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# **ONTOLOGY APPLICATION FOR THE AL-QURAN**

A thesis submitted to the Graduate School in partial  
Fulfillments of the requirement for the degree  
Master of Science (Information Technology)  
Universiti Utara Malaysia

By  
Farihan Elyana Binti Zahari

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## **ABSTRACT (BM)**

Pengetahuan berkait rapat dengan data dan maklumat yang telah diubahsuai. Pengurusan pengetahuan boleh dikongsi dan dihubungkan. Perkara yang paling penting, ia boleh digunakan untuk memodelkan sesuatu ilmu pengetahuan. Untuk skop yang lebih luas ia boleh digunakan untuk menstrukturkan *ontology*. Penggunaan *ontology* ke atas pengetahuan membantu pengguna memahami struktur itu dengan lebih mudah. Perkara penting dalam *ontology* ialah menunjukkan hubungan diantara kelas di dalam domain. Apabila hubungan telah dikenalpasti, barulah boleh memodelkan struktur *ontology* untuk Al-Quran. Bagi memodelkan struktur *ontology* ini kami menggunakan Protégé. Hasil daripada rekabentuk model menggunakan Protégé, satu struktur *ontology* untuk sembahyang telah terhasil dalam bentuk gambarajah. Penghasilan struktur *ontology* ini membantu dalam berkongsi ilmu pengetahuan dengan cara yang lebih mudah.

## **ABSTRACT (ENGLISH)**

Knowledge is related to data and information that already modified. Knowledge management can be shared and interlinked. For broader scope, it can be used to structure the ontology. The use of ontology on knowledge helps users to understand the structure easier. The important matter in ontology is represented by showing the relation among classes in domain. When the relation is already identified, then the structure of ontology for the Al-Quran can be modeled. Protégé is used to model the structure of ontology. Then, the pray visualization form will be produced. This structure of ontology will assists in sharing knowledge.

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## **LIST OF ABBREVIATIONS**

CODE	Conceptually Oriented Design Environment
JDK	Java Development Kit
API	Application Programming Interface
DOGMA	Developing Ontology-Grounded Methods and Applications
RAD	Rapid Application Development
UML	Unified Modeling Language
GUI	Graphic User Interface

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

The shape of the earth and how it evolves is often discussed in science. Nevertheless, it had been mentioned in the Al-Quran for a long time. The Al-Quran provides clear explanation about human and natural. Due to this, the Al-Quran has very essential knowledge to be shared by all human. As Khan (2005) said in “What Is Al-Quran”, that the Al-Quran is the Holy Scripture of the Muslims and was revealed precisely by Allah to the Prophet Muhammad through Jibreel. It provides the basic codes of conduct in all spheres of life. Ontology is the way to share knowledge in the Al-Quran. The Al-Quran in the form of conceptual model helps us to find suitable verse related to our problems. Model conceptual is used to map text representation onto ontology concept. Relationships among the verse in every *sura* are defined. As an example, a woman prays will define verse of *sura* according to justification about women. The *suras* and the verses are arranged in the Al-Quran in the manner indicated by

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