

DEDICATIONS

To the spirit of my mother,,

My dear father,,

My husband,,

My brothers and sisters,,

My Venerable teachers,,

My colleagues,,

All science students,,

This research has modest.

And I ask God Almighty to benefit Islam and Muslims.

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ABSTRACT

Ontologies have become core components of many large applications. One of the more common goals in developing the ontologies is to Share common understanding of the structure of information among people or software agents. This research addresses the issues of why one would build an ontology and presents a methodology for creating ontologies. The idea is to design an ontology for Open Learning Domain and use it to add information that it becomes possible for computer systems to process information in meaningful and useful way.

This research listed the steps of ontology development process, and addressed the complex issues of defining class hierarchies, enumerated the terms that can possibly found in the domain, and then organized them in a hierarchy depending on which class subsumes another. And then defined properties for each class and the relationships linked these classes. Final step in designing the ontology was defining some instances to be able to make queries.

After The Ontology has been designed, it sent to the Reasoner to check classes consistency and to compute subsumption relationships.

An important result of this research is designing an ontology for Open Learning Domain, explicit representations and full definitions for MOODLE objects, properties and their relationships. Also can make any query to retrieve information about MOODLE. Furthermore, the designed ontology can be shared and reused in applications related to Open Learning Domain.

المستخلص

أصبحت الانطولوجيا عنصراً أساسياً ومهماً في العديد من التطبيقات الكبيرة. حيث نجد أن أحد أهم أهداف الانطولوجيا هو تبادل الفهم المشترك لبنية المعلومات سواء بين الناس أو وكلاء البرمجيات. الهدف الرئيس من هذا البحث هو بناء انطولوجيا لبيئة التعلم المفتوح تطبيقاً على نظام موودل (MOODLE) بحيث تكون متاحة لكافة أنظمة المعلومات لإستخدامها.

ذكرت في طيات هذا البحث الخطوات المتبعة في بناء الانطولوجيا كما تم توضيح القضايا المعقدة في التصنيف الهرمي لفئات النظام موضوع الدراسة ابتداءً من تحديد المجال ورصد كافة المفاهيم والخصائص والعلاقات، ثم بعد ذلك ترتيب المفاهيم (الفصائل) في شكل هرمي يوضح الفئات والفئات الفرعية بناءً على علاقة تضمين هذه الفئات. ومن ثم تم تعريف خصائص الفئات والعلاقات التي تربط بينها وأخيراً تم إنشاء نماذج أو أمثلة لفئات موودل حتى يتسنى إجراء الاستعلامات المرغوب فيها. وبعد الانتهاء من تصميم الانطولوجيا، استخدم المفكر (Reasoner) المضمن في أداة الدراسة لاختبار مدى انسجام فئات موودل، ولحساب علاقة تضمين هذه الفئات.

وتتمثل أهم نتائج هذا البحث في تصميم انطولوجيا لمجال التعلم المفتوح والحصول على تمثيل واضح لكائنات نظام موودل وخصائصها والعلاقات بينها؛ كما يمكن أيضاً من خلالها إجراء الاستعلامات لاسترجاع أية معلومات عن نظام موودل. بالإضافة إلى أنه يمكن مشاركة هذه الانطولوجيا وإعادة استخدامها في التطبيقات ذات الصلة بمجال التعلم المفتوح.

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