# Ontology for Extracting Knowledge from Different Data Sources (OnexDB)

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H. M. Waruni Champika

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Faculty of Information Technology

University of Moratuwa

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H. M. Waruni Champika

08/10035

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University of Moratuwa
102480

Dissertation submitted to the Faculty of Information Technology, University of Moratuwa, Sri Lanka for the partial fulfillment of the requirements of the Degree of Master of Science in Information Technology.

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**February 2011**

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# Declaration

I declare that this thesis is my own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been duly acknowledged in the text and a list of references is given.

H. M. Waruni Champika

Name of Student

Signature of Student

Date: 22-09-2011

Supervised by

University of Moratuwa, Sri Lanka.
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Prof. Asoka S. Karunananda

Name of Supervisor(s)

Signature of Supervisor(s)

Date: 22/09/11

# Dedication

This thesis is dedicated to my parents who have supported me all the way since the beginning of my studies.

Also, this thesis is dedicated to my loving husband who has been a great source of motivation and inspiration.

Finally, this thesis is dedicated to all those who believe in the richness of learning.

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# Abstract

The main purpose of this project is to develop a component for .NET and ASP.NET applications to improve the usability. With the development of software industry, several DBMS came to the market which is build-up with different technologies. Main communication method of DBMS is Structured Query Language (SQL). But SQL syntaxes have contrasts according to vendor. This project solution will allow developers to use SQL query translation / conversion from one database dialect to another in real time development environment. Due to SQL syntax incompatibility in different DBMS's will affect the software quality and performance.

Software developers are the main users of this product. Mainly it's defining the connected DBMS and SQL query as input. Solution will facilitate functionalities to conversion of SQL syntaxes for the connected DBMS. Provide synchronous communication with the software while real time SQL conversions. As well as take heed to return optimized result to the software. Queries optimized according to syntax ordering mechanism and syntax mapping will contain in a XML file.

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It is implemented by using Ontology concept in artificial intelligence for mapping categorized the related objects and their relationships between the different SQL syntaxes. This product consists with "DLL" libraries and XML files. DLL library files fully fill with functionalities of SQL conversions.

This solution will provide quick and reliable SQL query conversion utility to improve the productivity. "The Ontology for Extracting knowledge from different data sources" (OnexDB) is doing as the final year project of M.Sc. in Information Technology Moratuwa university.

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# List of Abbreviations

| | | |
|---|---|---|
| DBMS | - | Database Management System |
| SQL | - | Structured Query Language |
| XML | - | Extensible Markup Language |
| DLL | - | Dynamic Link Library |
| GUI | - | Graphical User Interface |
| API | - | Application Programming Interface |
| DML | - | Data Manipulation language |
| DDL | - | Data Definition Language |

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