ABSTRACT

Semantic Web, an extension of WWW is used to create a web of resources by giving well defined meaning to the information, so that the computer can understand. Ontology is the framework for organizing information in Semantic web. The knowledge representation language, OWL helps in creating ontology quickly and also makes the system to automatically process the information in web. The Unified Modelling Language (UML) is used in object-oriented developments and information system and help the developers to create and view the application visually. The variety of resources in the web are web pages, wiki pages, web services which contain multimedia content that are both static and dynamic in nature are retrieved by millions of users every day. Web applications are designed using UML models and several tools are available for designing UML models but the main drawback is that it lacks in semantics.

UML models are used to design web applications easily but the main drawback when it comes to information representation is their lack of semantics thereby no reasoning is possible. So there is a necessity to incorporate semantic information by transforming UML models to other standard knowledge representation format, to enhance the automated information retrieval process using semantic principles during the design
phase itself. Also, there is a requirement to transform web resources and UML models to other standard knowledge representation format, which will enhance the automatic process of information and helps in efficient search of semantic web applications.

So, the proposed system aims to incorporate semantics to the existing resources based on the categorization of these resources and augments reasoning also. Hence, various transformation like HTML to RDF, wiki page annotation, UML class diagram to OWL, web services annotation using SAWSDL are designed and efficiency in the retrieval of those resources are analysed. After discussing the methods involved in these transformations, the efficiency in the retrieval of those resources are analyzed. Some of the problems during such transformations like inconsistencies in the UML class diagrams are resolved and user preferences for non functional requirements in web service discovery are identified and determined.