



National University of Computer and Emerging Sciences

Computer Networks Lab

“ Assignment 1 ”

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MARKS:

REMARKS:

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Task 1

i. Straight Through Cable

Straight through cables are type of cables which are primarily used for connecting unlike devices such as for connecting computer with hub or switch.

a. Pics

Here is the picture of straight through cable:



b. Tools and things required

The tools and things required for this task is given below:

1. Twisted pair cable (UTP)
2. Cutter (Crimping Tool)
3. Rj45 connecter

c. Procedure and Arrangement of wires

- ✓ We striped about 1 inch of the outer jacket from the end of the cable.

- ✓ We untwisted the pairs of wires and arranged them in the following order from left to right: white/orange, orange, white/green, blue, white/blue, green, white/brown, brown.
- ✓ We cut the wires to make them even and insert them into the RJ-45 connector in the same order as step 2.
- ✓ We used the crimping tool to crimp the connector onto the cable.
- ✓ We followed the same steps for the other side of the cable.

ii. Crossover Cable

Straight through cables are type of cables which are primarily used for connecting the devices of same type such as for connecting two computers.

a. Pic

Here are the pictures of straight through cable:



Figure 1 end-1



Figure 2 end-2

b. Tools and things required

The tools and things required for this task is given below:

1. Twisted pair cable (UTP)
2. Cutter (Crimping Tool)
3. Rj45 connecter

c. Arrangement of wires

- ✓ We striped about 1 inch of the outer jacket from the end of the cable.
- ✓ We untwisted the pairs of wires and arranged them in the following order from left to right: white/green, green, white/orange, blue, white/blue, orange, white/brown, brown.
- ✓ We cut the wires to make them even and insert them into the RJ-45 connector in the same order as step 2.
- ✓ We used the crimping tool to crimp the connector onto the cable.
- ✓ On the other side of the cable, we followed the order of straight through cable.

Task 2

i. Procedure for connection

Steps are explained below with the screenshots:

- ✓ Connect both devices with ethernet cable (crossover wire)
- ✓ Change the advanced network settings and set the sharing settings in “all networks” and “public networks” tabs as shown in picture.

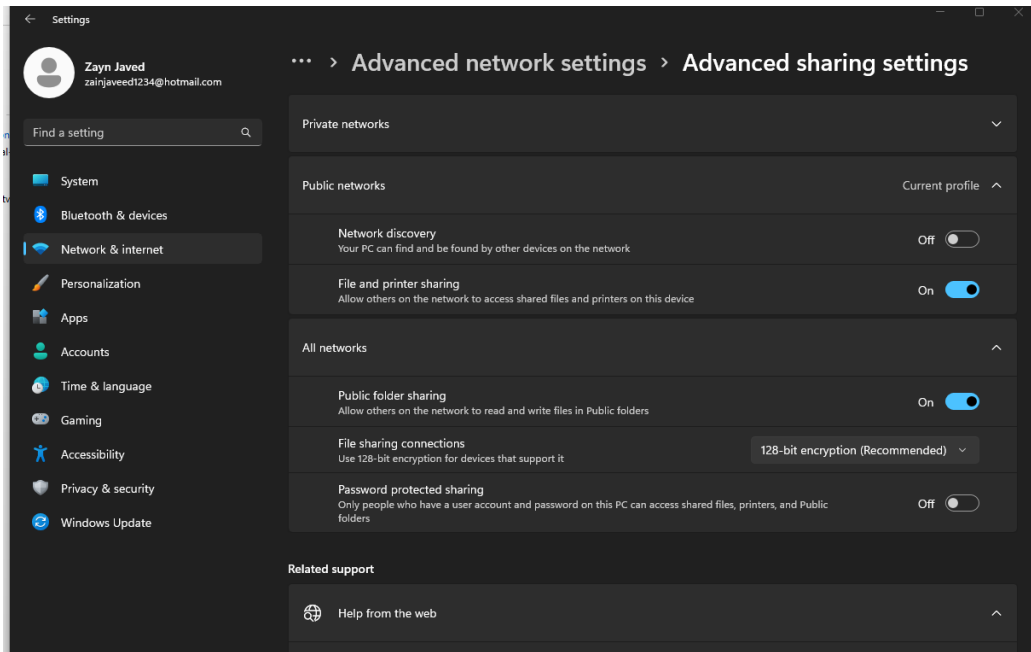


Figure 3 Device-1 setting of "all networks" tab

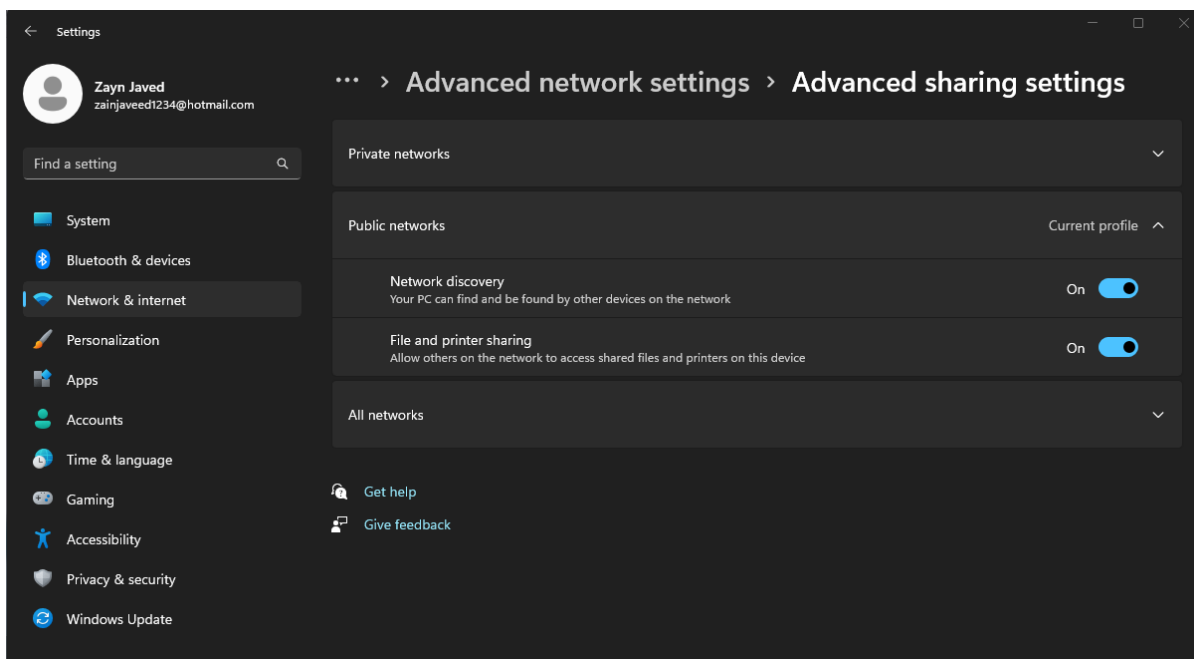


Figure 4 Device-1 setting of "Public networks" tab

- ✓ In the second step, set the IP address, gateway subnet mask on both devices which are being connected. This setting of IP addresses should be in such a way that the IP address of device-1 should be the gateway of device-2. Similarly, the IP address of device-2 should be the gateway of device-1. Moreover, set the prefer DNS server on both devices.

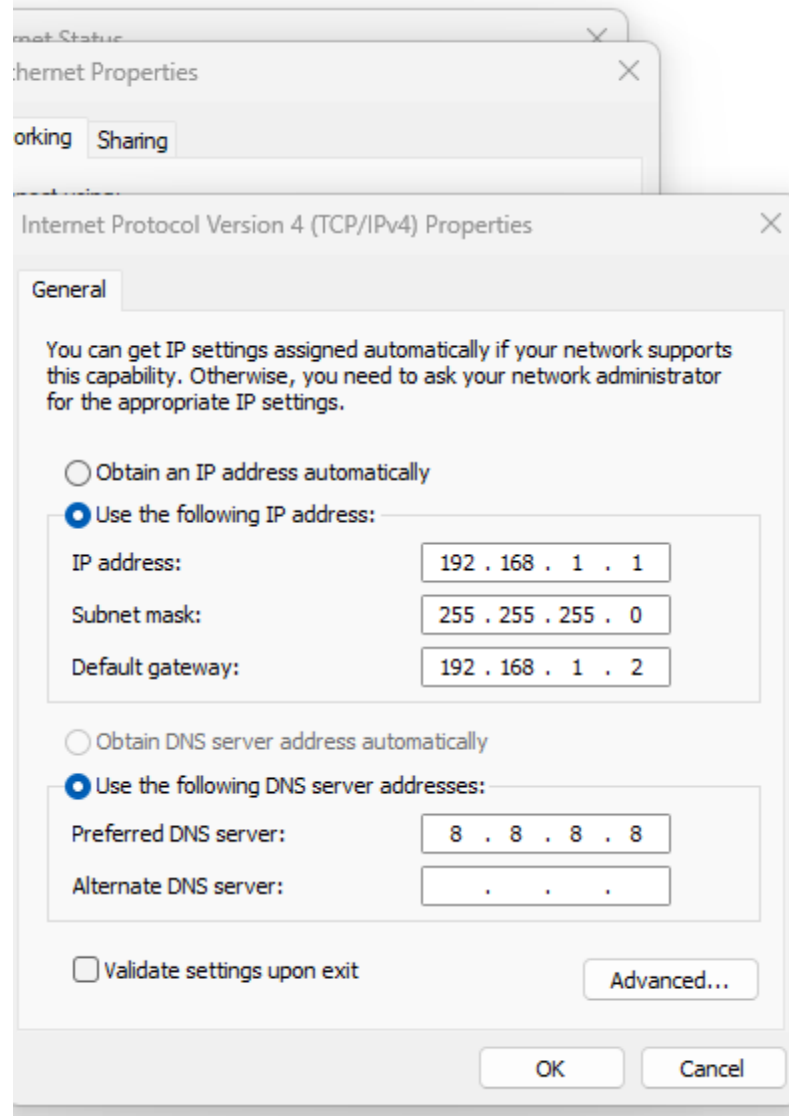


Figure 5 Device-1 IP configuration

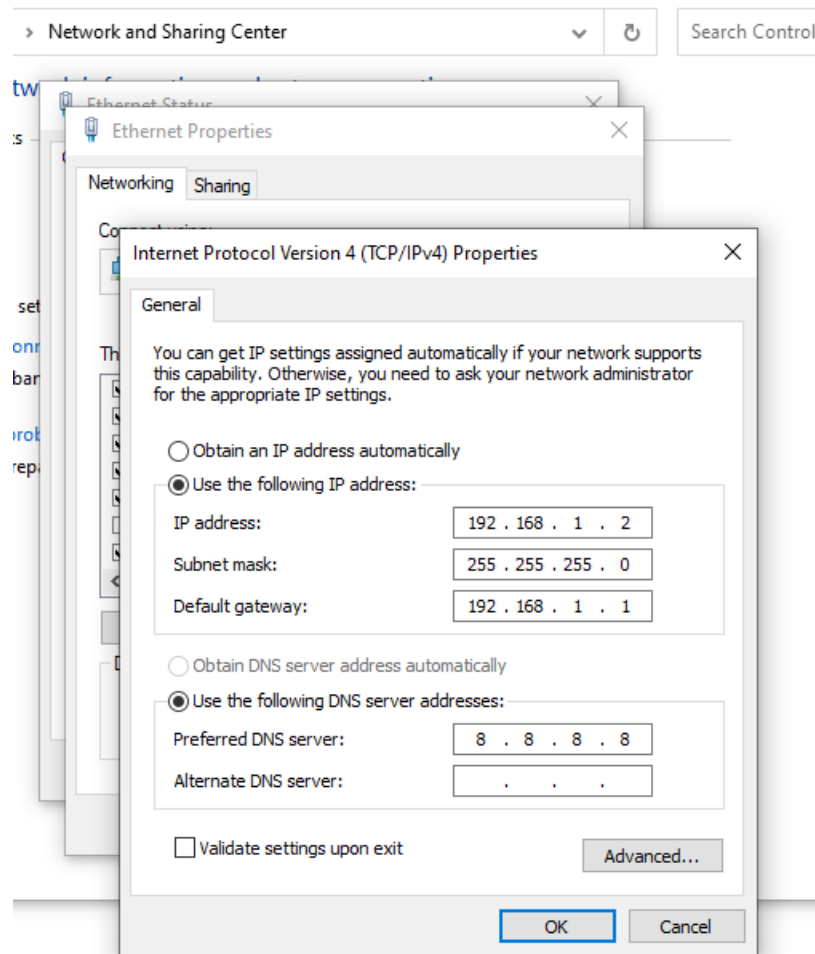
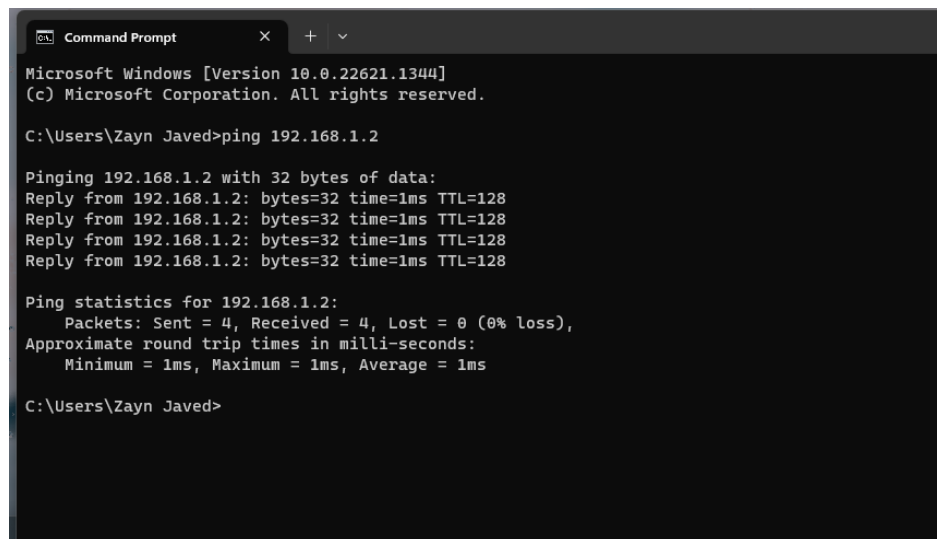


Figure 6 Device-2 IP Configuration

ii. Using Ping command

Use the ping command in the command prompt to check the connectivity. The ping command is shown in given picture.



```
Microsoft Windows [Version 10.0.22621.1344]
(c) Microsoft Corporation. All rights reserved.

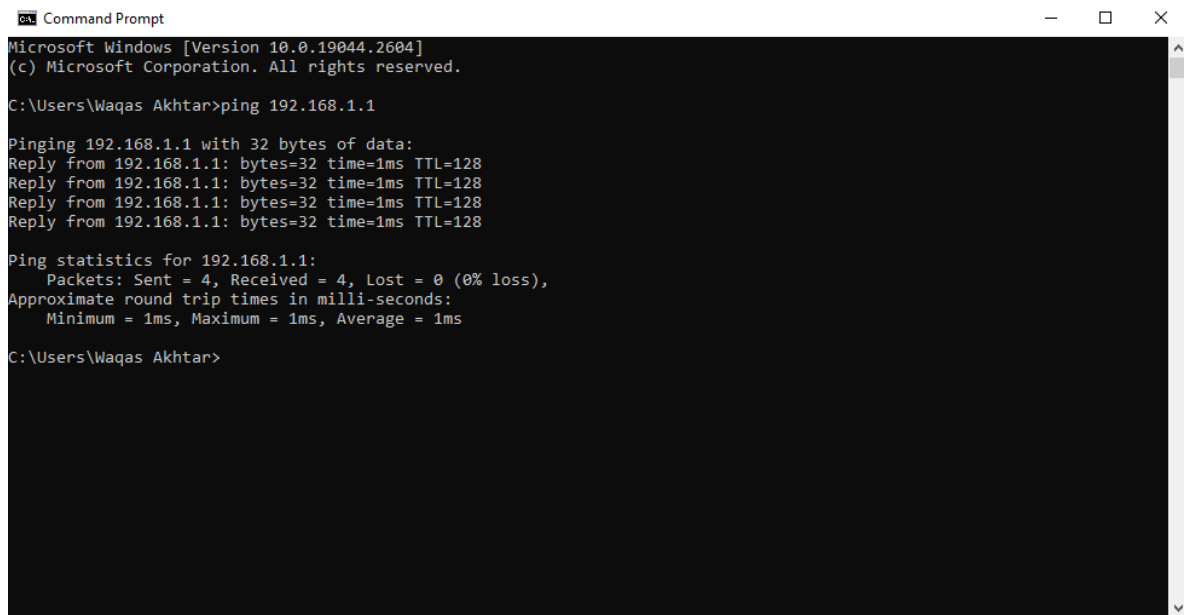
C:\Users\Zayn Javed>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:
Reply from 192.168.1.2: bytes=32 time=1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\Users\Zayn Javed>
```

Figure 7 Device-1 ping command



```
Microsoft Windows [Version 10.0.19044.2604]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Waqas Akhtar>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=1ms TTL=128
Reply from 192.168.1.1: bytes=32 time=1ms TTL=128
Reply from 192.168.1.1: bytes=32 time=1ms TTL=128
Reply from 192.168.1.1: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\Users\Waqas Akhtar>
```

Figure 8 Device-2 ping command

Task 3

Sharing of file (as sender, Device-1)

Device-1 has shared a folder of screenshot present in picture directory which can be seen in section (as receiver, device-2) for verification. Moreover, exact location can also be verified through screenshot.

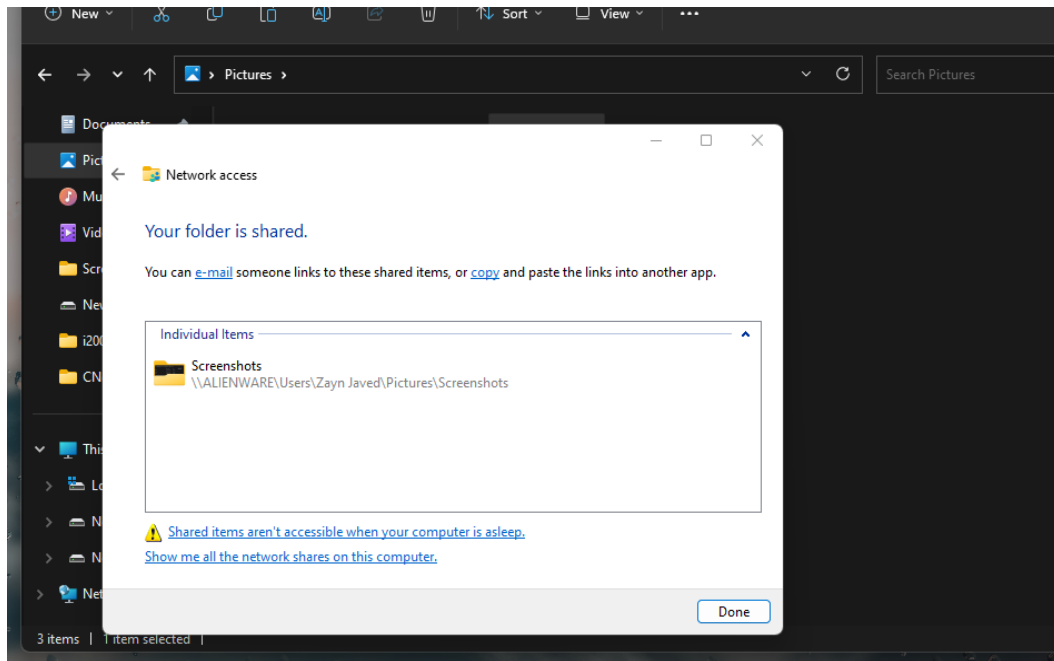


Figure 9 Device-1 as a sender

Sharing of file (as receiver, Device-1)

Device-1 has received a shared folder of lab 7 present of desktop of device-2 which can be seen in section (as receiver, device-2) for verification. Exact location (path) of folder shown in picture can also be seen in the picture.

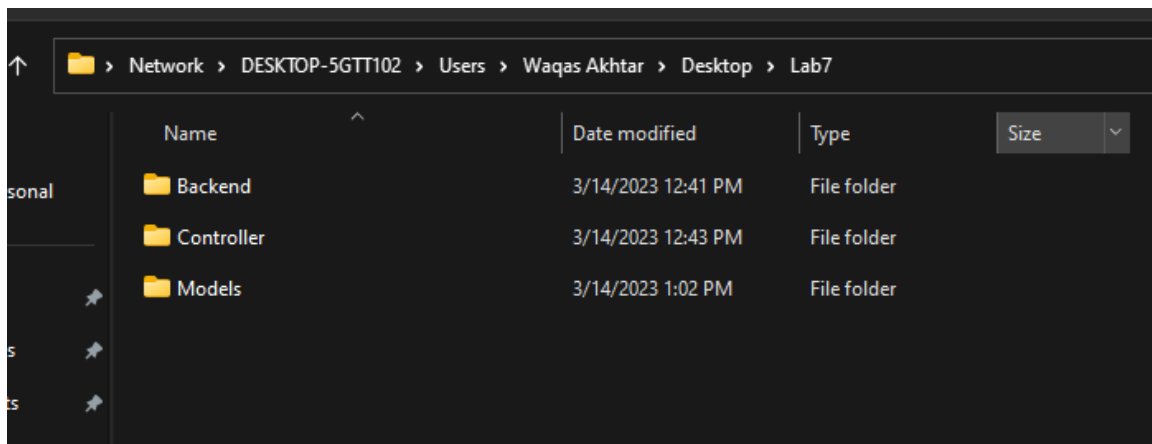


Figure 10 Device-1 as a receiver

Sharing of file (as sender, Device-2)

Device-2 has shared a folder of lab7 to device-1 present on desktop which can be seen in section (as receiver, device-1) for verification.

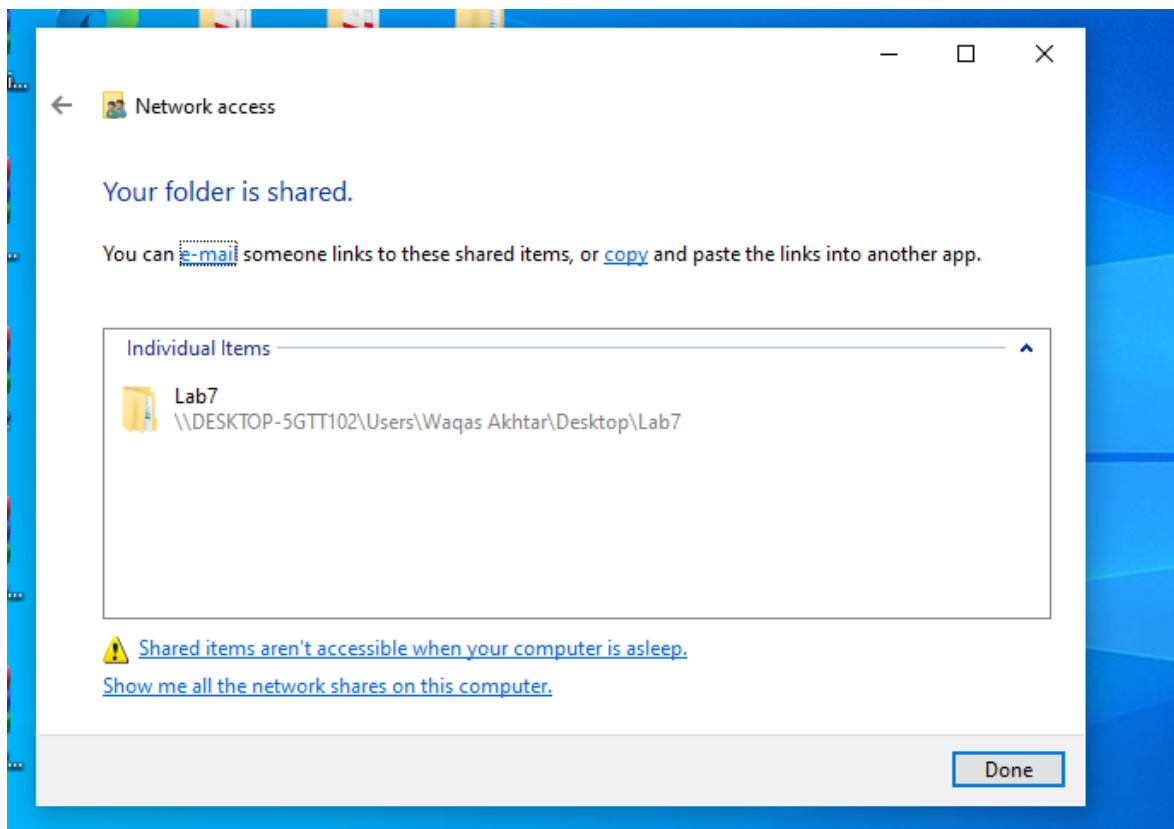
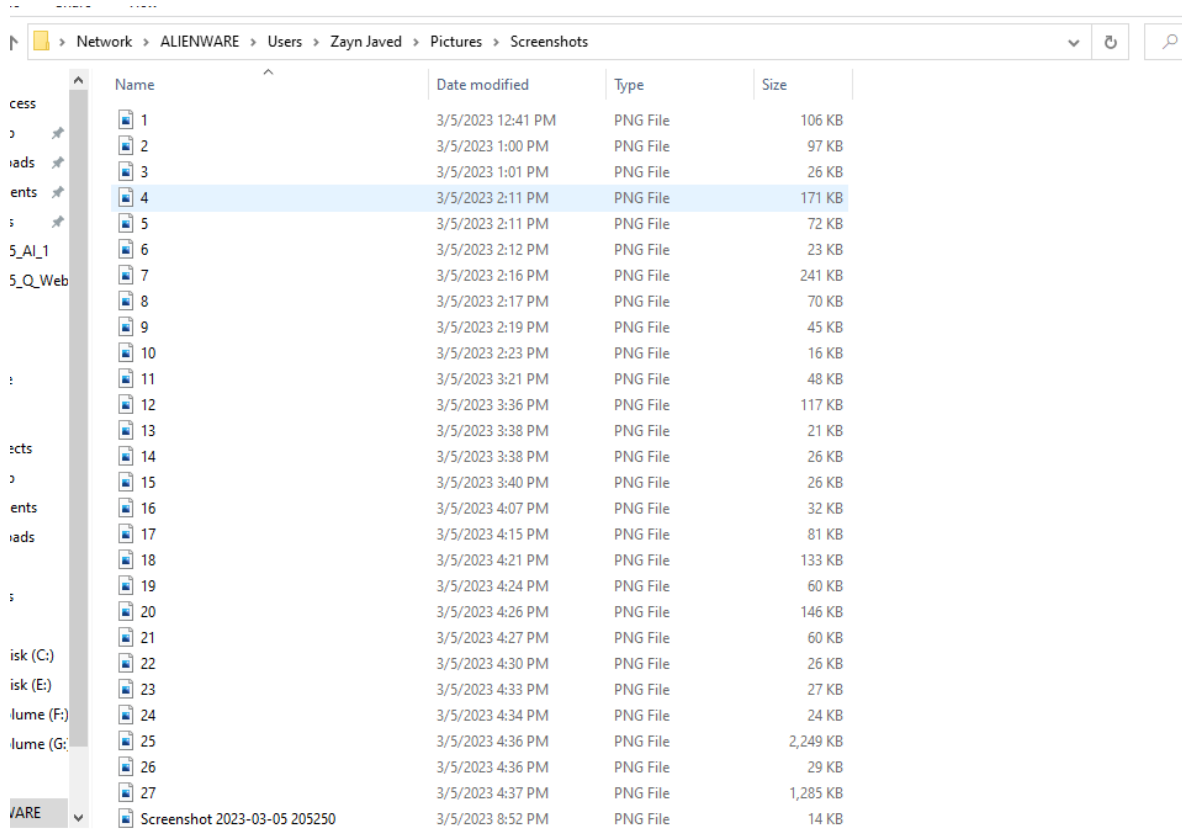


Figure 11 Device-2 as a sender

Sharing of file (as receiver, Device-2)

Device-2 has received a folder of screenshots present in device-1 which can be seen in section (as receiver, device-2) for verification. Exact location (path) of folder shown in picture can also been seen in the picture (in address bar).



Name	Date modified	Type	Size
1	3/5/2023 12:41 PM	PNG File	106 KB
2	3/5/2023 1:00 PM	PNG File	97 KB
3	3/5/2023 1:01 PM	PNG File	26 KB
4	3/5/2023 2:11 PM	PNG File	171 KB
5	3/5/2023 2:11 PM	PNG File	72 KB
6	3/5/2023 2:12 PM	PNG File	23 KB
7	3/5/2023 2:16 PM	PNG File	241 KB
8	3/5/2023 2:17 PM	PNG File	70 KB
9	3/5/2023 2:19 PM	PNG File	45 KB
10	3/5/2023 2:23 PM	PNG File	16 KB
11	3/5/2023 3:21 PM	PNG File	48 KB
12	3/5/2023 3:36 PM	PNG File	117 KB
13	3/5/2023 3:38 PM	PNG File	21 KB
14	3/5/2023 3:38 PM	PNG File	26 KB
15	3/5/2023 3:40 PM	PNG File	26 KB
16	3/5/2023 4:07 PM	PNG File	32 KB
17	3/5/2023 4:15 PM	PNG File	81 KB
18	3/5/2023 4:21 PM	PNG File	133 KB
19	3/5/2023 4:24 PM	PNG File	60 KB
20	3/5/2023 4:26 PM	PNG File	146 KB
21	3/5/2023 4:27 PM	PNG File	60 KB
22	3/5/2023 4:30 PM	PNG File	26 KB
23	3/5/2023 4:33 PM	PNG File	27 KB
24	3/5/2023 4:34 PM	PNG File	24 KB
25	3/5/2023 4:36 PM	PNG File	2,249 KB
26	3/5/2023 4:36 PM	PNG File	29 KB
27	3/5/2023 4:37 PM	PNG File	1,285 KB
Screenshot 2023-03-05 205250	3/5/2023 8:52 PM	PNG File	14 KB

Figure 12 Device-2 as a receiver