1. What is a characteristic of a SOHO network? (Small Office Home Office)

- It consists of multiple LANs with backbone infrastructure connections.

- It is a large network, such as those used by corporations and schools, with hundreds or thousands of interconnected hosts.

- It is a collection of interconnected private and public networks.

- It is a small network that connects a few computers to each other and to the internet.

2. What is the delay in the amount of time for data to travel between two points on a network?

- bandwidth

- throughput

- latency

- goodput

3. What type of network is defined by two computers that can both send and receive requests for resources?

- client/server

- peer-to-peer

- enterprise

- campus

4. What is a role of an intermediary device on a network?

- functions as the primary source of information for end devices

- determines the path and directs data along the way to its final destination

- runs applications that support collaboration for business

- forms the interface between the human network and the underlying communication network

Everything is online

"Hey Shad, are you online?" "Of course, I am!" How many of us still think about whether or not we are "online"? We expect our devices, cell phones, tablets, laptops and desktop computers to always be connected to the global internet. We use this network to interact with our friends, shop, share pictures and experiences, and learn. The internet has become such a part of everyday life that we almost take it for granted.

Normally, when people use the term internet, they are not referring to the physical connections in the real world. Rather, they tend to think of it as a formless collection of connections. It is the "place" people go to find or share information.

Who Owns the Internet

The internet is not owned by any individual or group. The internet is a worldwide collection of interconnected networks (internetwork or internet for short), cooperating with each other to exchange information using common standards. Through telephone wires, fiber-optic cables, wireless transmissions, and satellite links, internet users can exchange information in a variety of forms, as shown in the figure.

Everything that you access online is located somewhere on the global internet. Social media sites, multiplayer games, messaging centers that provide email, online courses — all of these internet destinations are connected to local networks that send and receive information through the internet.

Think about all of the interactions that you have during the day which require you to be online.

The figure shows a map of the world with some connections. Four examples of how networks bring the world together are shown. Intelligent networks allow handheld devices to receive news and emails, and to send text. Video conferencing instantly connects people around the globe. Phones connect globally to share voice, text, and images. Online gaming connects thousands of people seamlessly.

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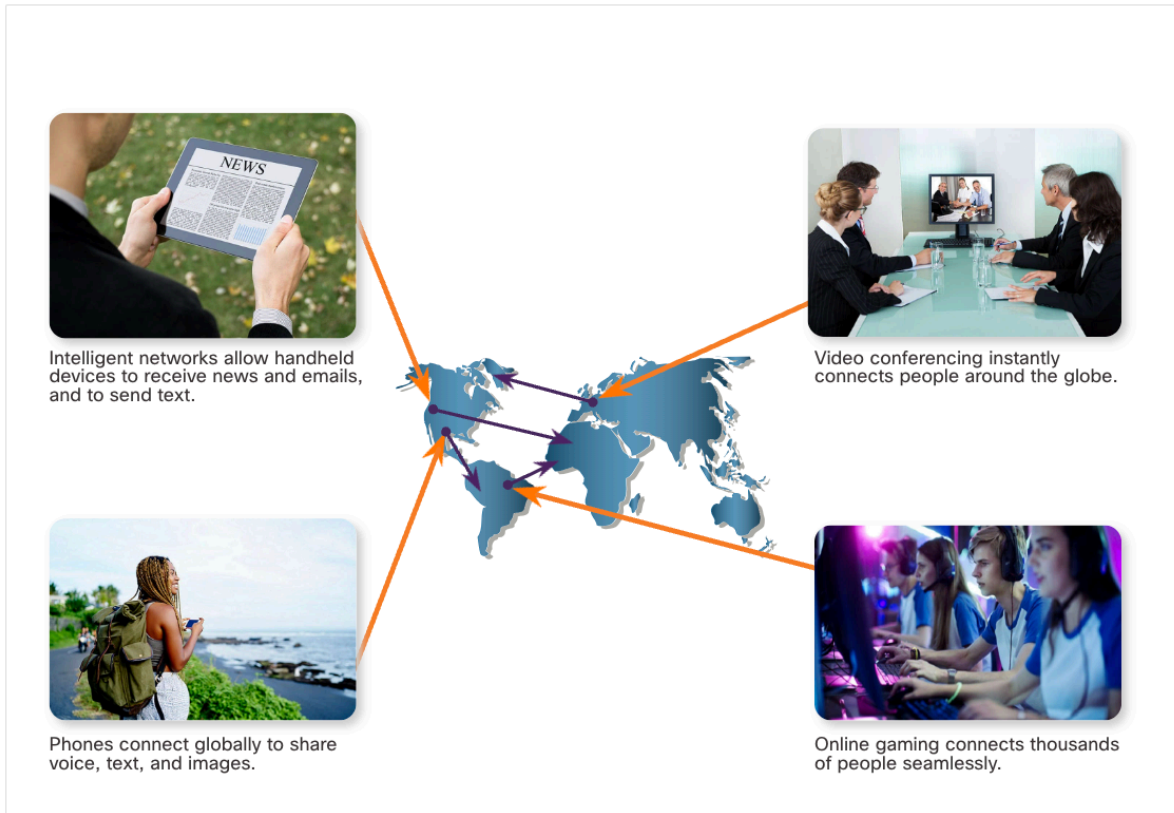
Local Networks

Local networks come in all sizes. They can range from simple networks consisting of two computers, to networks connecting hundreds of thousands of devices. Networks installed in small offices, or homes and home offices, are referred to as small office/home office (SOHO) networks. SOHO networks let you share resources such as printers, documents, pictures, and music, between a few local users.

In business, large networks can be used to advertise and sell products, order supplies, and communicate with customers. Communication over a network is usually more efficient and less expensive than traditional forms of communication, such as regular mail or long distance phone calls. Networks allow for rapid communication such as email and instant messaging, and provide consolidation and access to information stored on network servers.

Business and SOHO networks usually provide a shared connection to the internet. The internet is considered a "network of networks" because it is literally made up of thousands of local networks that are connected to each other.

Mobile Devices

Smartpohone: are able to connect to the internet from almost anywhere. Smartphones combine the functions of many different products together, such as a telephone, camera, GPS receiver, media player, and touch screen computer.

Tablets: Tablets, like smartphones, also have the functionality of multiple devices. With the additional screen size, they are ideal for watching videos and reading magazines or books. With on-screen keyboards, users are able to do many of the things they used to do on their laptop computer, such as composing emails or browsing the web.

Smart watch: A smartwatch can connect to a smartphone to provide the user with alerts and messages. Additional functions, such as heart rate monitoring and counting steps, like a pedometer, can help people who are wearing the device to track their health.

Smartglasses: A wearable computer in the form of glasses, such as Google Glass, contains a tiny screen that displays information to the wearer in a similar fashion to the Head-Up Display (HUD) of a fighter pilot. A small touch pad on the side allows the user to navigate menus while still being able to see through the smart glasses.

Connected Home Devices:
Smart TV, gamming console, Appliances, Security System,
Also... cars RFID tags, Sensors and Actuators, mobile diveces

1. **What type of network allows computers in a home office or a remote office to connect to a corporate network?**

   small home network
   small office home office network
   medium to large network
   world wide network

2. What can be placed in or on a package so that it can be tracked?

   network interface card
   sensor
   actuator
   RFID tag

Basic Functions of a Computer:

Input: This is like the ears of the computer. It listens (or, more accurately, receives) information from input devices like keyboards, mice, or scanners.

Processing: Think of this as the brainwork. The Central Processing Unit (CPU) is the mastermind here, taking the input data and performing operations on it according to the instructions provided.

Storage: Like a treasure chest, storage devices keep all the data and programs. This includes both temporary storage (RAM) and long-term storage (like hard drives or SSDs).

Output: The computer's way of talking back. This involves displaying information through output devices like monitors, printers, or speakers.

Control: This is the conductor of the orchestra, managing and coordinating all the other functions to ensure everything works smoothly together.

Types of Computers:

Personal Computers (PCs):

- Desktops: These are the stationary workhorses, often used in offices or homes.
- Laptops: Portable and convenient, these are your coffee shop regulars, perfect for on-the-go use.
- Tablets and Smartphones: The ultra-portables, offering computer functions in a very handy package.
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Server Computers:

- These are the behind-the-scenes heroes, storing, sending, and processing data for other computers on the network.
- Think of them as the librarians of the digital world, managing a vast amount of information and resources.
- They're more powerful than your average PC and are optimized for availability and reliability.
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Supercomputers:

- The Olympians of computers, these are incredibly powerful and fast.
- They're used for complex tasks like weather forecasting, scientific simulations, and cryptography.

- Imagine a supercomputer as a network of hundreds or thousands of CPUs working in concert, like a perfectly synchronized swimming team.
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Specialized Computers:

- These are designed for specific tasks, like embedded systems in cars or appliances.
- Think of them as the skilled artisans of the computer world, expertly crafted for particular functions.

Examples:
Imagine a bustling kitchen in a restaurant – this will be our tasty analogy for the computer Input/Output (I/O) process.

Input:
The kitchen receives orders from customers (input data) through the waitstaff (input devices like keyboards and mice). The orders represent the specific requests for processing – dishes the customers want to enjoy.

Processing:
The chef (CPU) takes the orders and starts preparing the meals (processing the data). The chef follows recipes (programs and instructions) to turn raw ingredients (input data) into delicious dishes (processed information).

Storage:
The pantry and the refrigerator (storage devices) keep all the ingredients fresh and ready. The pantry represents long-term storage where dry goods (hard drives or SSDs) are kept, while the refrigerator is like RAM, holding the items (data) the chef needs in the short term.

Output:
Once the meals are prepared (data processing is complete), the waitstaff delivers the finished dishes to the customers (output devices like monitors and printers). This is the output – the processed data presented in a usable form.

Control:
The head chef (control unit) oversees the entire operation, ensuring orders are processed efficiently and correctly, coordinating between the waitstaff and cooks, much like a control unit in a computer manages the operations of input, processing, storage, and output to ensure the system runs without a hitch.

In this culinary scenario, each step of the Input/Output process is critical to delivering a satisfying dining experience, just as each step in a computer's I/O process is vital to delivering the results we need, whether it's a document, a calculation, or a video stream. Bon Appétit!