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Course/Section: BSIT – 3B

Subject: IT115 – Networking 1
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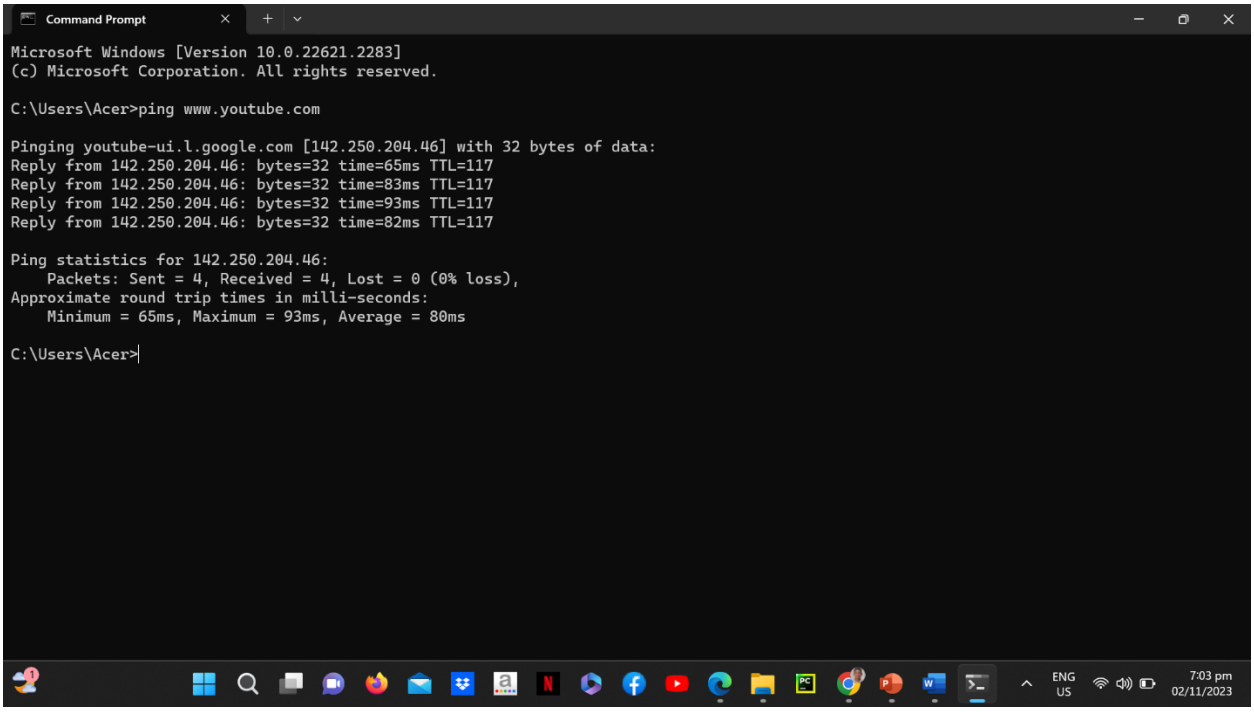
Ping and Traceroute

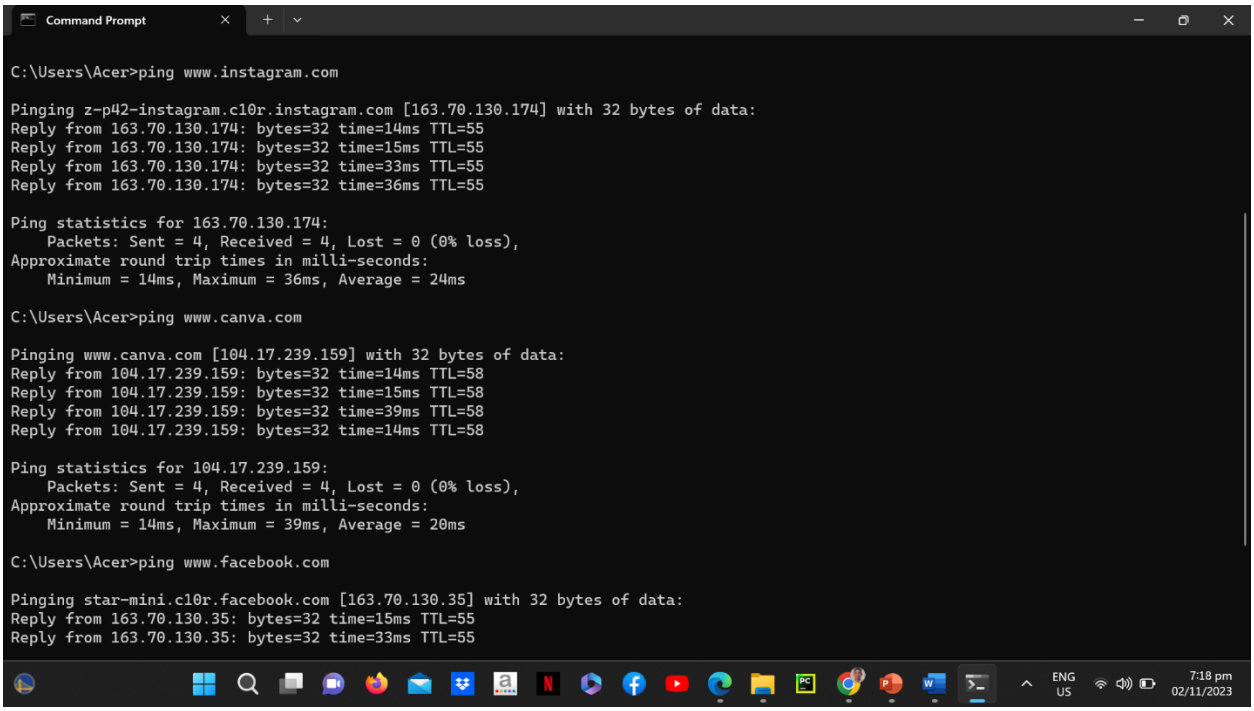
Ping Exercise Part 1 (30 points)

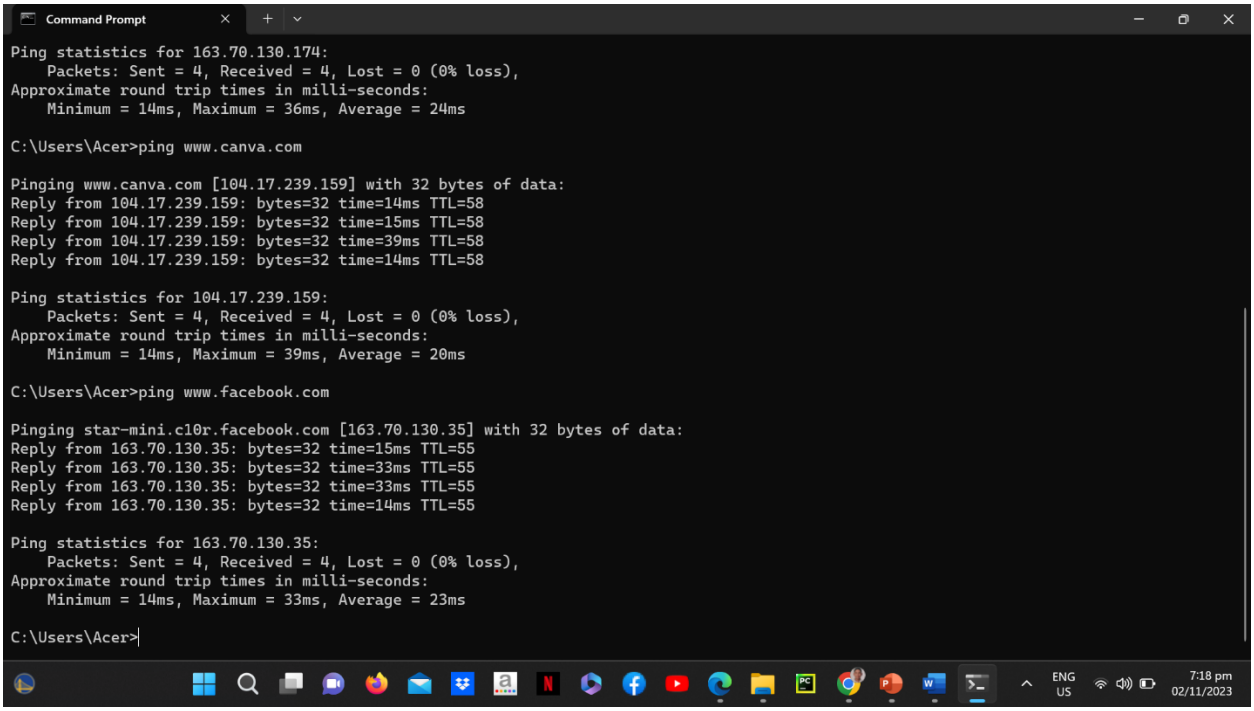
1. Pick the address of a site you visit. You are going to use it to test some network diagnostics. What happened when you ping your site?



YouTube is the site I chose to ping. When I ping the domain name of YouTube, I have noticed that the prompt produces a unique IP address for YouTube which is 142.250.204.46. Next to the IP address are four different ping signals with different values of 65ms, 83ms, 93ms, and 82ms.

2. Try it with a few more examples. What is happening?





When I try different websites, I have noticed that each website produces unique IP address as well as different ping signals. I also noticed that each packet being sent has been received which means there is no packet loss. I observe that by pinging different websites, I can say that my network is performing well and I can access websites at its best.

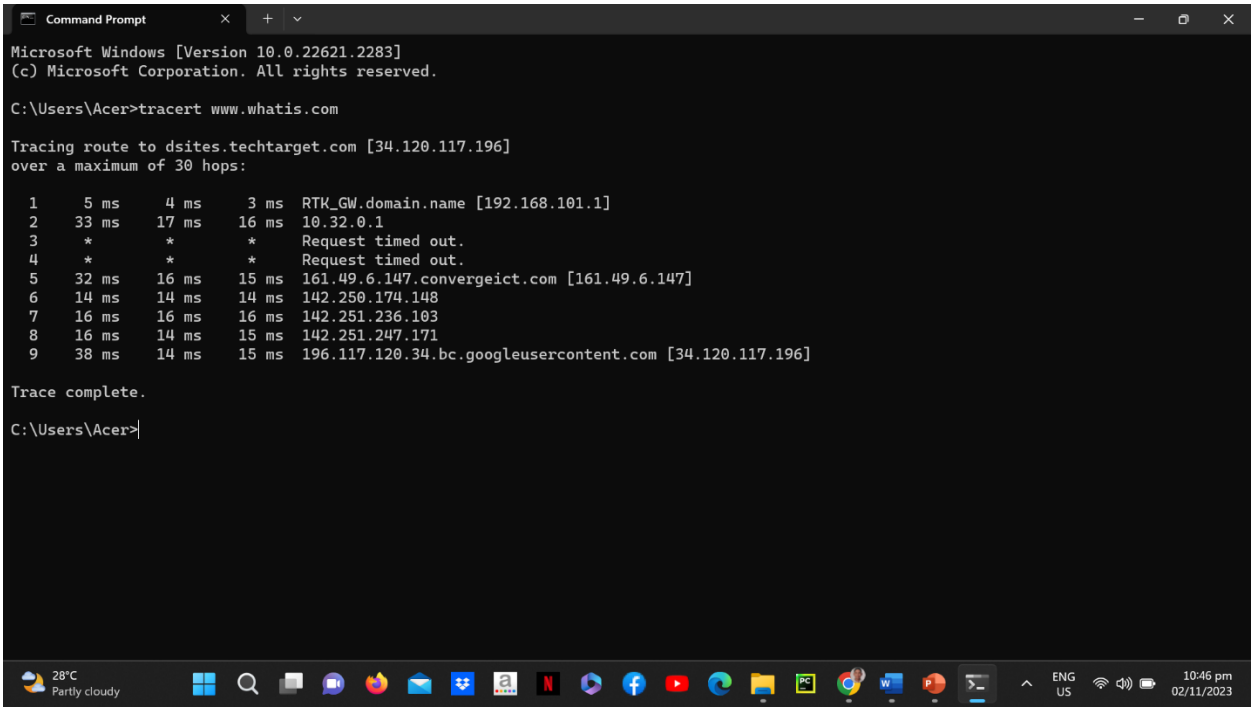
3. How can ping be useful?

Ping can be very useful because we can test if our network connection is performing well or not. Through ping, we can determine if our network connection is experiencing connectivity issue. We can also determine the capacity of what we can do with our networking connection because of the ping. For example, if our ping is good, we can use social media and other online platforms with ease and accessible and also, we can play online games smoothly without experiencing any lags and if our ping is not good and there is a connectivity issue, we can't perform those activity well.

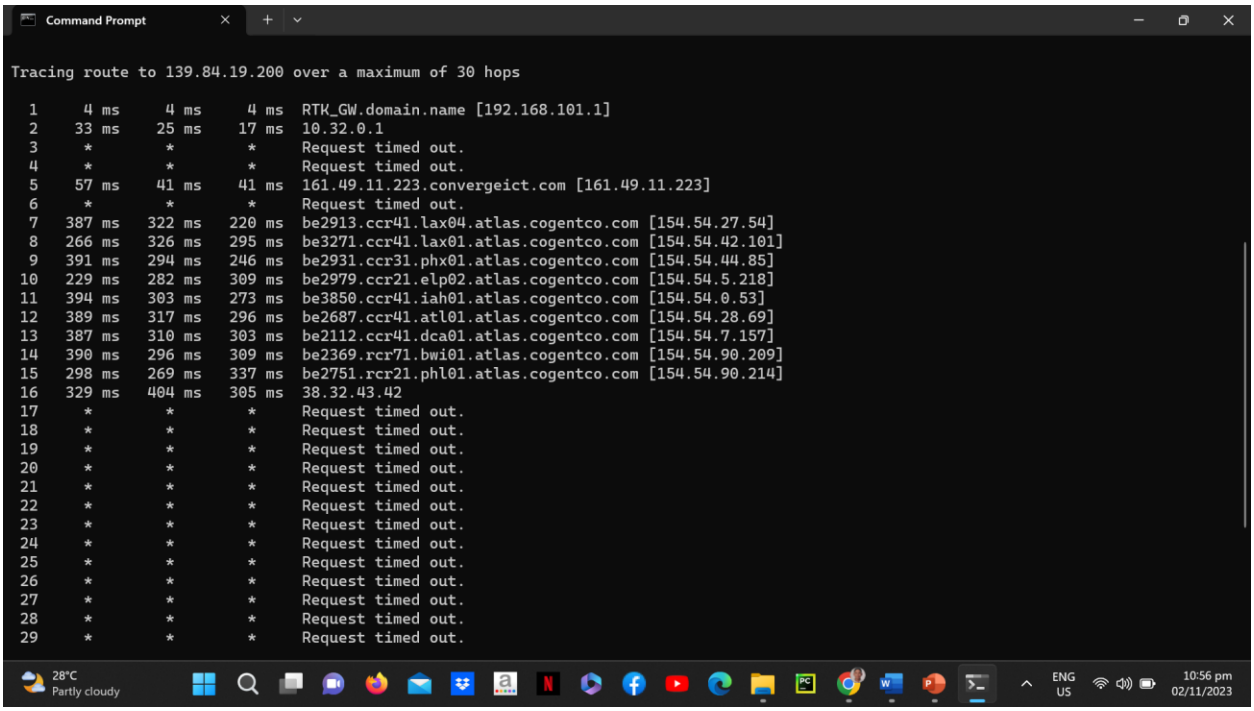
Tracert Exercise Part 2 (40 POINTS)

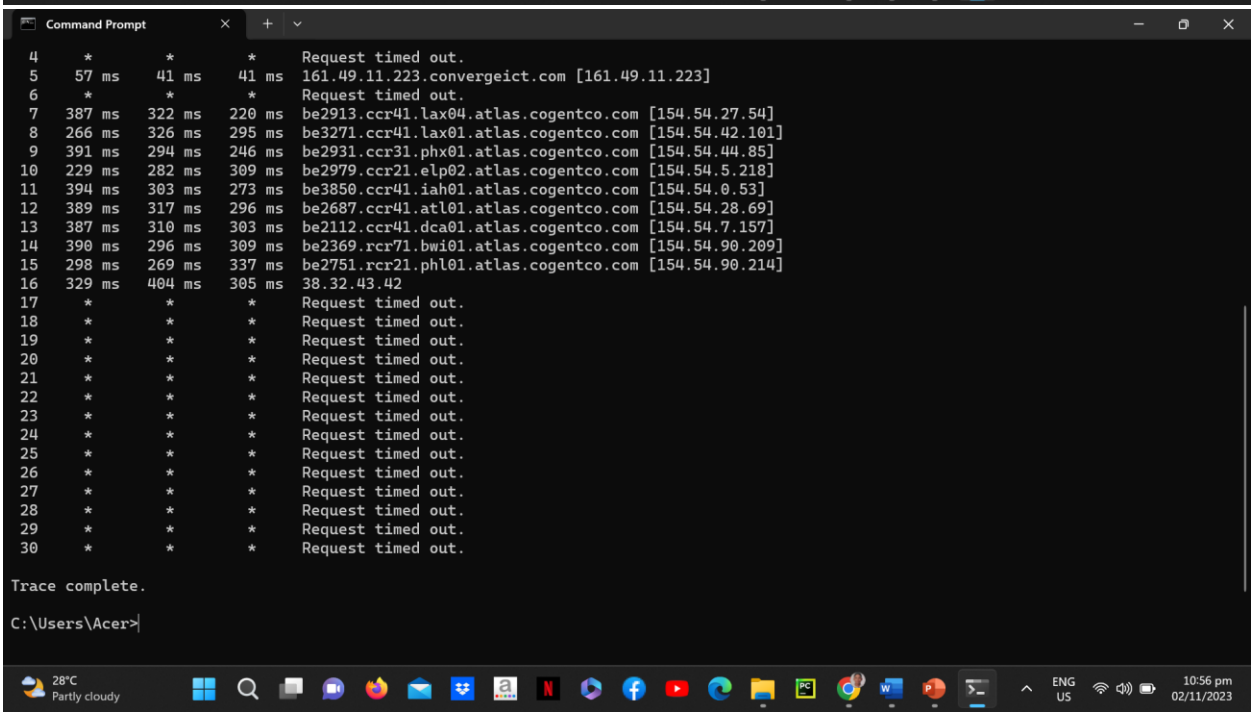
1. Using the command prompt and tracert command, find the route to

- www.whatis.com



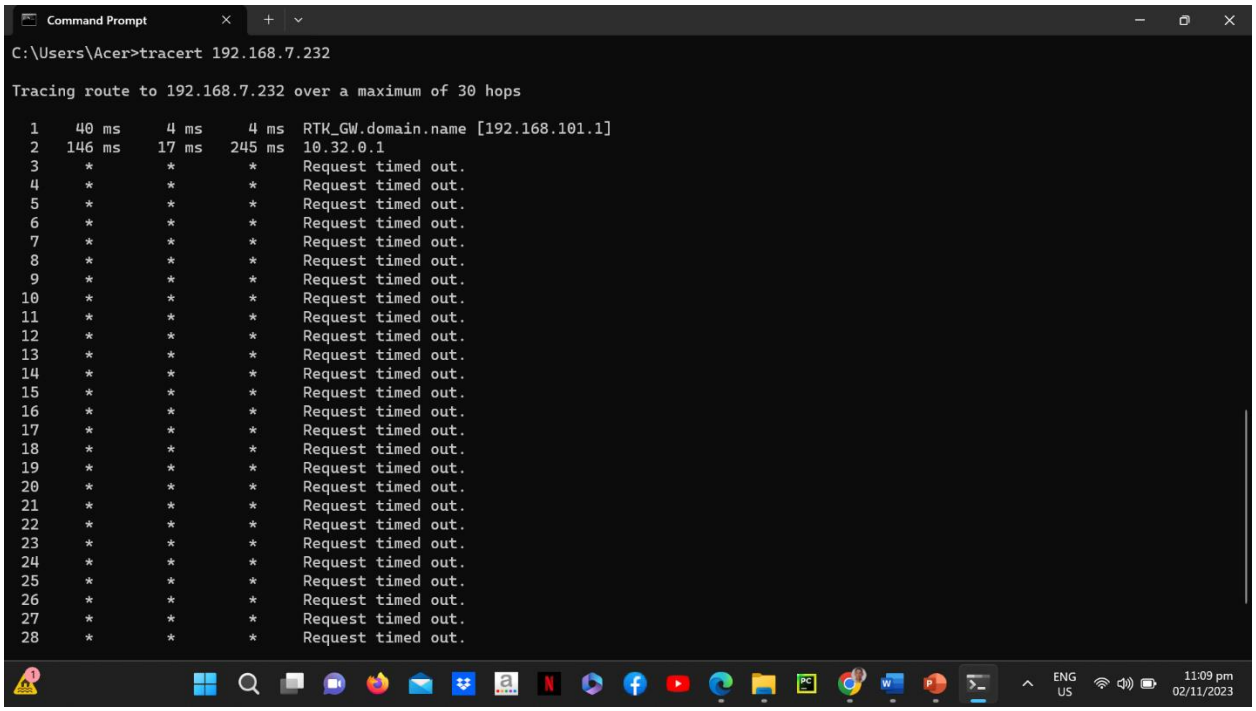
- 139.84.19.200





2. Ask your classmate for their ip address – trace the route to them.

- 192.168.7.232 – IP address of Mr. Kevin Miralles


Command Prompt
C:\Users\Acer>tracert 192.168.7.232
Tracing route to 192.168.7.232 over a maximum of 30 hops
1 40 ms 4 ms 4 ms RTK_GW.domain.name [192.168.101.1]
2 146 ms 17 ms 245 ms 10.32.0.1
3 * * * Request timed out.
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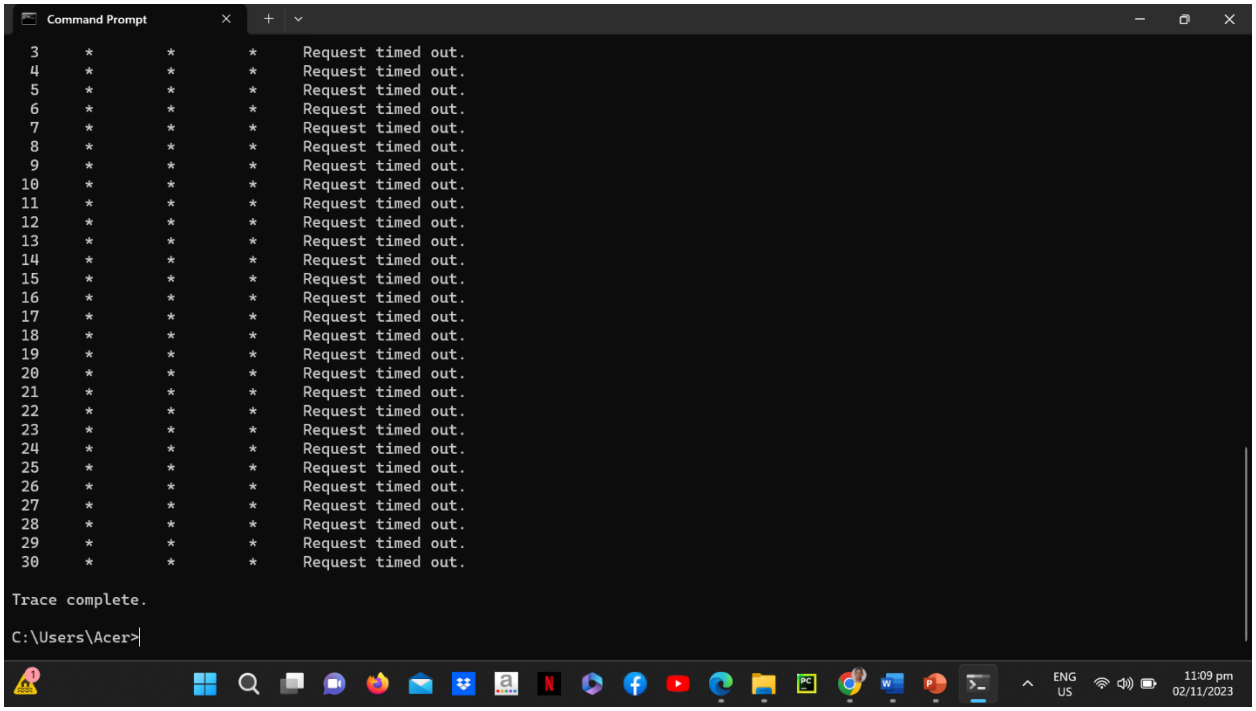
28 * * * Request timed out.
ENG
US
11:09 pm
02/11/2023


Command Prompt
3 * * * Request timed out.
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29 * * * Request timed out.
30 * * * Request timed out.
Trace complete.
C:\Users\Acer>
ENG
US
11:09 pm
02/11/2023

Other TCP/IP diagnostic commands:

Command	Meaning	Job
Nbtstat	NetBIOS over TCPIP Statistics	is a TCP/IP utility that displays current TCP/IP connections and statistics using NetBIOS over TCP/IP (NetBT). Nbtstat is installed on a computer running Microsoft Windows when the TCP/IP protocol stack is installed.
Netstat	Network Statistics	It is a command used to show network status. Traditionally, it is used more for problem determination than for performance measurement. However, the netstat command can be used to determine the amount of traffic on the network to ascertain whether performance problems are due to network congestion.
Ipconfig	Internet Protocol Configuration	It is a command-line utility used for managing and troubleshooting network connections, display information about IP addresses, subnet masks, default gateways, DNS servers, and more. You can also use it to renew or release DHCP leases, flush DNS caches, and perform other network-related tasks.
Arp	Address Resolution Protocol	It is a command that displays and modifies the Internet-to-adapter address translation tables used by the Address in Networks and communication management. The arp command displays the current ARP entry for the host specified by the HostName variable. The

		host can be specified by name or number, using Internet dotted decimal notation.
Hostname		The hostname command can be used to retrieve and set the host, domain, or node name of the current system. Hostnames are important as they are what is used by most networking programs to identify your machine. Using unique hostnames, you will be able to identify and connect to machines within a network quickly.
Route		It displays or modifies the computer's routing table. For a typical computer that has a single network interface and is connected to a local area network (LAN) that has a router, the routing table is pretty simple and isn't often the source of network problems. Still, if you're having trouble accessing other computers or other networks, you can use the route command to make sure that a bad entry in the computer's routing table isn't the culprit.

References:

https://networkencyclopedia.com/nbtstat/

https://www.ibm.com/docs/en/aix/7.2?topic=analysis-netstat-command

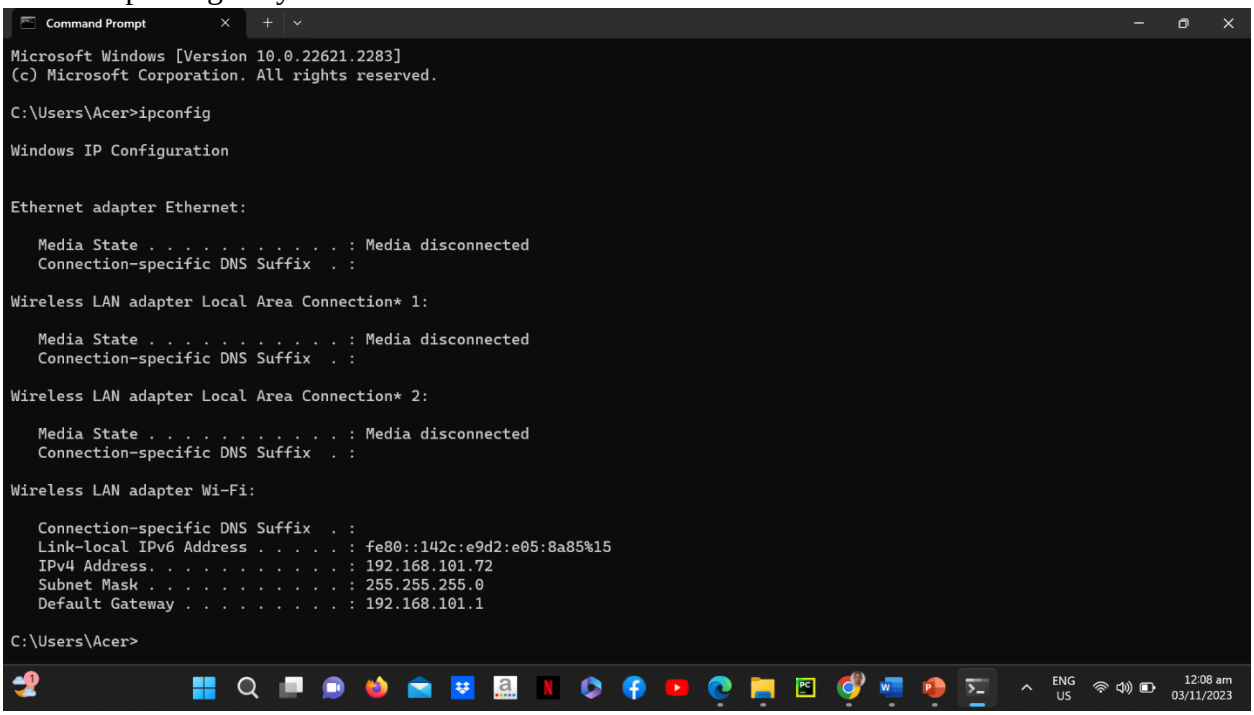
https://blog.invgate.com/ipconfig

https://www.ibm.com/docs/en/aix/7.2?topic=arp-command

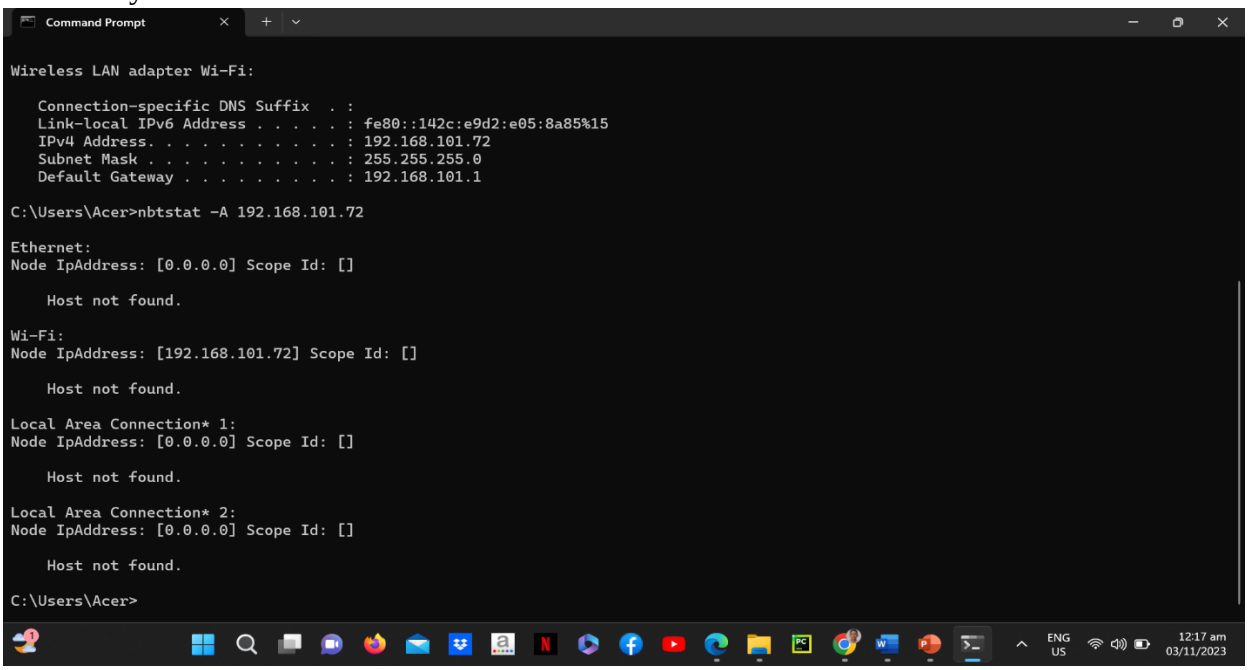
https://pimylifeup.com/hostname-command/

Another Exercise Part 3 (30 points)

- Find the ipconfig for your machine.



- Open the command window
- Use the NBTSTAT command
- Run the NBTSTAT command using your ip address for your machine. Use the –A option. What did you find out?



Trying the NBTSTAT command with the -A option in my ip address, I found out that for my IP address there is no host that has been found which means that there is no registered NETBIOS name on the IP address.