COMP 484L Spring 2015 **Homework 1**

Due Wednesday, February 11th 2015 (Week 4) at 11:55pm to Moodle

Late submissions will be penalized by 5% per day (or part thereof), up to 20 days. After 20 days, the assignment will be given a 0%.

Requirements: Submit to Moodle a file named Homework1Answers.txt (or Homework1Answers.pdf, if using a WYSIWYG editor such as MS Word).

Do not submit a Homework1Answers.doc or docx file…in other words, no MS Word files. **Convert any Word files to PDF.**

Answer all of the following **bolded** questions ***in your own words***. No form of plagiarism will be tolerated (including copying answers from peers/internet)!

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1)

a. Download putty.exe at its web page www.chiark.greenend.org.uk/~sgtatham/**putty**/download.html

b. Read the following link to configure putty to telnet to a web server
http://forums.udacity.com/questions/6003729/windows-using-putty-as-a-telnet-client

c. When you start PuTTY, connect to www.csun.edu on port 80, logging all session output to a local file (which you can copy/paste from into your answers)

d. When the session starts, type the following:

```
GET / HTTP/1.1
Host: www.csun.edu
```

Then type 2 newlines.

e. **What is the first line received from the server?**

_____

f. **What is the meaning of the numeric status code you receive in this line (from prior question)?**

_____

g. **In general, what does the command "GET /" do?**

_____

h. **Write the equivalent URL to access this site…**

_____

i. **Does the command "GET /index.html HTTP/1.1" work instead? What do you receive?**

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j. **In the received HTML part of the response, what is the very last tag (after the </html>) ?**

_____

k. **Does the command "GET /xxyz.html HTTP/1.1" work? What is the first line received from the server now? What is the meaning of this status code?**

_____

l. **What web-server type and version is being run at www.csun.edu in the heading in step k?**

_____

2) A fictional webserver at adamkaplan.org is configured so that its DocumentRoot (root directory for web files) is /var/www

Consider the following URL… https://adamkaplan.org/images/words/dream.html

a. What is the complete path of the file dream.html on the server?

_____

b. What is the domain name of the server?

_____

c. What is the protocol being used?

_____

d. What port (on the server) will the web browser try to connect to for this request?

_____

3) Use the website mxtoolbox.com to run a DNS lookup. At the prompt, enter a domain. Then, in the results, click Transcript for full details of the search.

a. **What is the session transcript for the domain www.cs.ucla.edu?**

_____

b. **What is the session transcript for the fictional domain adamkaplan.org?**

_____

c. **Read the following link**
http://technet.microsoft.com/en-us/library/cc775637%28v=ws.10%29.aspx
(or search for keywords "How DNS query works microsoft technet" in a search engine)

From the link, how does the iteration style (i.e. referral answer) differ from the DNS procedure outlined in Slide 25 of Lecture 2. (answer in at least a paragraph)

_____

d. **What style of resolution is being used in the DNS lookups you ran at mxtoolbox.com (recursive or iterative)? How do you know?**

_____

4) Show the entire URL in the browser's address bar after the following form is submitted. Assume the user did not change any defaults before clicking the Submit button.

```
<form method="get" action="http://akaplan.edu/echo.php">
  <input type="hidden" name="a" value="b">
  <input type="hidden" name="q" value="15">
  <textarea name="d" rows="4" cols="20">funk</textarea>
  <input type="text" name="c" size="1" maxlength="1" value="4">
  <input name="b" type="radio" value="1">
  <input name="b" type="radio" value="2" checked>
  <input name="b" type="radio" value="3">
  <select name="e">
    <option value="z" selected></option>
    <option value="y"></option>
    <option value="x"></option>
  </select>
  <input type="reset" value="Reset">
  <input type="submit" value="Submit">
</form>
```

URL: _____

5) Using the tracert command in your Windows command prompt, trace the route through the internet to the following servers…

In your answer, write how many hops were needed from your machine to the destination.

a) **www.csun.edu**

_____

b) **www.youtube.com**

_____

c) **www.cs.vu.nl**

_____

6) Host A initiates a connection to host B via TCP, and A's random number generator provides sequence #42. Host B's random number generator provides sequence #109. What are the packets exchanged to establish the connection (i.e. the 3-way handshake packets)? For each packet, show the source host (A or B), the destination host (A or B), the sequence number, acknowledgment number (if applicable), and the flags that are set.