Prelab 2 - HTTP, DNS, and TCP:

Suggested Resources:

https://www.ietf.org/rfc/rfc2616.txt
https://www.ietf.org/rfc/rfc1035.txt
https://linux.die.net/man/
http://www.tcpipguide.com/free/

HTTP Questions

1. [10 pts] Choose 5 HTTP status codes and describe each one.
2. [10 pts] List the 8 HTTP 1.1 methods and explain what they do.

wget and *telnet* are two commonly known command line tools for testing and debugging. Answer the following questions by using your Mininet VM's terminal **or** the Unix timeshare.

3. [10 pts] Use *wget* on *example.com* to view the last modified date of the webpage. What was the HTTP return status given and what command was used to do this? (The command should not download the file! Hint: Look into the wget man page.)
4. [10 pts] Look up the *telnet* command. Use *telnet* to connect to *towel.blinkenlights.nl*. What does this telnet server do?

DNS Questions

5. [10 pts] In your own words describe what a DNS resource record (RR) is. Now using the command line tool *nslookup* find the *MX* resource record of *ucsc.edu*. What does this resource record mean?
6. [10 pts] What does the command *nslookup -type=ns .* do*?* Explain its output. (Note: the . is part of the command!)

TCP Questions

1. [5 pts] How can multiple application services running on a single machine with a single IP address be uniquely identified?
2. [10 pts] What is the purpose of the window mechanism in TCP?
3. [10 pts] What is an MTU? What happens when a packet is larger than the MTU?
4. [15 pts] Show (with a Wireshark screenshot) a packet containing a TCP segment, which is piggybacking an ACK.

Submission:

You will submit one file for this assignment:

1. <your student id>-prelab2.pdf
    a. The PDF with your solutions to Prelab 2