CHAPTER 9

CONCLUSION AND FUTURE WORK

9.1 CONCLUSION

Semantic web is an extension to the existing web, that it seamlessly integrates with the World Wide Web in its present form by introducing better techniques in the storage and retrieval of information across the web. Ontology is the framework for organizing information in the semantic way that can be designed using knowledge representation languages such as OWL. Ontology allows the machines to identify the nature or characteristics of various keywords, phrases with respect to context that are easily understood by humans. To incorporate cognitive skills as like humans there is a need to represent the knowledge in a standard format and to infer knowledge by reasoning. Hence ontology defines context based information and helps in efficient, unique information retrieval.

The variety of data available in the web, may be basically categorized into web pages, wikis and web services with types of data varying from simple text content to complex multimedia content such as images, animations, video that are mostly static in nature as well as dynamic content such as interactive multimedia, or online competitions and role playing games.

To enable easier development of web applications UML models are used to design the applications, but their main drawback when it comes to
information representation is their lack of semantics. This implies that developers may have to backtrack on their design methodologies and use unfamiliar or comparatively primitive forms of object oriented web development to incorporate semantic information into their applications. Hence there is a need for efficient transformation of UML models to other standard knowledge representation format, thus enhancing the process of automated information retrieval using semantic principles.

The proposed web resources transformation architecture represents the variety of web resources by annotating them to include meaning to the resources thereby improves the access to these resources. At the modeling level, the proposed algorithm detects and resolves the inconsistencies that occur during the transformation of UML class diagrams directly to OWL. The generated OWL is stored in the repository that can be reused.

In the server level, the proposed representation systems for Web pages and Wiki pages represent the corresponding resources into machine understandable form. This improves the retrieval of these pages. Web pages are transformed to RDF and the system gives a concise content. Also the Mediawiki is included with semantics and the parser is enhanced to identify these microdata annotations.

At the user level, the web services are annotated to incorporate semantic information and refer the ontology for the discovery of web services. The proposed algorithm discovers these web services, ranks them based on the QoS requirements of the user. Also the user preferences of web services are analyzed.
9.2 FUTURE ENHANCEMENTS

The proposed transformation architecture can be improved in all the three levels. The transformation and inconsistency detection can be done using Fuzzy concepts. Domain specific Ontological mapping for web pages and wiki pages can be considered. Third party authorization and monitoring of QoS values of web services is to be considered. User preferences of the web services can be predicted using machine learning techniques. Also trust and composition of the discovered semantic web services can be designed and analyzed.