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Networking
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Ch. 3 Project on Canvas- "Using Networking CLI Commands"

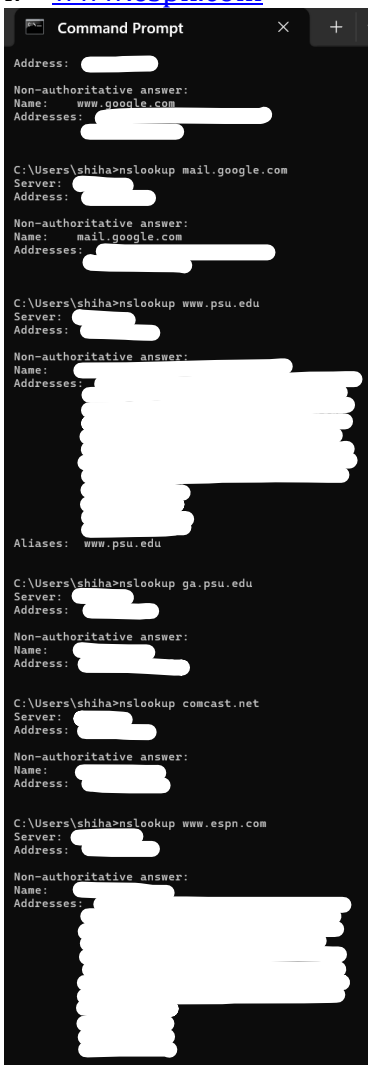
Using the Command-Line Interface (CLI) Command Prompt within Windows or terminal within MacOS to provide the following information:

1. (12 Points) Provide a screenshot(s) showing the following information:
    a. IPv4 address
    b. Subnet mask
    c. Gateway address (Hint: MacOS CLI command "netstat –nr | grep default")
    d. DNS servers (Hint: MacOS CLI command "cat /etc/resolv.conf")
    e. MAC address
    f. Host name

2. (12 Points) What command(s) did you run to provide this information?
    a. IPv4 address
    b. Subnet mask
    c. Gateway address
    d. DNS servers
    e. MAC address
    f. Host name

I used the *ipconfig /all* command from command prompt.

3. (12 Points) Every website you visit is hosted on a webserver, which has an IP address associated with it. Using the nslookup command provide the IP address(es) associated with the following Fully Qualified Domain Names (FQDNs):
   a. www.google.com
   b. mail.google.com
   c. www.psu.edu
   d. ga.psu.edu
   e. comcast.net
   f. www.espn.com



4. (14 Points) The ping utility is used to verify that the TCP/IP is installed, bound to the NIC, configured correctly, and communicating with the network. Using the ping command identify which of the following FQDNs or IPs you receive an echo reply from and which you do not. Refer to Figure 3-22 Pg. 144 in your textbook to see an example of an echo reply when using the ping command.

a. 127.0.0.1 - Yes, I've received an echo reply.
b. www.google.com - Yes, I have received an echo reply.
c. www.psu.edu - Yes, I have received an echo reply.
d. www.bbb.com - No, I have not received any echo reply.
e. comcast.net - No, I have not received any echo reply, but with *www.* added, there is an echo reply.
f. www.espn.com - Yes, I have received an echo reply.
g. www.seanbeck.com - No, I have not received any echo reply, because it is not a real host.

5. (Bonus 9 Points)
   a. What is a loopback address?
      A loopback address (often 127.0.0.1) is a special IP address used to test network communication within the same device. It does not route to the external network.

   b. Can the loopback address be pinged if your computer does not have an IP address?
      Yes, you can ping the loopback address even if your computer does not have an external IP address assigned. It tests internal network communication, not external connectivity.

   c. Can a website IP address not receive replies from ping, but still be viewable within a web browser?
      Yes, a website's IP address might not respond to ping while still being accessible through a web browser. Ping tests basic connectivity, while browsing involves additional protocols and services. A website could be running but have firewalls blocking ping requests.