Lab 3: Identify networking cable standards. Create and test cross-over cables.

Experiment: Do the following cabling works in a network.

a. **Cable Crimping**
b. **Standard Cabling**
c. **Cross Cabling**
d. **Testing the crimped cable using tester**
e. **Share a file between two computers using Ethernet Cable**

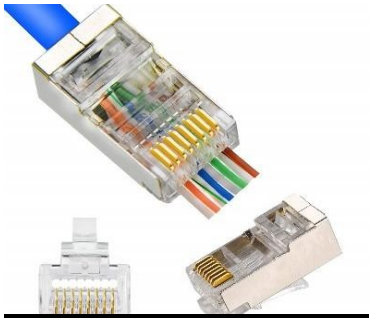
Objectives:

To do the following:

1. Cable Crimping
2. Standard Cabling
3. Cross Cabling
4. Testing the crimped cable using a cable tester
5. Share a file between two computers using the Ethernet cable

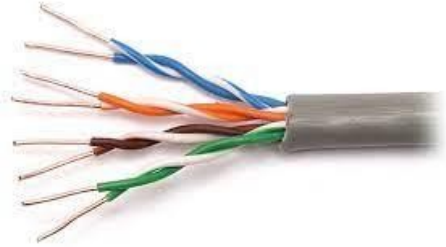
Apparatus/Tools/Equipment/Components:

RJ-45 connector,



Crimping Tool,

Twisted pair Cable,

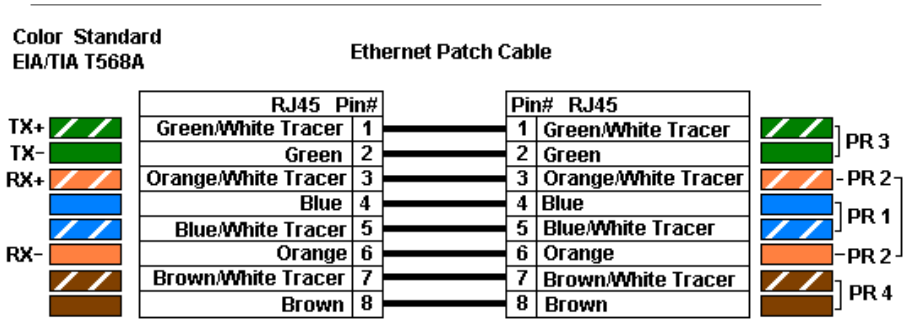


Cable Tester.

Principle:

Standard Cabling:

1. 10BaseT and 100BaseT are most common mode of LAN. You can use UTP category-6 cable for both modes.
2. A straight cable is used to connect a computer to a hub.



Cross Cabling:

A cross cable is used to connect 2 computers directly (with ONLY the UTP cable). It is also used then you connect 2 hubs with a normal port on both hubs.

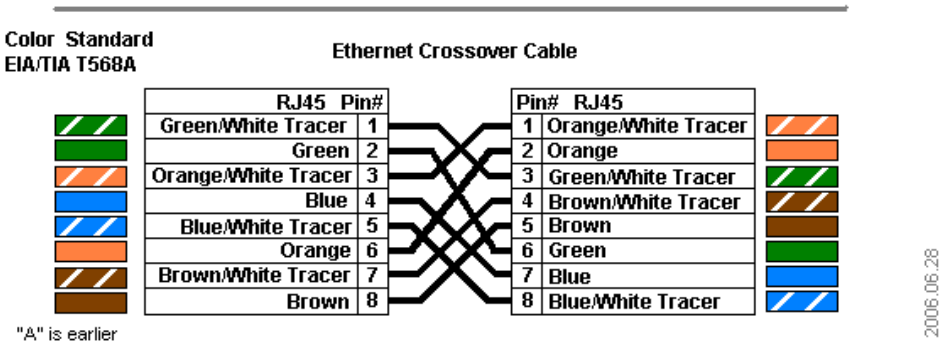
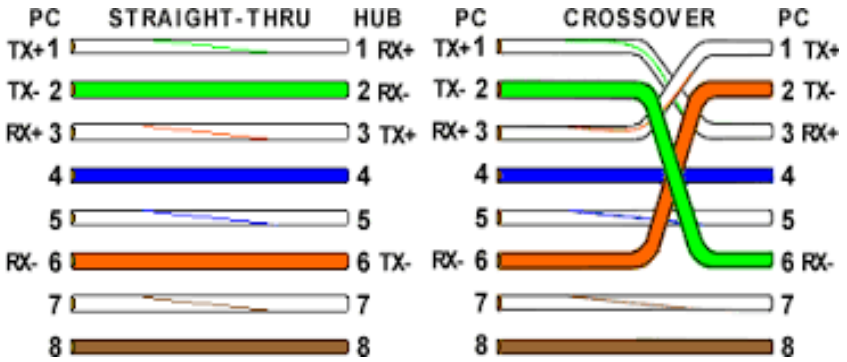


Figure 1 Cross Cabling

Procedure:

Cable Crimping steps:

1. Remove the outmost vinyl shield for 12mm at one end of the cable (we call this side A-side).
2. Arrange the metal wires in parallel
3. Make the other side of the cable (we call this side B-side) in the same way.
4. After you made it, you don't need to take care of the direction of the cable.



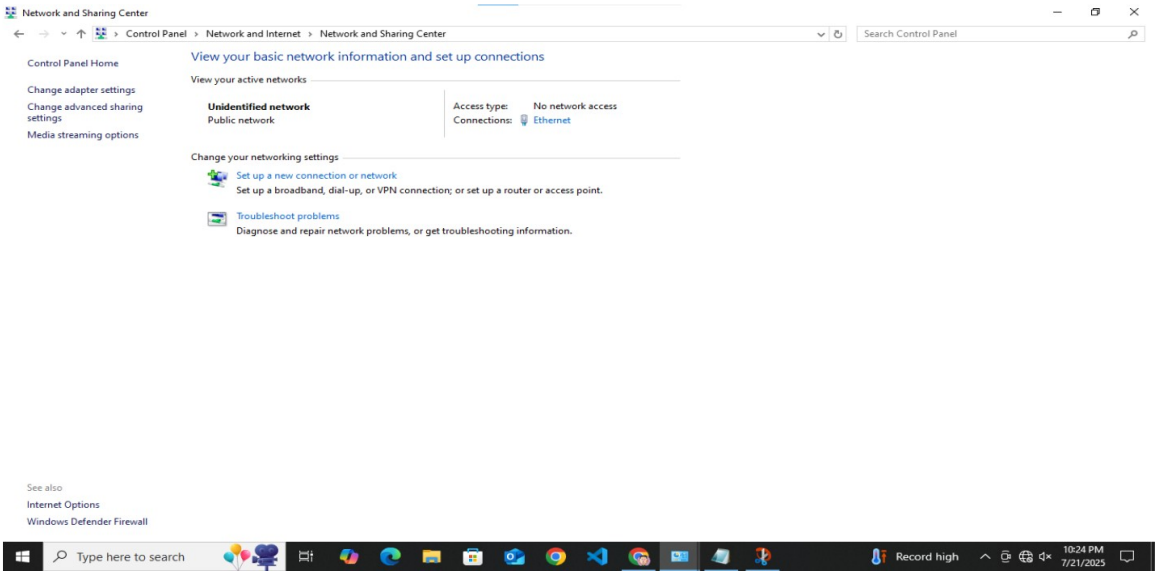
Testing the crimped cable using a cable tester:

1. Skin off the cable jacket 3.0 cm long cable stripper up to cable
2. Untwist each pair and straighten each wire 190 0 1.5 cm long.
3. Cut all the wires
4. Insert the wires into the RJ45 connector right white orange left brown the pins facing up.
5. Place the connector into a crimping tool, and squeeze hard so that the handle reaches its full swing.
6. Use a cable tester to test for proper continuity.

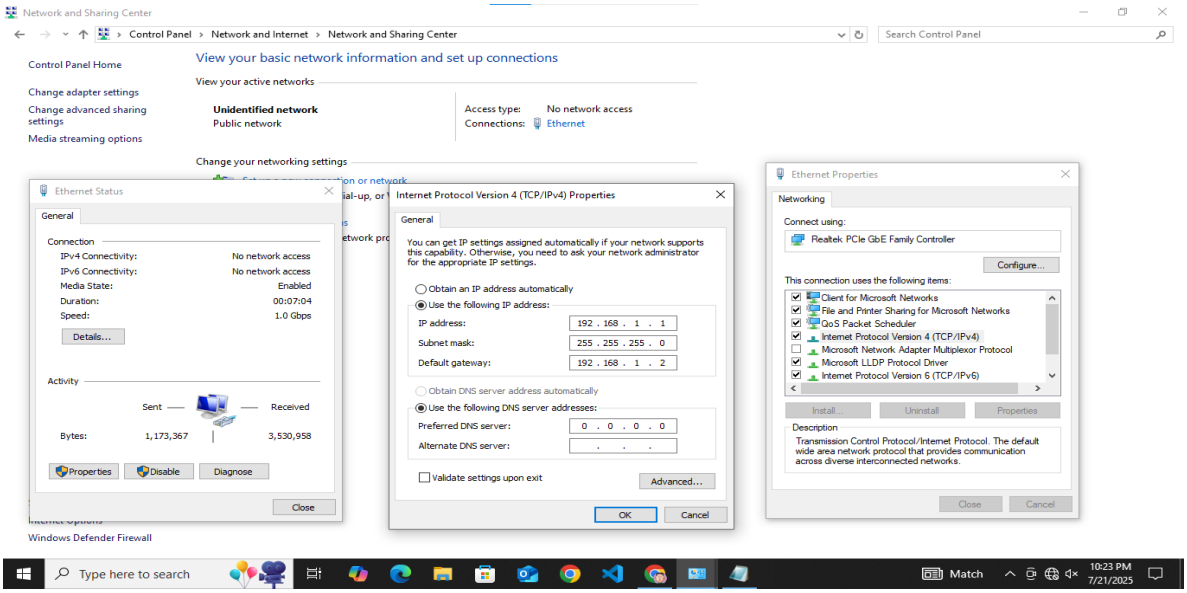
File sharing using Ethernet cable:

Step 1: Connect two PCs with the Ethernet cable.

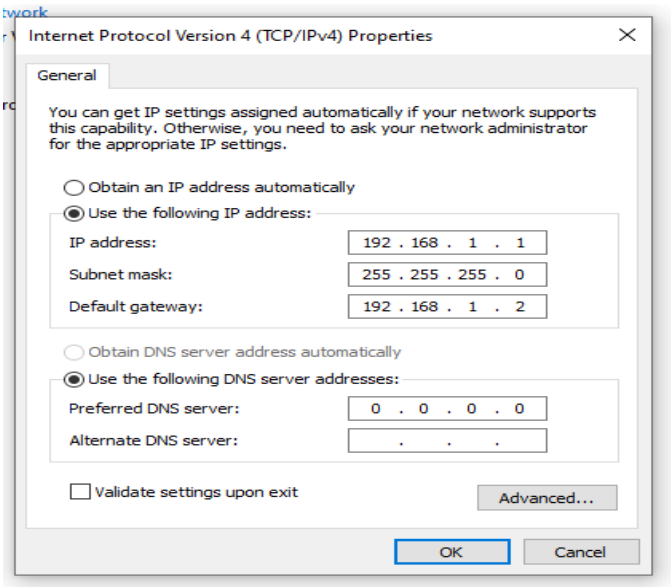
1. Right-click the Start button and choose "Control Panel > Network and Sharing Center". You will see the active network or Ethernet.



2. Click "Ethernet > Properties > Internet Protocol Version 4 (TCP/IPv4) > Properties".

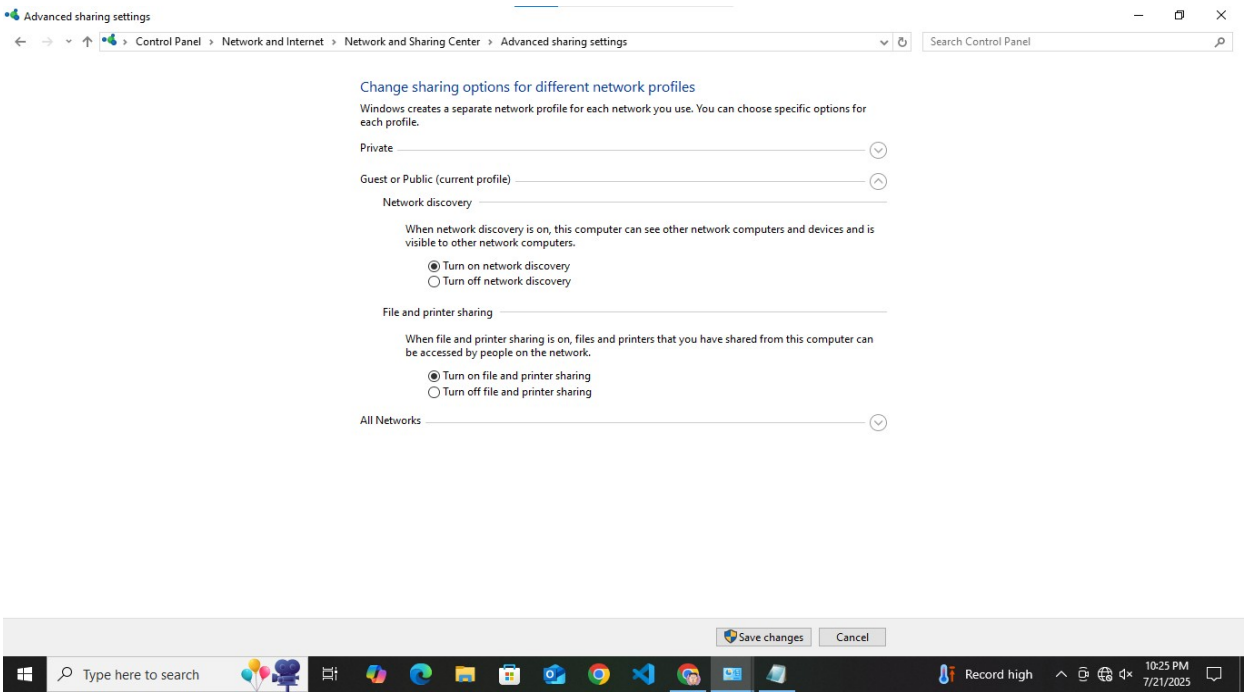


3. Select "Use the following IP address" and type the IP address and sub-net mask as ‘192.168.1.1 , 255.255.255.0’ for Source PC and ‘192.168.1.2’ for the target PC.

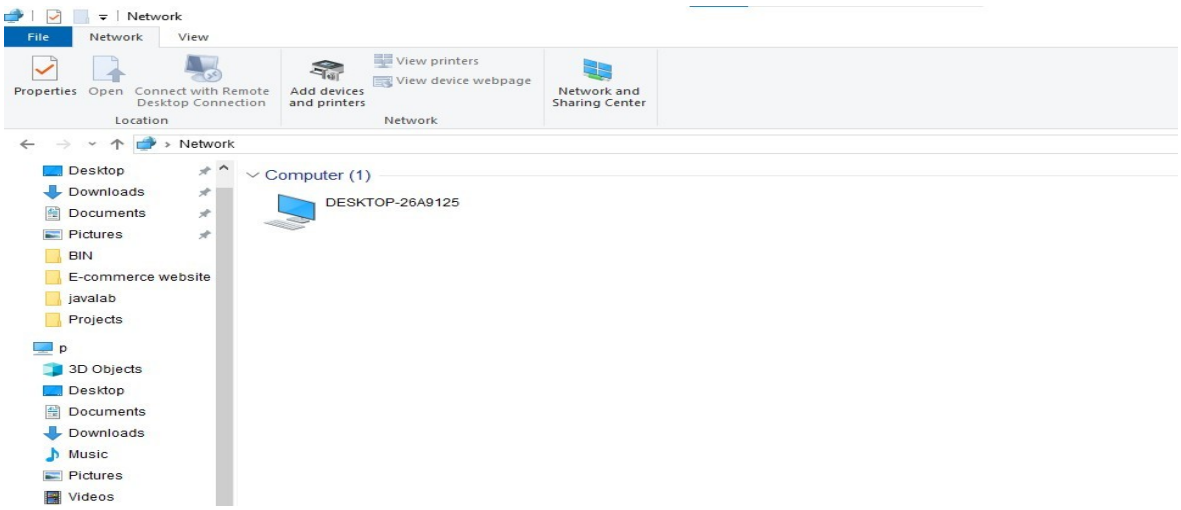


Step 2. Turn on the sharing option on both PCs.

1. Go to "Control Panel > Network and Internet > Network and Sharing Center > Change advanced sharing settings".

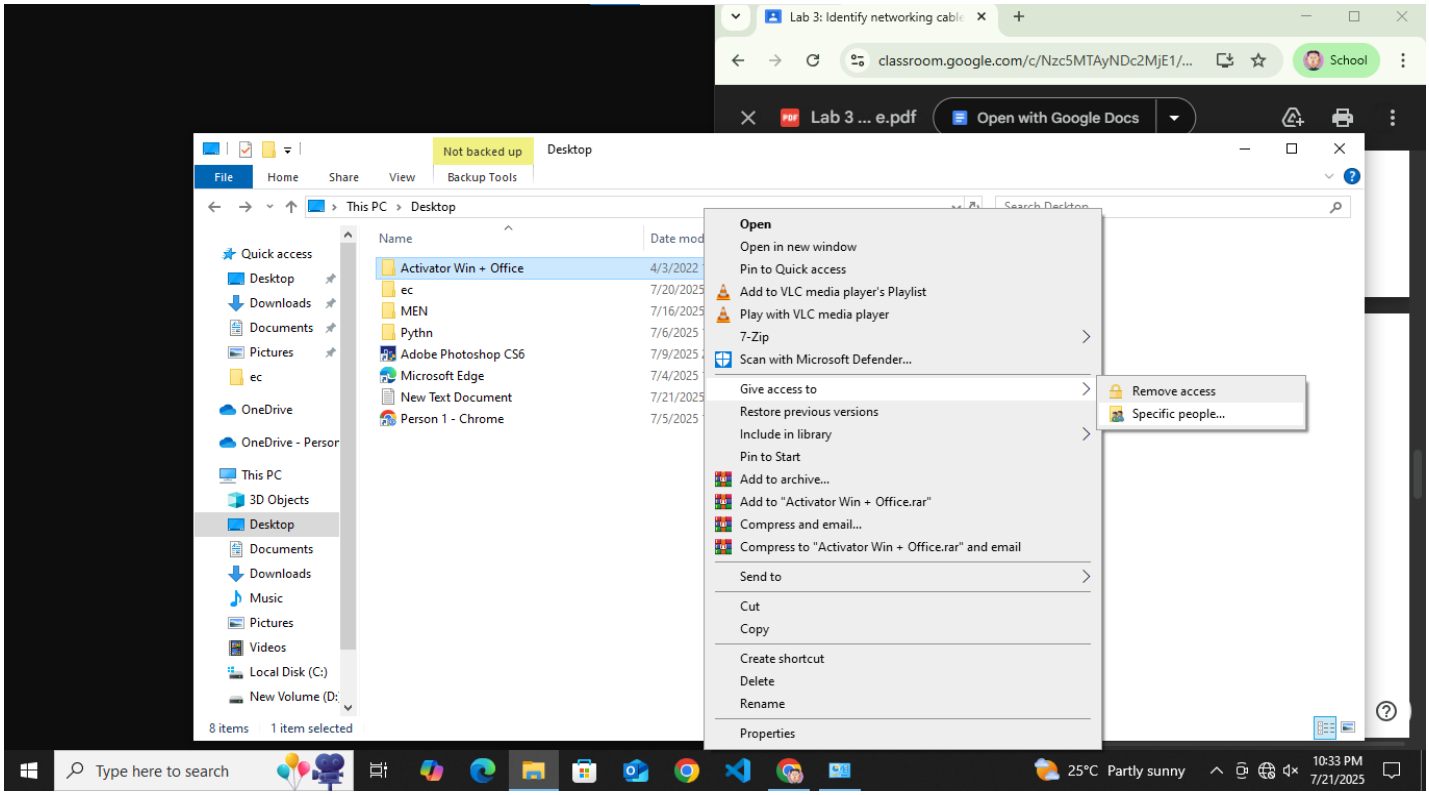


2. Choose these options and click "Save changes".
   Turn on network discovery.
   Turn on file and printer sharing.
   Turn on sharing so anyone with network access can read and write files in the public folders.



Step 3: Transfer files from one PC to another via Ethernet cable.

1. Select the file or folder you want to transfer, right-click it and click "Share with > specific people".


Lab 3: Identify networking cable
classroom.google.com/c/Nzc5MTAyNDc2MjE1/...
School
Lab 3 ... e.pdf
Open with Google Docs
Not backed up
Desktop
File
Home
Share
View
Backup Tools
This PC › Desktop
Search Desktop
Quick access
Desktop
Downloads
Documents
Pictures
ec
OneDrive
OneDrive - Persor
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
New Volume (D:
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ec 7/20/2025
MEN 7/16/2025
Pythn 7/6/2025
Adobe Photoshop CS6 7/9/2025
Microsoft Edge 7/4/2025
New Text Document 7/21/2025
Person 1 - Chrome 7/5/2025
8 items
1 item selected
Open
Open in new window
Pin to Quick access
Add to VLC media player's Playlist
Play with VLC media player
7-Zip
Scan with Microsoft Defender...
Give access to
Restore previous versions
Include in library
Pin to Start
Add to archive...
Add to "Activator Win + Office.rar"
Compress and email...
Compress to "Activator Win + Office.rar" and email
Send to
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25°C Partly sunny
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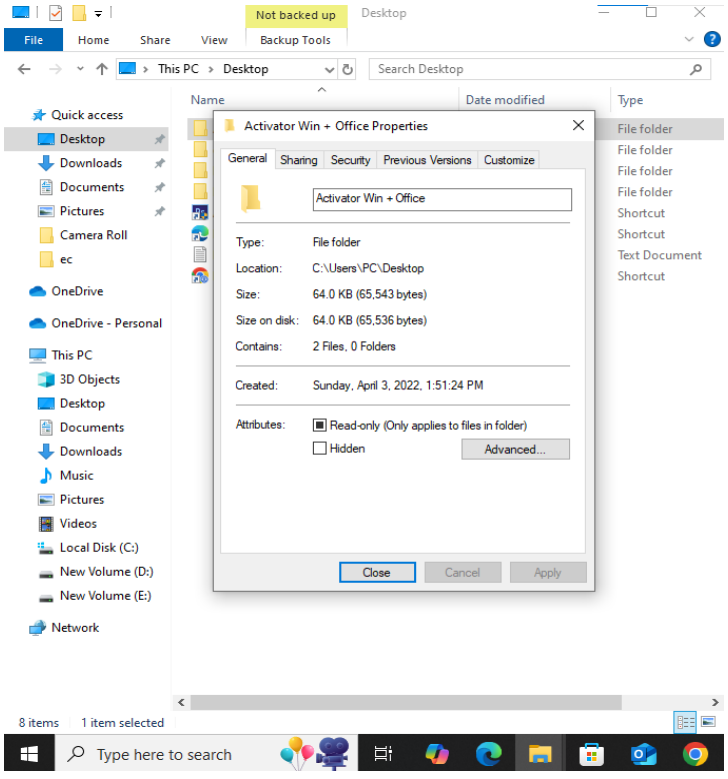
Not backed up
Desktop
File
Home
Share
View
Backup Tools
This PC › Desktop
Search Desktop
Quick access
Desktop
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Documents
Pictures
Camera Roll
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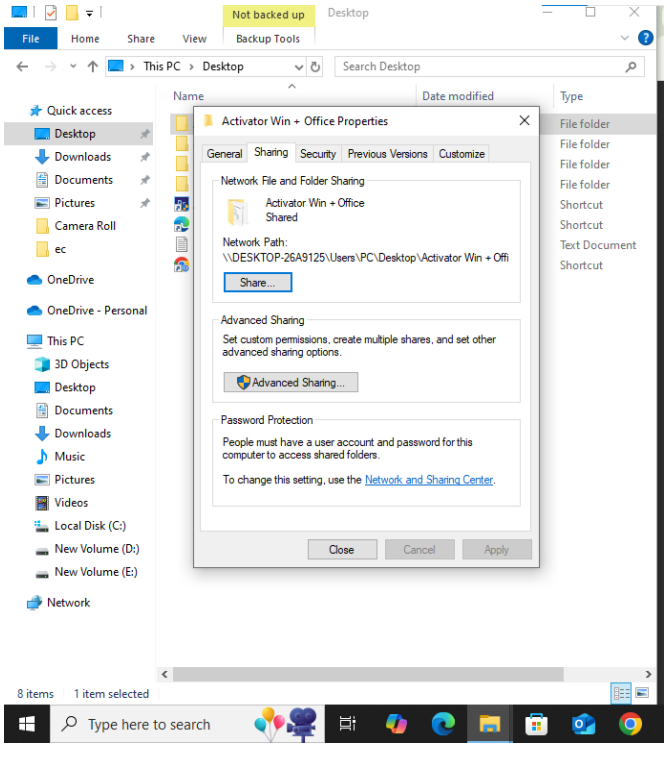
OneDrive
OneDrive - Personal
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
New Volume (D:)
New Volume (E:)
Network
Name
Date modified
Type
File folder
File folder
File folder
File folder
Shortcut
Shortcut
Text Document
Shortcut
Activator Win + Office Properties
General
Sharing
Security
Previous Versions
Customize
Activator Win + Office
Type: File folder
Location: C:\Users\PC\Desktop
Size: 64.0 KB (65,543 bytes)
Size on disk: 64.0 KB (65,536 bytes)
Contains: 2 Files, 0 Folders
Created: Sunday, April 3, 2022, 1:51:24 PM
Attributes: Read-only (Only applies to files in folder)
Hidden
Advanced...
Close
Cancel
Apply
8 items
1 item selected
Type here to search


Not backed up
Desktop
File
Home
Share
View
Backup Tools
This PC › Desktop
Search Desktop
Quick access
Desktop
Downloads
Documents
Pictures
Camera Roll
ec
OneDrive
OneDrive - Personal
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
New Volume (D:)
New Volume (E:)
Network
Name
Date modified
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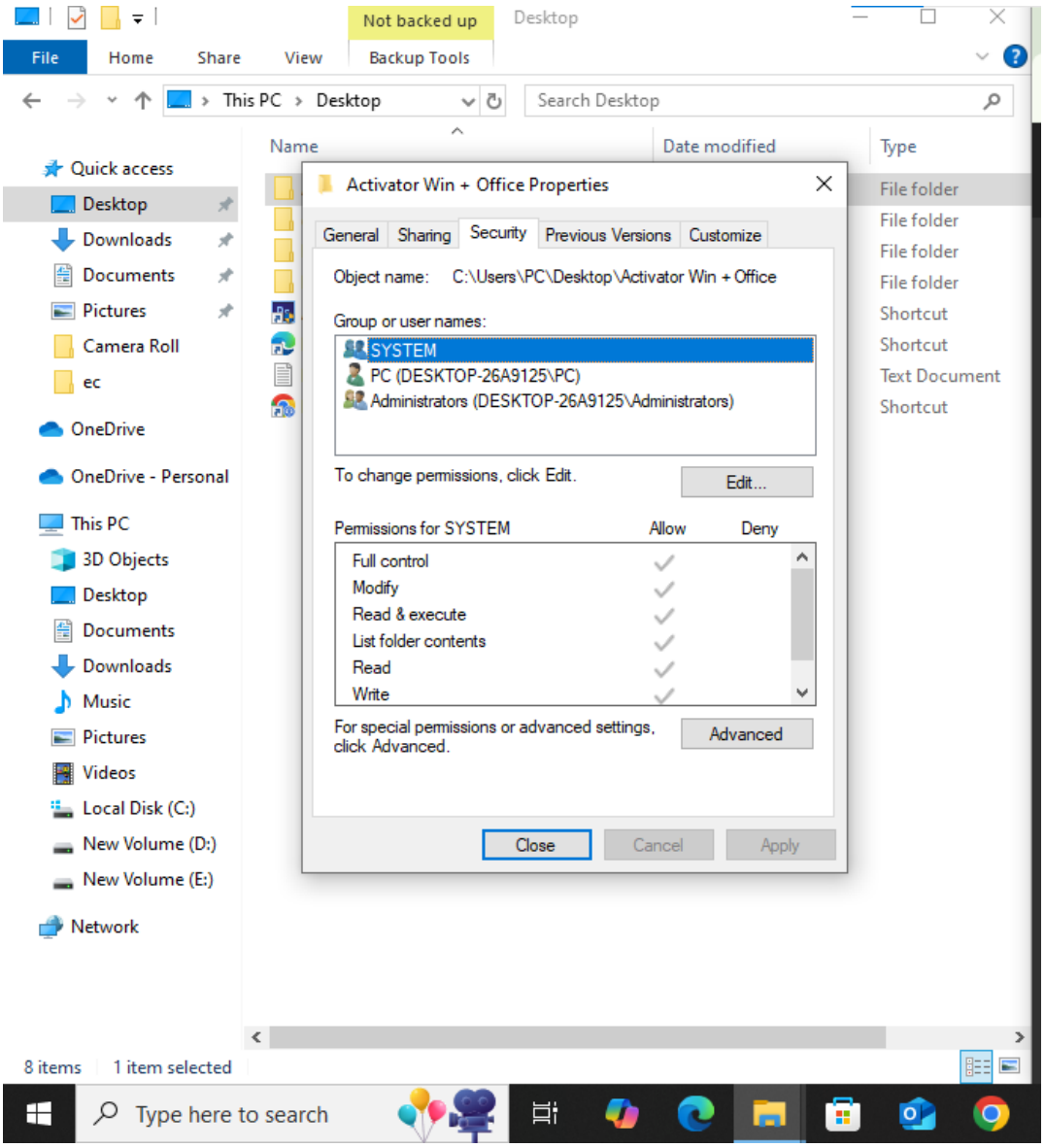
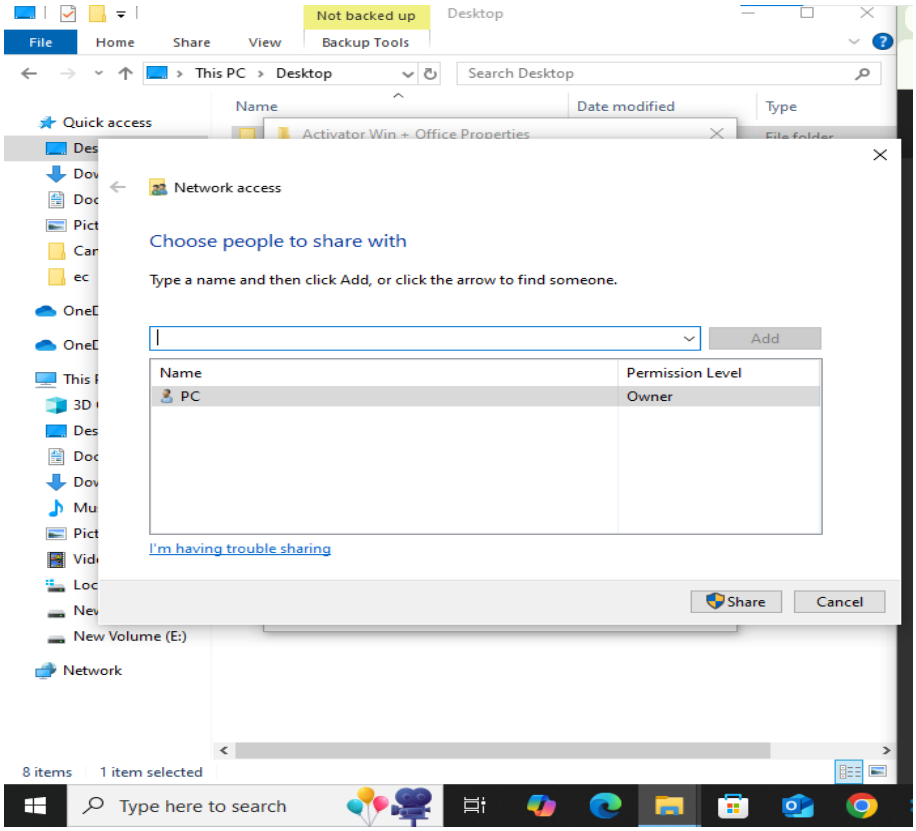
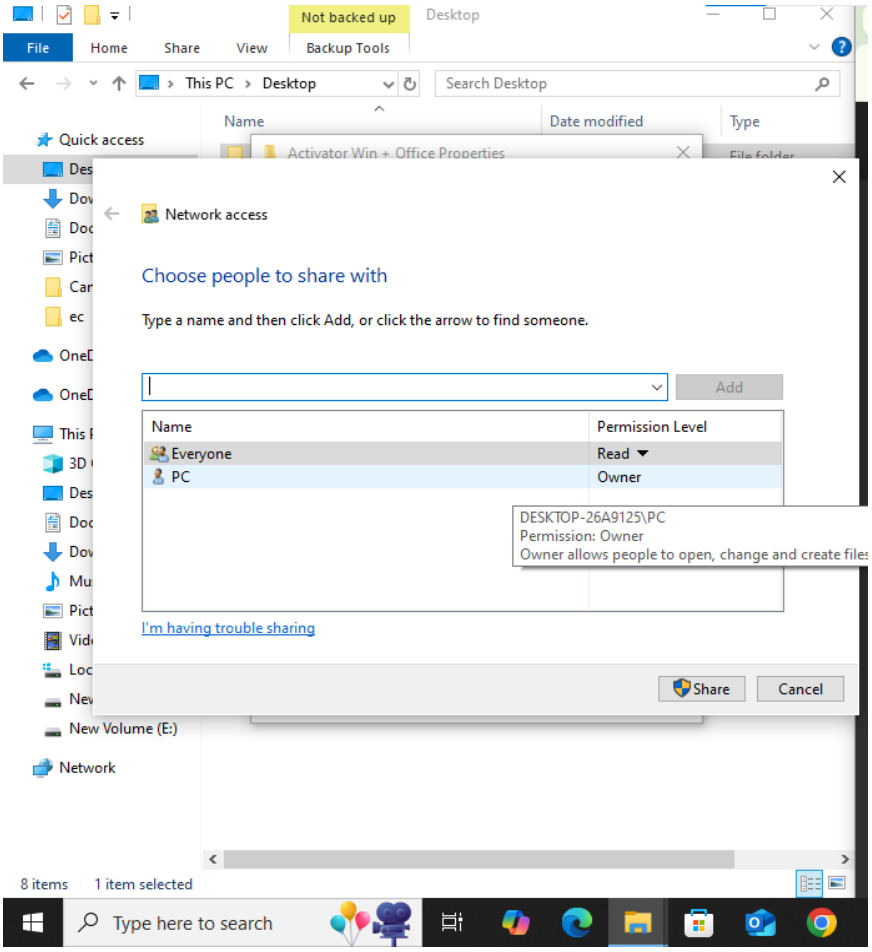
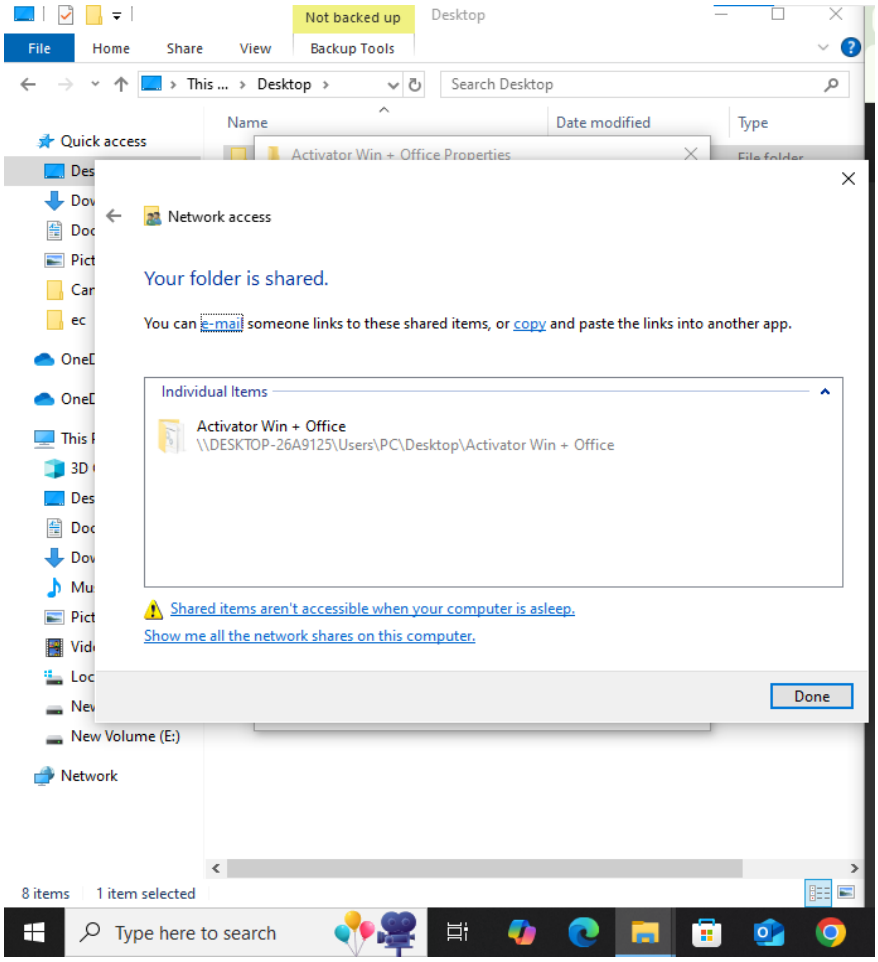
File folder
File folder
File folder
File folder
Shortcut
Shortcut
Text Document
Shortcut
Activator Win + Office Properties
General
Sharing
Security
Previous Versions
Customize
Network File and Folder Sharing
Activator Win + Office
Shared
Network Path:
\\DESKTOP-26A9125\Users\PC\Desktop\Activator Win + Offi
Share...
Advanced Sharing
Set custom permissions, create multiple shares, and set other advanced sharing options.
Advanced Sharing...
Password Protection
People must have a user account and password for this computer to access shared folders.
To change this setting, use the Network and Sharing Center.
Close
Cancel
Apply
8 items
1 item selected
Type here to search


Not backed up
Desktop
File
Home
Share
View
Backup Tools
This PC › Desktop
Search Desktop
Quick access
Desktop
Downloads
Documents
Pictures
Camera Roll
ec
OneDrive
OneDrive - Personal
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
New Volume (D:)
New Volume (E:)
Network
Name
Date modified
Type
File folder
File folder
File folder
File folder
Shortcut
Shortcut
Text Document
Shortcut
Activator Win + Office Properties
General
Sharing
Security
Previous Versions
Customize
Object name: C:\Users\PC\Desktop\Activator Win + Office
Group or user names:
SYSTEM
PC (DESKTOP-26A9125\PC)
Administrators (DESKTOP-26A9125\Administrators)
To change permissions, click Edit.
Edit...
Permissions for SYSTEM
Allow
Deny
Full control
Modify
Read & execute
List folder contents
Read
Write
For special permissions or advanced settings, click Advanced.
Advanced
Close
Cancel
Apply
8 items
1 item selected
Type here to search

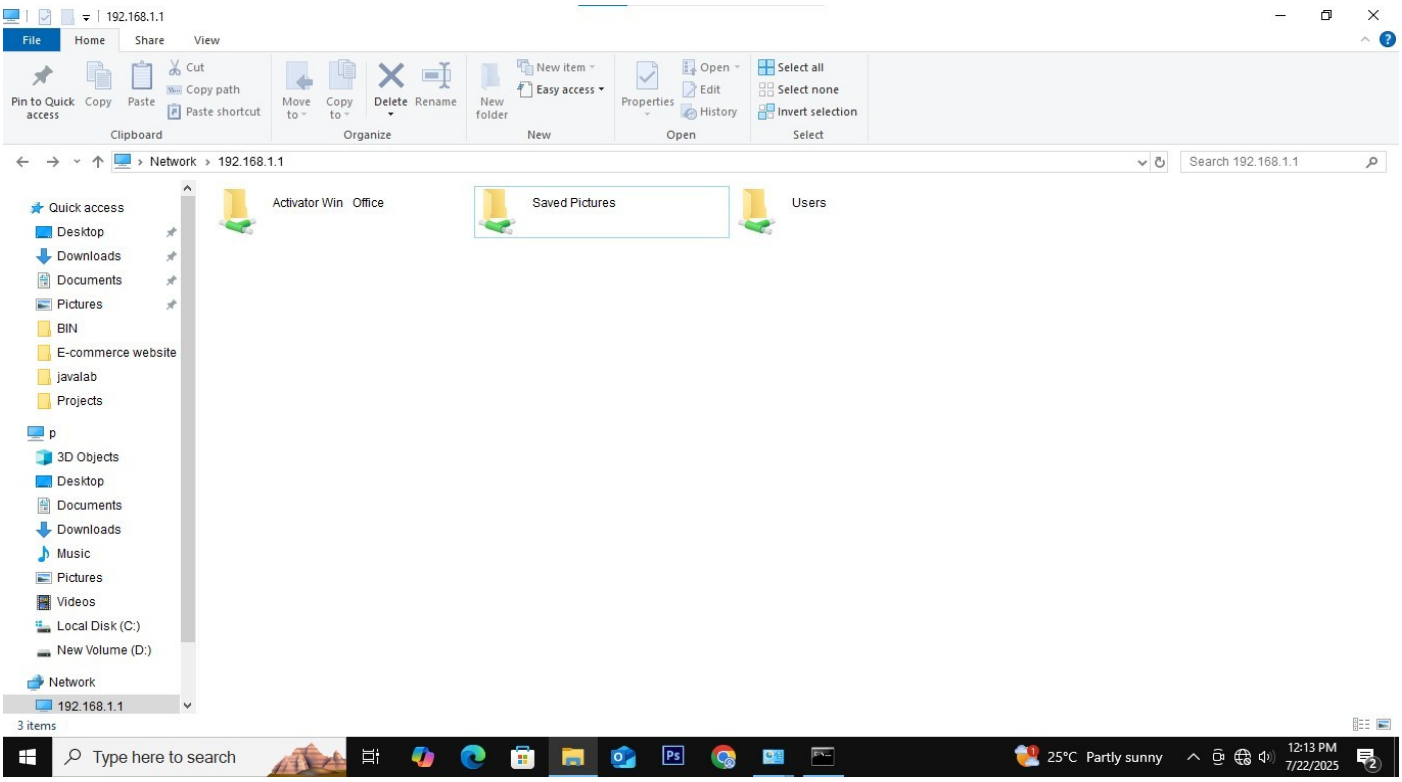
2. On the File Sharing window, click the drop-down menu and select "Everyone > Add > Share". Then, the file will be transferred from one PC to another. You can check the shared files on the target PC.

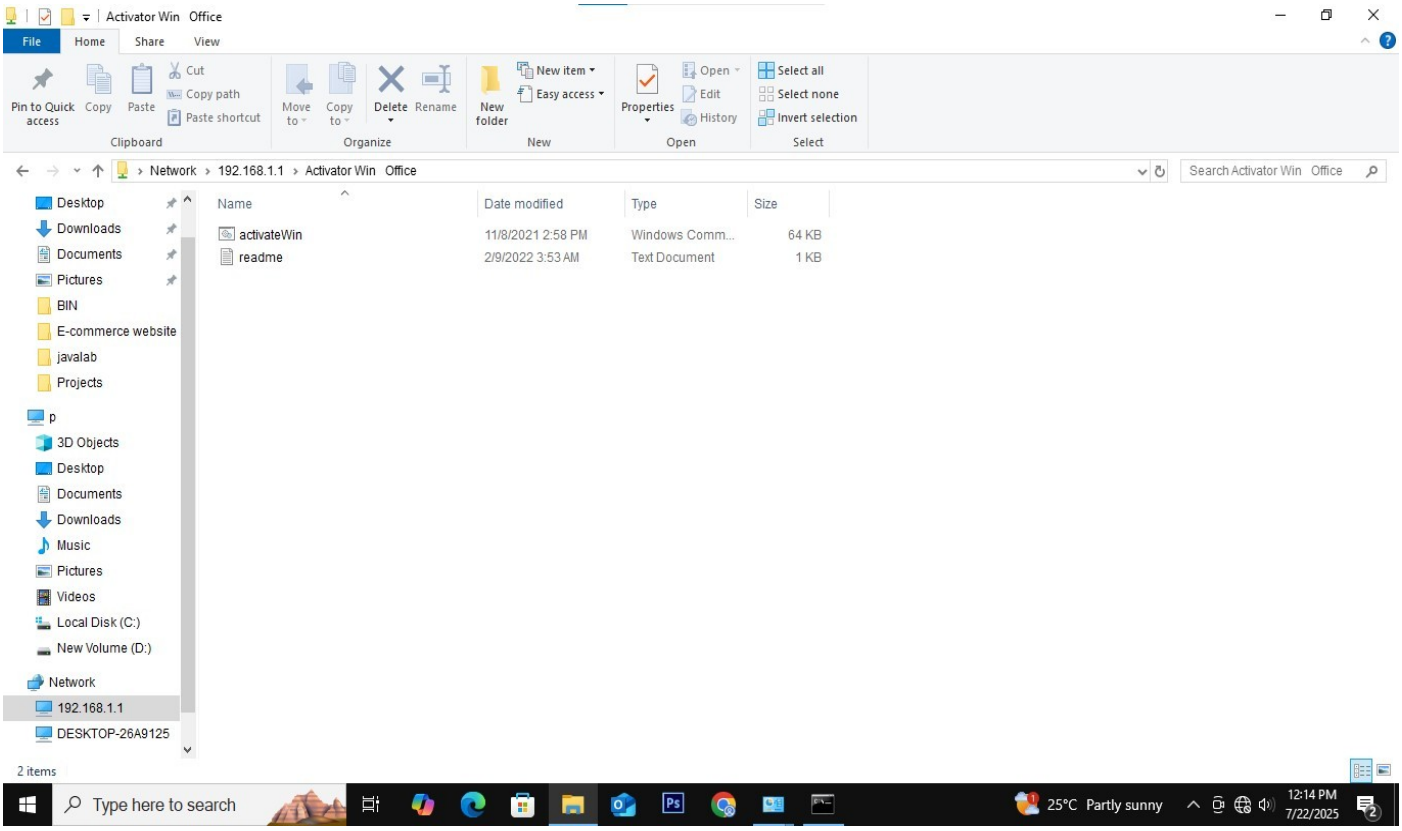






Target PC file:





Result:

Cable Crimping, Standard Cabling and Cross Cabling and testing the crimped cable using a cable tester and file sharing between two computers are done successfully.

Conclusion:

This is a well-structured lab manual focused on hands-on networking fundamentals. It guides users through building, testing, and using network cables. The theory and objectives are clear and practical, making it a solid foundation for beginners in networking.