***Chapter 5***

**CONCLUSION AND FUTURE SCOPE**

**5.1 Conclusion**

This work introduces implementation of web caching and prefetching. Web caching and prefetching are widely using techniques in today’s world. In every organization they are maintaining cache servers to improve performance. Prefetching is another powerful technique which predicts the next sub sequent requests and stores them in to the cache. Web caching technique exploits the temporal locality, whereas prefetching technique utilizes the spatial locality of web objects. Combining those two techniques improves the performance greatly when compared to the single technique alone. The unique characteristics of web caching impose numerous challenges like stale data, delay at cache. Even prefetching too creates some challenges like prefetch miss, bandwidth usage. This work describes the use of web when we combine web caching and prefetching techniques.

The work presents the web caching and prefetching algorithms that are implemented using discreet event simulation using java programming language. In this thesis, we assume every web object is of same size and we also assume that all delays are negligible. How the accuracy of web cache hit rate is increasing with the help of prefetching is discussed. In order to clear the stale data present in the web cache we compared objects life time with the current time. Finally, we compared the proposed web caching and prefetching algorithms with other algorithms and shown how the accuracy is improved.

**5.2 Future Scope**

The future work of this thesis can be expanded in many directions. We have not consider web objects with different sizes. If objects with different sizes will also include then there is a lot of scope to measure byte hit ratio of the both web caching and prefetching algorithms. We have not simulated our approach in real web. It is possible to implement this work in real web with the help of servers like apache, wamp server etc. It is also possible to introduce new approaches in web cache algorithm by adding some extra features to the existing algorithms. Even it is possible to introduce new prediction algorithm for accurate prediction of the users next sub sequent requests.

Future research is required to achieve more efficiency of the web with less number of miss rates. Implementing the web caching and prefetching in mobile networks is another challenging area. Performance must be evaluated in the terms of hit ratio and delay.