CHAPTER 7
CONCLUSION AND FUTURE ENHANCEMENT

7.1 CONCLUSION

The objective of the KBQA system is to provide the most relevant answer for the question posted by the user. In this research, the experiments were carried out with 500 questions with their answers. The datasets were taken from the Yahoo Answers, SPSS and tested with the real time application. The syntactic and semantic structure of the question and answer given by the user was analyzed and the semanticness is preserved with the construction of ONTO-KBQA ontology. ONTO-KBQA was acting as the repository of the KBQA system. While constructing the ontology, the semantic concepts and relations were preserved. The correctness of the relationship was checked with the Pallet reasoner.

The answers were collected from the various resources like web, repository, and the collaborative forum. Question analysis was improved and analyzed by integrating with more number of rules. The unavailable answer in the repository was collected from the collaborative forum. The collaborative forum was implemented with fuzzy reasoning and it helped to check the correctness of the answer.

After the analysis of question and answers, they were mapped to each other with the support of rule based concept mapping. LP-LSA of concept mapping was implemented which increases the accuracy of the search. To improve the performance of the system, concept mapping was integrated with rule based mapping.

Rule based concept mapping of question with their answers were implemented by integrating LPLSA with DL, and SWRL. Description logic for
all the classes was defined and SWRL rules were inferred to assess the knowledge base. SPARQL was applied to retrieve the answers from the repository. The correctness of question with their mapped answer is also checked with the reasoner.

The ranking process of the answers to a given question achieved with the support of NDCG method. The threshold value and the voting system were considered in the ranking of answers and the most relevant answer for the user’s question was given back to the user. The accuracy of the KBQA system was compared with other QAS system. The inference made from the comparison is that the KBQA system accuracy was improved 6% than PANTO and the accuracy achieved by KBQA system is 86%.

### 7.2 FUTURE ENHANCEMENT

The KBQA System was developed with most essential features of semantic analyzer, collaborative forum, rule based concept mapping, and ranking which provided the most suitable answer to the user’s query. It is necessary by adding few more features to enhance the system. This thesis suggests the five future directions for enriching the KBQA System.

- The KBQA system is analyzing only the text documents. In future, the multimedia documents such as image, text, audio, and video have to be included to enrich the KBQA system.
- The KBQA system has to be implemented in cloud computing and big data analytics.
- The KBQA system is now supporting only English language. Further, it will be implemented by supporting the multilingual concept.
- The KBQA system will be implemented as a mobile app for the user convenience so that every user can get benefited by using this knowledge portal.
- The KBQA system will be incorporated as an interactive system with the support of chat application which helps to solve the user's doubt immediately.