Faculty of Computing



**[Computer Communications & Network]**

**Lab No 3 Tasks**

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**Task 1:** What is Ethernet cable? What type Ethernet cable is most commonly used in LAN network? 03

**Ethernet cable:**

An Ethernet cable is a common type of network cable used with wired networks. Ethernet cables connect devices such as PCs, routers, and switches within a local area network

**Most commonly used in LAN:**

The most commonly used Ethernet cable in LAN (Local Area Network) networks is Cat5e (Category 5e) or Cat6 (Category 6).

**Cat5e:** This cable supports speeds up to 1 Gbps (Gigabit Ethernet) and is sufficient for most standard LAN setups.

**Cat6:** This cable can handle speeds up to 10 Gbps, especially over shorter distances, and provides better performance with less crosstalk compared to Cat5e.

Both types use RJ45 connectors and are suitable for wired LAN networks in homes and offices.

**Task 2:** What is a LAN (local area network)? When and why to use LAN cable to sendfiles from one computer to another? 04

**LAN:**

A local area network (LAN) is a network infrastructure that interconnects computers and other devices within a limited physical area, such as a home, office building, school, or [data center](https://phoenixnap.com/glossary/what-is-a-data-center). The primary purpose of a LAN is to enable the sharing of resources, such as files, printers, and internet access, among multiple devices

**When to Use a LAN Cable:**

1. **Large File Transfers:**

If you need to transfer large files (gigabytes in size), a LAN cable offers a faster and more reliable connection compared to Wi-Fi.

1. **No Internet or Slow Network:**

When there is no internet connection, or the existing Wi-Fi network is slow or congested, a direct LAN connection ensures a stable and fast transfer.

1. **Local Network Setup:**

If both computers are on the same local network (e.g., in the same home or office), you can connect them directly via a LAN cable without needing an external network.

1. **Temporary Network:**

If you don’t want to set up a permanent network but need a temporary high-speed connection, a LAN cable is a quick solution.

**Why to Use a LAN Cable:**

**High Speed:**

LAN cables, especially Cat5e and Cat6, support high data transfer rates (up to 1 Gbps or more), which is ideal for transferring large amounts of data quickly.

**Security:**

A direct LAN connection is more secure than transferring files over the internet or Wi-Fi,

as it is a closed network that isn’t exposed to external threats

**Task 3: How Does LAN Work? What is meant by 127.0.0.1 and localhost? 03**

**How LAN Works:\***

**A LAN (Local Area Network) connects multiple devices within a limited area, like a home or office. Devices communicate through switches or routers using Ethernet cables or Wi-Fi. Data is sent in packets, directed to the correct device using IP addresses.**

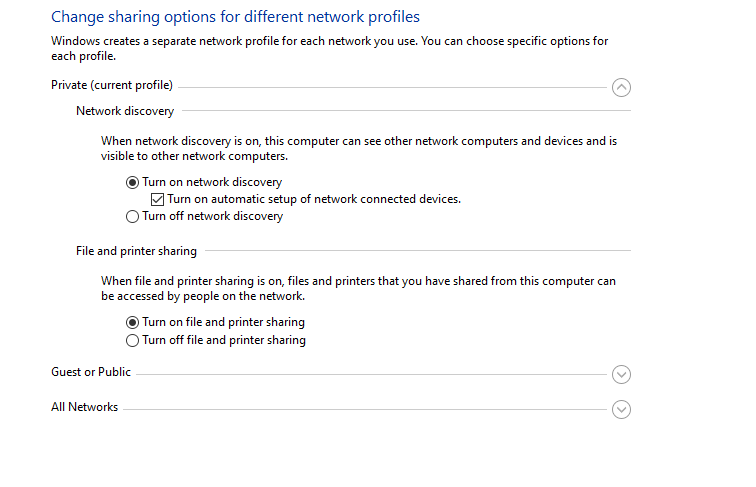
**127.0.0.1:**

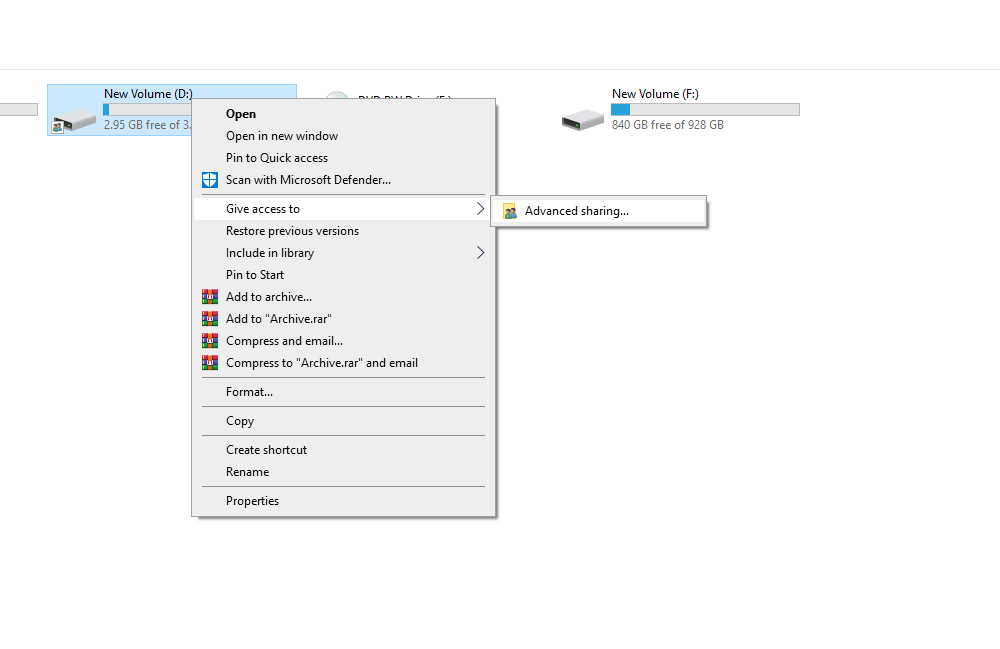
**A loopback IP address used to refer to the local machine. It’s mainly for testing network services on your own computer.**

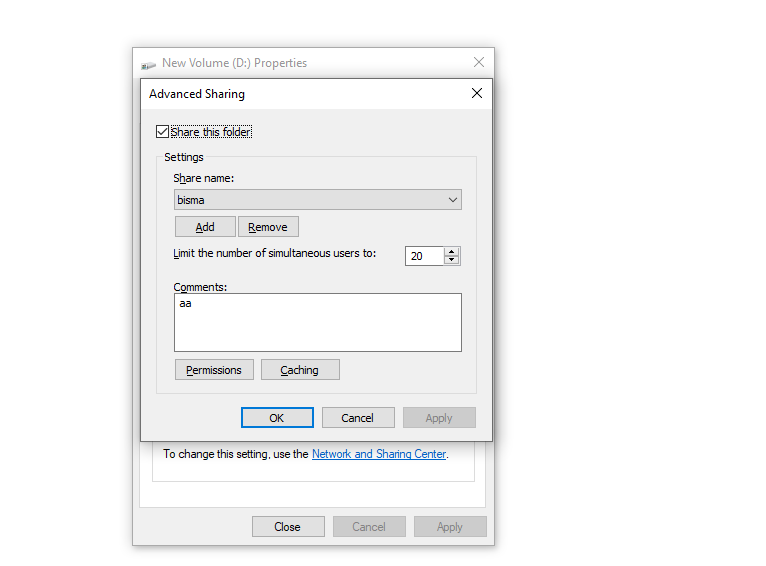
**Localhost:**

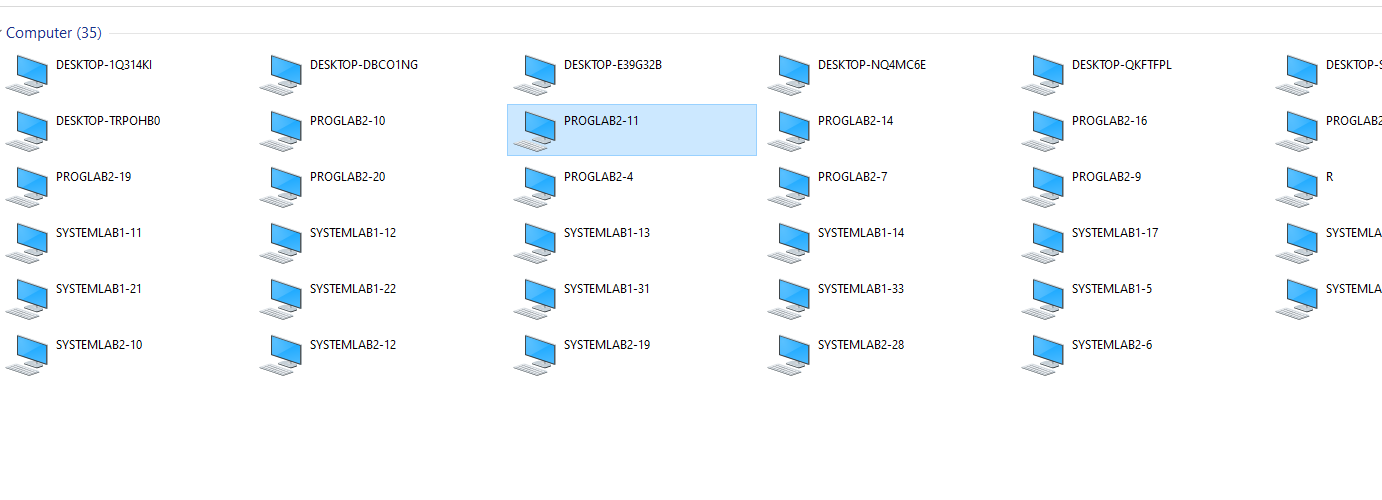
**A hostname that also refers to the local machine, often used interchangeably with 127.0.0.1 for accessing services running on the same device.**

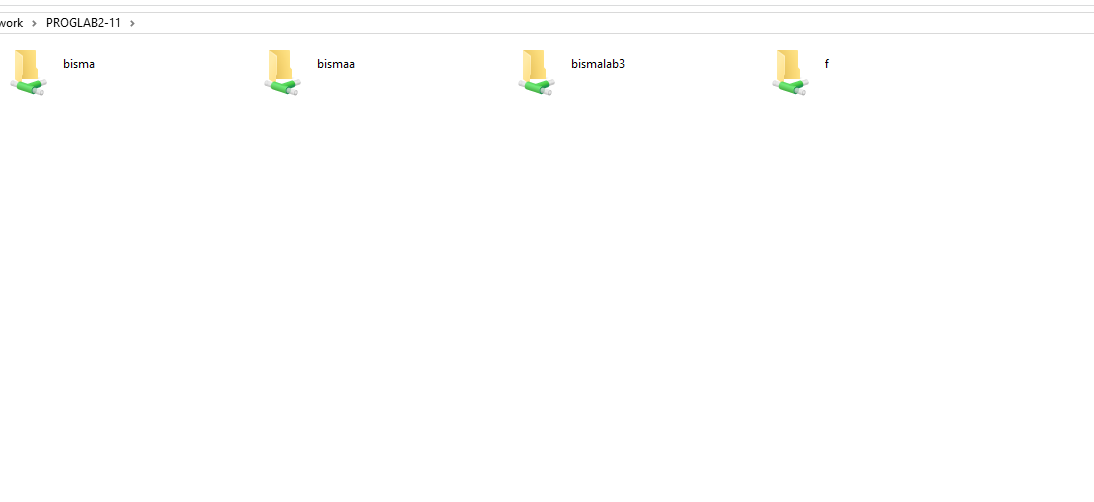
**Task 4: How two computers can share files through disk sharing. 5**

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