CS224 (m): Computer Networks (minor)
Tutorial 03, 10/12 Aug 2016

Concepts tested: DNS, SMTP

1. Find out the domain names and IP addresses of all the root name servers, using dig.

2. Observe a DNS query/response when using the dig command.

3. Observe DNS caching during a browsing session, over wireshark.

4. Find out the domain names and IP addresses of some top level domain name servers using dig.

5. Find out the name server for the google.com domain using dig.

6. Find out the mail server for the gmail.com domain using dig. Is it the same as the mail server for the google.com domain?

7. Observe the use of DNS for load balancing of web servers, using dig.

8. Extra: learn how to use dig to do a reverse name lookup. What type of DNS record is used for such reverse lookups?

9. Which entity in the email system implements the vacation email service? Reason out.

10. What protocol does the user agent of web-mail use? Reason out.

11. Looking at the headers of an email, find out the sequence of mail servers it went through, before reaching your mail server.

12. Confirm that the email server mentioned in your email's header matches the MX record corresponding to the domain of your email address. You'll have to use the dig command for the MX record lookup.

13. Look through the message headers of a series of messages in a single thread (or conversation), and figure out how the messages are classified as belonging to the same thread.