ONTOLOGY BUILDING TOOLS IN E-HEALTH

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Abstract

Recently, Information and Communication Technologies (ICT) are being used in health sector to improve services, client information and achieve high quality and cost-effective healthcare. E-Health means building a secure health network to improve the relations between a patient and people that offer the service, sharing data between institutions, and communication between patients and health professionals. Building an E-Health framework faces many challenges. Ontologies play a significant role in knowledge administration and integration of knowledge in health and healthcare and are being even more commonly used in E-Health. An ontology specifies the meaning and the relationship between concepts used in health information. This paper will analyze the role of ontologies and their impact in E-Health. In addition, the purpose of this paper is to identify tools used in implementing ontologies in E-Health. Ontology tools can be applied in every stage of ontology, from creation of ontology to maintenance of ontology. In addition, this paper will focus on designing ontologies, defining ontologies using the graphing user interface Protégé, using XSLT transformation for generating OWL (Web Ontology Language) ontologies in RDF (Resource Description Framework) / XML (Extensible Markup Language) format and how they relate to each other. XML, RDF (S) and OWL are used to implement tools for implementing the metadata of ontologies. OWL also is designed to support the Web Semantic by defying classes, two types of properties that are object and datatype properties and instances. The role of owl is to build the ontology, state facts and to reason about the ontology. Also the rule language, SWRL (Semantic Web Rule Language) can be used to increase the reasoning of OWL. And in the end of this paper we will use SPARQL, a query language for RDF, to answer query about OWL ontologies in E- Health.

Keywords: Ontologies, Ontology Building Tools, E-Health