Networks Lab – Winter Semester 2015-16
Assignment 2 – DNS – Modification **Dated 28th Jan 2016**

DNS Caching

Answer all the questions.

1. Calculate the number of DNS messages sent and received in a query chain w.r.t. your base code.

2. DNS extensively exploits DNS caching in order to improve the delay performance and to reduce the number of DNS messages circulating around the Internet.

[Definition: DNS caching :If a hostname/IP address pair is cached in a DNS server and another query arrives to the DNS server for the same hostname, the DNS server can provide the desired IP address, even if it is not authoritative for the hostname].

Implement DNS caching facility in the local DNS server to cache the IP addresses of TLD servers, thereby allowing the local DNS server to bypass the root DNS servers in a query chain.

3. Calculate the number of DNS messages sent and received in a query chain in the system which is now modified with DNS caching.

4. Analyse the number of DNS messages sent and received in these two architectures – with and without cache. Does the DNS caching reduce the number of DNS messages in a query chain? Expalin in 2-3 sentences.