

# Lab Tasks

(Attach screenshot of command prompt/terminal wherever required.)

(AI-generated answers are not acceptable. Make sure all responses are written in your own words.)

1) Find the IP address of the computer you are currently using.

Command: ipconfig

IP Address: 192.168.100.15

```
Command Prompt
Microsoft Windows [Version 10.0.19045.6466]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Hp Elitebook 840 G3>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Ethernet adapter Ethernet 2:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::8613:9737:432c:2d2c%6
    IPv4 Address. . . . . : 192.168.56.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . :

Wireless LAN adapter Local Area Connection* 1:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 10:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter WiFi:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::bcaa:7d4c:6ca6:68b2%9
    IPv4 Address. . . . . : 192.168.100.15
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.100.1

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :
```

```
Command Prompt

Wireless LAN adapter WiFi:

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::bcaa:7d4c:6ca6:68b2%9
    IPv4 Address. . . . . : 192.168.100.15
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.100.1

Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Ethernet adapter vEthernet (Default Switch):

    Connection-specific DNS Suffix  . :
    Link-local IPv6 Address . . . . . : fe80::25a6:79fe:a5c3:dede%32
    IPv4 Address. . . . . : 172.24.160.1
    Subnet Mask . . . . . : 255.255.240.0
    Default Gateway . . . . . :

C:\Users\Hp Elitebook 840 G3>
```

2) Find the IP address of the computer you are currently using, plus MAC address, the gateway, plus whether DHCP is turned on.

Command: ipconfig/all  
IP Address: IP: 192.168.100.15, MAC: 7C-2A-31-47-09-7D,  
Gateway: 192.168.100.1, DHCP: Enabled

```
Select Command Prompt
C:\Users\Vip Elitebook 848 G3>ipconfig/all

Windows IP Configuration

Host Name . . . . . : DESKTOP-BNU761L
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Ethernet:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Intel(R) Ethernet Connection I219-LM
Physical Address. . . . . : 10-62-E5-F4-AC-92
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Ethernet adapter Ethernet 2:

Connection-specific DNS Suffix . :
Description . . . . . : VirtualBox Host-Only Ethernet Adapter
Physical Address. . . . . : 0A-00-27-00-00-00
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::8613:9737:432c:2d2c%6(Preferred)
IPv4 Address. . . . . : 192.168.56.1(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
DHCPv6 IAID . . . . . : 755630119
DHCPv6 Client DUID. . . . . : 00-01-00-01-2C-7A-FD-C8-10-62-E5-F4-AC-92
DNS Servers . . . . . : fec0:0:0:ffff::1%1
                       fec0:0:0:ffff::2%1
                       fec0:0:0:ffff::3%1
NetBIOS over Tcpip. . . . . : Enabled

Wireless LAN adapter Local Area Connection* 1:

Media State . . . . . : Media disconnected
```

```
Select Command Prompt
Wireless LAN adapter Local Area Connection* 1:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address. . . . . : 7C-2A-31-47-09-7E
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 10:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
Physical Address. . . . . : 7E-2A-31-47-09-7D
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . :
Description . . . . . : Intel(R) Dual Band Wireless-AC 8260
Physical Address. . . . . : 7C-2A-31-47-09-7D
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::bcaa:7d4c:6ca6:68b2%9(Preferred)
IPv4 Address. . . . . : 192.168.100.15(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : 24 January 2026 18:02:05
Lease Expires . . . . . : 26 January 2026 14:16:01
Default Gateway . . . . . : 192.168.100.1
DHCP Server . . . . . : 192.168.100.1
DHCPv6 IAID . . . . . : 125577777
DHCPv6 Client DUID. . . . . : 00-01-00-01-2C-7A-FD-C8-10-62-E5-F4-AC-92
DNS Servers . . . . . : 192.168.100.1
NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Bluetooth Network Connection:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
```

```
Select Command Prompt

DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::bcaa:7d4c:6ca6:68b259(Prefered)
IPv4 Address. . . . . : 192.168.100.15(Prefered)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : 24 January 2026 18:02:05
Lease Expires . . . . . : 26 January 2026 14:16:01
Default Gateway . . . . . : 192.168.100.1
DHCP Server . . . . . : 192.168.100.1
DHCPv6 IAID . . . . . : 125577777
DHCPv6 Client DUID. . . . . : 00-01-00-01-2C-7A-FD-C8-10-62-E5-F4-AC-92
DNS Servers . . . . . : 192.168.100.1
NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Bluetooth Network Connection:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Bluetooth Device (Personal Area Network)
Physical Address. . . . . : 7C-2A-31-47-09-81
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Ethernet adapter vEthernet (Default Switch):

Connection-specific DNS Suffix . :
Description . . . . . : Hyper-V Virtual Ethernet Adapter
Physical Address. . . . . : 00-15-5D-1F-76-A6
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::25a6:79fe:a5c3:dede332(Prefered)
IPv4 Address. . . . . : 172.24.160.1(Prefered)
Subnet Mask . . . . . : 255.255.240.0
Default Gateway . . . . . :
DHCPv6 IAID . . . . . : 536876381
DHCPv6 Client DUID. . . . . : 00-01-00-01-2C-7A-FD-C8-10-62-E5-F4-AC-92
DNS Servers . . . . . : fec0:0:0:ffff::1%1
                          fec0:0:0:ffff::2%1
                          fec0:0:0:ffff::3%1
NetBIOS over Tcpip. . . . . : Enabled
```

3) Display the host name of the computer.

Command: \_\_\_\_\_hostname\_\_\_\_\_

IP Address: \_\_\_\_\_DESKTOP-BNU761L\_\_\_\_\_

```
Command Prompt

Lease Obtained. . . . . : 24 January 2026 18:02:05
Lease Expires . . . . . : 26 January 2026 14:16:01
Default Gateway . . . . . : 192.168.100.1
DHCP Server . . . . . : 192.168.100.1
DHCPv6 IAID . . . . . : 125577777
DHCPv6 Client DUID. . . . . : 00-01-00-01-2C-7A-FD-C8-10-62-E5-F4-AC-92
DNS Servers . . . . . : 192.168.100.1
NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Bluetooth Network Connection:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Bluetooth Device (Personal Area Network)
Physical Address. . . . . : 7C-2A-31-47-09-81
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Ethernet adapter vEthernet (Default Switch):

Connection-specific DNS Suffix . :
Description . . . . . : Hyper-V Virtual Ethernet Adapter
Physical Address. . . . . : 00-15-5D-1F-76-A6
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::25a6:79fe:a5c3:dede332(Prefered)
IPv4 Address. . . . . : 172.24.160.1(Prefered)
Subnet Mask . . . . . : 255.255.240.0
Default Gateway . . . . . :
DHCPv6 IAID . . . . . : 536876381
DHCPv6 Client DUID. . . . . : 00-01-00-01-2C-7A-FD-C8-10-62-E5-F4-AC-92
DNS Servers . . . . . : fec0:0:0:ffff::1%1
                          fec0:0:0:ffff::2%1
                          fec0:0:0:ffff::3%1
NetBIOS over Tcpip. . . . . : Enabled

C:\Users\Hp Elitebook 840 G3>hostname
DESKTOP-BNU761L

C:\Users\Hp Elitebook 840 G3>ping google.com
```

4) Check for basic IP connectivity between two computers by name and IP address. How can basic IP connectivity be checked? What are the reasons why there is no connectivity?

Command: \_\_\_\_\_ping <IP address> and ping <hostname> \_\_\_\_\_

Reason: \_\_\_\_\_The reasons for no connectivity may include:

1. Host is not available on the network or does not exist
2. IP address is not correct

- ICMP (Internet Control Message Protocol) fails, or is blocked by a firewall.
- DNS (Domain Name System) server is unreachable or cannot resolve hostname
- The device is powered of \_\_\_\_\_

```

Select Command Prompt
C:\Users\Vhp Elitebook 840 G3>ping google.com

Pinging google.com [142.250.202.110] with 32 bytes of data:
Reply from 142.250.202.110: bytes=32 time=37ms TTL=114
Reply from 142.250.202.110: bytes=32 time=24ms TTL=114
Reply from 142.250.202.110: bytes=32 time=60ms TTL=114
Reply from 142.250.202.110: bytes=32 time=22ms TTL=114

Ping statistics for 142.250.202.110:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 22ms, Maximum = 60ms, Average = 35ms

C:\Users\Vhp Elitebook 840 G3>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Users\Vhp Elitebook 840 G3>ping 192.168.100.1

Pinging 192.168.100.1 with 32 bytes of data:
Reply from 192.168.100.1: bytes=32 time=2ms TTL=64
Reply from 192.168.100.1: bytes=32 time=6ms TTL=64
Reply from 192.168.100.1: bytes=32 time=2ms TTL=64
Reply from 192.168.100.1: bytes=32 time=8ms TTL=64

Ping statistics for 192.168.100.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 8ms, Average = 4ms

C:\Users\Vhp Elitebook 840 G3>ping PC-02
Ping request could not find host PC-02. Please check the name and try again.

C:\Users\Vhp Elitebook 840 G3>netstat -ano

```

- Find out which ports on your host are connected to applications. Connect the browser to some external web page before running the appropriate command.

Command: \_\_\_\_\_ netstat -ano \_\_\_\_\_

Reason: \_\_\_\_\_ netstat shows active network connections and -ano shows all connections, their address, and PID for each \_\_\_\_\_

```

Select Command Prompt
C:\Users\Vhp Elitebook 840 G3>netstat -ano

Active Connections

Proto Local Address Foreign Address State PID
TCP 0.0.0.0:135 0.0.0.0:0 LISTENING 1068
TCP 0.0.0.0:445 0.0.0.0:0 LISTENING 4
TCP 0.0.0.0:1521 0.0.0.0:0 LISTENING 4680
TCP 0.0.0.0:2179 0.0.0.0:0 LISTENING 2664
TCP 0.0.0.0:5040 0.0.0.0:0 LISTENING 8456
TCP 0.0.0.0:7888 0.0.0.0:0 LISTENING 19216
TCP 0.0.0.0:8888 0.0.0.0:0 LISTENING 4680
TCP 0.0.0.0:8966 0.0.0.0:0 LISTENING 896
TCP 0.0.0.0:49665 0.0.0.0:0 LISTENING 732
TCP 0.0.0.0:49666 0.0.0.0:0 LISTENING 1856
TCP 0.0.0.0:49667 0.0.0.0:0 LISTENING 2084
TCP 0.0.0.0:49668 0.0.0.0:0 LISTENING 4844
TCP 0.0.0.0:49673 0.0.0.0:0 LISTENING 868
TCP 0.0.0.0:65182 0.0.0.0:0 LISTENING 4628
TCP 127.0.0.1:11434 0.0.0.0:0 LISTENING 6180
TCP 127.0.0.1:27817 0.0.0.0:0 LISTENING 4652
TCP 127.0.0.1:44950 0.0.0.0:0 LISTENING 14212
TCP 127.0.0.1:44960 0.0.0.0:0 LISTENING 14212
TCP 127.0.0.1:49670 0.0.0.0:0 LISTENING 4680
TCP 127.0.0.1:54556 0.0.0.0:0 LISTENING 2016
TCP 127.0.0.1:54708 0.0.0.0:0 LISTENING 16760
TCP 127.0.0.1:54717 127.0.0.1:54717 ESTABLISHED 16760
TCP 127.0.0.1:54717 127.0.0.1:54708 ESTABLISHED 14324
TCP 172.24.160.1:329 0.0.0.0:0 LISTENING 4
TCP 192.168.100.1:139 0.0.0.0:0 LISTENING 4
TCP 192.168.100.1:139 0.0.0.0:0 LISTENING 4
TCP 192.168.100.15:57048 52.123.168.140:443 ESTABLISHED 14354
TCP 192.168.100.15:57054 52.123.161.51:443 ESTABLISHED 7424
TCP 192.168.100.15:57063 4.213.25.240:443 ESTABLISHED 5892
TCP 192.168.100.15:60475 104.18.39.21:443 ESTABLISHED 14560
TCP 192.168.100.15:60500 74.125.133.188:5228 ESTABLISHED 14560
TCP 192.168.100.15:60581 74.125.133.188:5228 ESTABLISHED 14560
TCP 192.168.100.15:60584 172.188.155.25:443 ESTABLISHED 11700
TCP 192.168.100.15:60596 104.18.39.21:443 ESTABLISHED 14560
TCP 192.168.100.15:60601 4.213.25.240:443 ESTABLISHED 11700

```

```

Select Command Prompt
TCP 192.168.100.15:60602 151.101.142.172:80 ESTABLISHED 11700
TCP 192.168.100.15:60621 172.64.148.235:443 ESTABLISHED 14560
TCP 192.168.100.15:60633 52.2.68.254:443 ESTABLISHED 14324
TCP 192.168.100.15:60680 104.18.39.21:443 ESTABLISHED 11700
TCP 192.168.100.15:60683 172.64.146.98:443 TIME_WAIT 0
TCP 192.168.100.15:60686 52.2.68.254:443 ESTABLISHED 14324
TCP 192.168.100.15:60752 54.174.72.115:443 ESTABLISHED 17140
TCP 192.168.100.15:60753 54.174.72.115:443 ESTABLISHED 17140
TCP 192.168.100.15:60766 34.224.117.139:443 CLOSE_WAIT 17140
TCP 192.168.100.15:60762 34.224.117.139:443 CLOSE_WAIT 17140
TCP 192.168.100.15:60764 34.130.135.16:443 CLOSE_WAIT 14560
TCP 192.168.100.15:60769 142.151.37.131:443 ESTABLISHED 14560
TCP 192.168.100.15:60771 90.94.119.174:443 ESTABLISHED 17140
TCP 192.168.100.15:60772 3.173.21.63:443 ESTABLISHED 11700
TCP 192.168.100.15:60773 118.103.237.9:443 ESTABLISHED 18620
TCP 192.168.100.15:60774 173.194.195.94:443 ESTABLISHED 14560
TCP 192.168.100.15:60776 57.155.141.119:443 ESTABLISHED 5948
TCP 192.168.100.15:60777 57.144.149.32:443 ESTABLISHED 15588
TCP 192.168.100.15:63792 92.123.139.240:80 ESTABLISHED 10776
TCP 192.168.100.15:64115 2.16.158.78:443 CLOSE_WAIT 10776
TCP 192.168.100.15:64116 46.99.70.178:443 ESTABLISHED 10776
TCP 192.168.100.15:64117 46.99.70.178:443 ESTABLISHED 10776
TCP 192.168.100.15:64123 159.171.109.103:443 CLOSE_WAIT 10776
TCP 192.168.100.15:64448 185.199.109.133:443 ESTABLISHED 2016
TCP [::]:3335 [::]:0 LISTENING 1068
TCP [::]:445 [::]:0 LISTENING 4
TCP [::]:1521 [::]:0 LISTENING 4680
TCP [::]:2179 [::]:0 LISTENING 2664
TCP [::]:7680 [::]:0 LISTENING 19216
TCP [::]:8986 [::]:0 LISTENING 4680
TCP [::]:49664 [::]:0 LISTENING 896
TCP [::]:49665 [::]:0 LISTENING 732
TCP [::]:49666 [::]:0 LISTENING 1356
TCP [::]:49667 [::]:0 LISTENING 2904
TCP [::]:49668 [::]:0 LISTENING 4044
TCP [::]:49679 [::]:0 LISTENING 868
TCP [::]:493182 [::]:0 LISTENING 4628
TCP [::]:49669 [::]:0 LISTENING 4540
TCP [fe80::8613:9737:432c:2d26%6]:1521 [fe80::8613:9737:432c:2d26%6]:57193 ESTABLISHED 4680
TCP [fe80::8613:9737:432c:2d26%6]:57193 [fe80::8613:9737:432c:2d26%6]:1521 ESTABLISHED 4628
UDP 0.0.0.0:9153 ** 3512

```

```

Select Command Prompt
UDP 0.0.0.0:5950 ** 8456
UDP 0.0.0.0:5353 ** 11356
UDP 0.0.0.0:5353 ** 11356
UDP 0.0.0.0:5353 ** 11356
UDP 0.0.0.0:5353 ** 13264
UDP 0.0.0.0:5353 ** 14560
UDP 0.0.0.0:5353 ** 13264
UDP 0.0.0.0:5353 ** 14560
UDP 0.0.0.0:5353 ** 11700
UDP 0.0.0.0:5353 ** 11700
UDP 0.0.0.0:5353 ** 11700
UDP 0.0.0.0:5353 ** 13264
UDP 0.0.0.0:5353 ** 14560
UDP 0.0.0.0:5353 ** 11700
UDP 0.0.0.0:5353 ** 11700
UDP 0.0.0.0:5353 ** 11700
UDP 0.0.0.0:5353 ** 13264
UDP 0.0.0.0:5353 ** 13264
UDP 0.0.0.0:5353 ** 14560
UDP 0.0.0.0:5353 ** 14560
UDP 0.0.0.0:5353 ** 14560
UDP 0.0.0.0:5353 ** 3344
UDP 0.0.0.0:5353 ** 11356
UDP 0.0.0.0:5353 ** 11356
UDP 0.0.0.0:5353 ** 11356
UDP 0.0.0.0:5353 ** 13264
UDP 0.0.0.0:5353 ** 11356
UDP 0.0.0.0:5353 ** 3344
UDP 0.0.0.0:59074 ** 7424
UDP 0.0.0.0:51451 ** 14560
UDP 0.0.0.0:52278 ** 3512
UDP 0.0.0.0:52279 ** 3512
UDP 0.0.0.0:53837 ** 7424
UDP 0.0.0.0:54986 ** 14560
UDP 0.0.0.0:55685 ** 14560
UDP 0.0.0.0:55693 ** 14560
UDP 0.0.0.0:56381 ** 14560
UDP 0.0.0.0:56978 ** 14560
UDP 0.0.0.0:58214 ** 15508
UDP 0.0.0.0:63837 ** 14560
UDP 127.0.0.1:1900 ** 13264
UDP 127.0.0.1:53900 ** 13264

```

```

Select Command Prompt
UDP 127.0.0.1:53980 ** 13204
UDP 127.0.0.1:61515 ** 4520
UDP 172.24.160.1:67 ** 3512
UDP 172.24.160.1:68 ** 3512
UDP 172.24.160.1:137 ** 4
UDP 172.24.160.1:138 ** 4
UDP 172.24.160.1:1390 ** 13204
UDP 172.24.160.1:53981 ** 13204
UDP 192.168.56.1:137 ** 4
UDP 192.168.56.1:138 ** 4
UDP 192.168.56.1:1900 ** 13204
UDP 192.168.56.1:53978 ** 13204
UDP 192.168.100.15:137 ** 4
UDP 192.168.100.15:138 ** 4
UDP 192.168.100.15:1900 ** 13204
UDP 192.168.100.15:53979 ** 13204
UDP ([::])5353 ** 14560
UDP ([::])5353 ** 11356
UDP ([::])5353 ** 11356
UDP ([::])5353 ** 11356
UDP ([::])5353 ** 13264
UDP ([::])5353 ** 11700
UDP ([::])5353 ** 11700
UDP ([::])5353 ** 3344
UDP ([::])5353 ** 14560
UDP ([::])5353 ** 14560
UDP ([::])5353 ** 13264
UDP ([::])5353 ** 3344
UDP ([::])59074 ** 7424
UDP ([::])59280 ** 3512
UDP ([::])59387 ** 7424
UDP ([::])1200 ** 13204
UDP ([::])53976 ** 13204
UDP [fe80::25a6:79fe:a5c3:dede:k32]:1900 ** 13204
UDP [fe80::25a6:79fe:a5c3:dede:k32]:53977 ** 13204
UDP [fe80::8613:9737:43c2:2d2c:a6]:1900 ** 13204
UDP [fe80::8613:9737:43c2:2d2c:a6]:53974 ** 13204
UDP [fe80::bcaa:7d4c:6ca6:68b2:b3]:1900 ** 13204
UDP [fe80::bcaa:7d4c:6ca6:68b2:b3]:53975 ** 13204

```

6) Find the path of routers to www.google.com. What is its IP address? How many hops involved in the path?

Command: tracert www.google.com

Reason: IP: 142.250.202.4, 10 hops are involved in the path

```
Command Prompt
C:\Users\Hp Elitebook 840 G3>tracert www.google.com
Tracing route to www.google.com [142.250.202.4]
over a maximum of 30 hops:
  0  5 ms  2 ms  6 ms  192.168.100.1
  1  11 ms  9 ms  27 ms  100.73.0.1
  2  6 ms  6 ms  5 ms  static.connect.net.pk.249.120.221.in-addr.arpa [221.120.249.233]
  3  8 ms  18 ms  7 ms  kh177.pla.net.pk [202.125.137.100]
  4  6 ms  5 ms  6 ms  10.253.4.46
  5  * * * Request timed out.
  6  * * * Request timed out.
  7  32 ms  38 ms  26 ms  74.125.51.180
  8  * 49 ms 21 ms 209.85.241.201
  9  23 ms 23 ms 20 ms 100.170.236.209
 10 31 ms 20 ms 20 ms pmfjra-af-in-f4.1e100.net [142.250.202.4]
Trace complete.
C:\Users\Hp Elitebook 840 G3>
```

7) A ping to 192.168.0.2 works but a ping to the machine's name "blue machine" fails. What could be wrong?

Reason: \_\_\_\_\_

1. DNS is not working, or service is unavailable
2. The machine name (hostname) is not registered in DNS
3. Incorrect name
4. IP connectivity exists, but name resolution fails

\_\_\_\_\_

```
Command Prompt
C:\Users\Hp Elitebook 840 G3>ping 192.168.0.2
Pinging 192.168.0.2 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Users\Hp Elitebook 840 G3>
C:\Users\Hp Elitebook 840 G3>
C:\Users\Hp Elitebook 840 G3>
C:\Users\Hp Elitebook 840 G3>ping "blue machine"
Ping request could not find host blue machine. Please check the name and try again.

C:\Users\Hp Elitebook 840 G3>ping blue machine
Ping request could not find host blue. Please check the name and try again.

C:\Users\Hp Elitebook 840 G3>
```

8) Which type of cable will you use to connect in a normal home installation?

Answer: \_\_\_\_\_ For connectivity in a normal home installation, I think a straight-thru cable would be a better option as the installation of these cables is easier and simpler than crossover cable. Moreover, it also supports Auto-MDI/MDIX (automatically detects and adjusts transmit/receive pins) and can be used with modern devices without needing to identify the device type. \_\_\_\_\_

9) Can you connect a Switch to another Switch or a router to a PC using a straight-through cable? Explain your answer.

Answer: \_\_\_\_\_

Earlier crossover cables were needed in order to connect two similar devices like switch to switch, and straight through cables were not used for connecting similar devices. But now devices have auto-MDI/MDIX so devices automatically figure out how to send and receive signals.

So, straight through cables can be used for connecting a switch to another switch as well as a router to a PC.

For non auto-MDI/MDIX devices, straight through cables will connect a router to a PC but crossover cables will be required for connecting a Switch to another Switch.

\_\_\_\_\_

10) Write a brief report on your home network or any organizational network including topology, 1 page max).

Answer: \_\_\_\_\_

My home network will include a star topology, where many devices are connected to a router/central device. The router connects to the internet (ISP) through fiber.

Devices like laptops, mobile phones, PCs and tablets are connected using Wifi. The router assigns IP address automatically to all devices using DHCP (Dynamic Host Configuration Protocol) when it connects, and uses NAT (Network Address Translation) so multiple devices can share one public IP address on the internet.

This setup is easy to manage, cost-effective, and scalable, making it good for everyday activities like browsing, streaming, online classes, and gaming. \_\_\_\_\_