principles and programming.(pp.338-345). Canada Thomson Course Technology .

Holmes, W. T. M. E. W. (1989). The computer-assisted real estate market analyst: A knowledge-based real estate market analyst, Proc. of the 1989 Conference of the Northeast Decision Sciences Institute, .

Jackson, p. (1998). Expert System. (3th Ed). Intruduction to Expert Systems (pp.3-7). United States of America: Addison Wesley Logman .

Jackson, P. (1999). Introduction to Expert Systems, Addison Wesley England.

Khan, M. M. A. (20c 00). Islamic law of Inheritance. Aligarh Muslim University, Aligarh .

Liebowitz, J. (1991). Operational expert system applications in the United States. Oxford, U.K.: Pergamon.

Liebowitz, J. (2005). Journal of Information Systems Education ,Professor of Management Science George Washington University Washington.

Luger, (2002). Intruduction to Artificial Intelligence (4th Ed), Artificial Intelligence structure and strategies for complex problem solving,United states of America . Addisons Wesley . pp.5-8

Marican, P. (2004). Islamic Inheritance Laws in Malaysia, Malayan Law Journal: Sdn Bhd (76125-H) T1-6, Jaya 33, 3 Jalan Semangat, Seksyen 13 46100 Petaling Jaya, Selangor Darul Ehsan.

Mertens, S., Rosu, M., & Erdani, Y (2004). An Intelligent Dialogue for Online Rule Based Expert Systems .

Noran. (2000). A Course Advisor Expert System . Retrieved May 5,2005, from http://www.cit.gu.edu.au/nora

Osborn, P. A. W. Z. (1990). Building expert systems from the ground up, AI Expert, vol. 5, no. 5, pp. 28-35.

Pigford, B. (1990). Expert Systems for Business concepts and Applications, Boston: Boyd & Fraser Pub. Co.

Shinghal, Y. S. A. R. (1991). Operational expert system applications in Canada : Butterworth-Heinemann Newton, MA, USA

Stromquist, L. T., S. (1992). in Stromquist (Ed.) Environmental, Development, and Environmental Impact Assessment: Notes on Applied Research. Department of Physical Geography, Uppsala University, UNGI Nr 82.

Zarri, G. P. (1991). Operational expert system applications in Europe Oxford, U.K.: Pergamon.