N+ Assignment

Module 5. Network Fundamentals and Building Networks

- Beginner Question

1. What is network?

   A network is a collection of computers, servers, mainframes, network devices, peripherals, or other devices connected to one another to allow the sharing of data.

2. List Common Network Components

   Computer network components

   Network Interface Card

   Hub

   Switch Cables and connectors

   Router

   Modems

3. Add and configure loopback adaptor in network and sharing center

   One of the most missed configuration issue when installing Oracle Database on Windows systems is failure to configure the Loopback adapter prior to installing the software on DHCP clients. Many Oracle products such as Database Control, Database Listener, Weblogic Server either standalone or bundled in JDeveloper use the machine IP address and or host name during the installation and may fail to function properly when either changes.

- Intermediate Question

1. Explain application of network

   Change creates the necessity for an application network

   Right now the enterprise is going through an unprecedented period of change. The business world has changed. The customer landscape has changed. The competitive landscape has changed; in fact, the entire enterprise ecosystem has changed.

2. What do you mean by Node?

   A node is a point of intersection/connection within a network. In an environment where all devices are accessible through the network, these devices are all considered nodes. The concept of nodes works on several levels, but the big-picture view defines nodes as the major centers through which Internet traffic is typically routed. This usage is somewhat confusing, as these same Internet nodes are also referred to as Internet hubs.

3. practice of simple file folder sharing

   Step 1: Create File Create a file/folder on the desktop. Navigate to it via file explorer.

   Step 2: Advanced Sharing Advanced Sharing Advanced Sharing Right-click on the file, select properties. Click over to the "Sharing" tab and select advanced sharing. Check the box marked "Share this folder".

   Step 3: Permissions Permissions Permissions Select which permissions you want other users to have for this file. You will retain full access, but others will have either read-only, edit, or executable permissions, depending on what you select.

   Step 4: Open Sharing Open Sharing Go to control panel, select network & internet, then select network & sharing center. Go to Advanced sharing settings. Scroll down, and select "Turn on sharing so anyone with network access can read and write files in the Public folders" and "Turn off password protected sharing".

   Step 5: Note Ensure that you can connect to the other PC. Ping each other to see if you are both connected to the same server.

   Step 6: Accessing the File Accessing the File On the 2nd PC, open file explorer. Go to network. Your file should be there.

- Advance Question

1. List types of devices
   1. Access Point
   2. Router
   3. Hub
   4. Bridge
   5. Gateway
   6. Switch
   7. Modem
   8. Brouter
2. Explain types of router

   Types of Routers

   Broadband Routers

   Wireless Routers

   Edge Router

   Subscriber Edge Router

   Inter-provider Border Router

   Core Router

Topic: Types of Network

- Beginner Question

1. What is Difference between a LAN, MAN, WAN?

   LAN, MAN, and WAN are the three types of the network designed to operate over the area they cover. There are some similarities and dissimilarities between them. One of the significant differences is in the geographical area they cover, i.e. LAN covers the smallest area; MAN covers an area larger than LAN and WAN comprises the largest of all.

2. Common Network Components

   Network Interface Card

   Hub

   Switch

   Cables and connectors

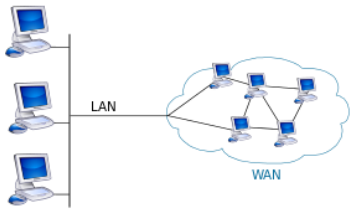
   Router

   Modems

Intermediate Question

1. Explain Wide Area Network

   A wide area network (WAN) is a network that exists over a large-scale geographical area, as compared to other network types, such as a local area network (LAN).



2. Explain Network Backbone

   A backbone or core network is a part of a computer network which interconnects networks, providing a path for the exchange of information between different LANs or subnetworks. A backbone can tie together diverse networks in the same building, in different buildings in a campus environment, or over wide areas.

3. Explain CAN

   A campus area network (CAN) is a network of multiple interconnected local area networks (LAN) in a limited geographical area. A CAN is smaller than a wide area network (WAN) or metropolitan area network (MAN). A CAN is also known as a corporate area network (CAN). In most cases, CANs own shared network devices and data exchange media.

Advance Question

1. Define Physical Network Topologies

   Physical topology refers to the interconnected structure of a local area network (LAN). The method employed to connect the physical devices on the network with the cables, and the type of cabling used, all constitute the physical topology.

2. Network Architecture: Peer-to-Peer

   Peer-to-peer (P2P) computing or networking is a distributed application architecture that partitions tasks or workloads between peers. Peers are equally privileged, equipotent participants in the application. They are said to form a peer-to-peer network of nodes.

3. Point-to-multipoint network

   In telecommunications, point-to-multipoint communication (P2MP, PTMP or PMP) is communication which is accomplished via a distinct type of one-to-many connection, providing multiple paths from a single location to multiple locations.

Topic: Network Devices

Beginner Question

1. Why we use Network and Devices

   Network devices, or networking hardware, are physical devices that are required for communication and interaction between hardware on a computer network. Here is the common network device list: Hubs connect multiple computer networking devices together.

2. Explain Switch?

   A network switch is a small device that centralizes communications among several connected devices in one local area network (LAN). Stand-alone Ethernet switch devices were commonly used on home networks many years before home broadband routers became popular. Modern home routers integrate Ethernet switches directly into the unit as one of their core functions.

Intermediate Question

1. Define list of cables in use of network

   coaxial cable

   optical fiber cable

   and twisted pair cables

2. Explain Define Access point

   An access point is a device, such as a wireless router, that allows wireless devices to connect to a network. Most access points have built-in routers, while others must be connected to a router in order to provide network access. In either case, access points are typically hardwired to other devices, such as network switches or broadband modems.

3. Which types of transmission modes in computer network

   Transmission mode means transferring of data between two devices. It is also known as communication mode. Buses and networks are designed to allow communication to occur between individual devices that are interconnected.

   There are three types of transmission mode:-

   1. Simplex Mode

   2. Half-Duplex Mode

   3. Full-Duplex Mode

4. Practice on Remote Desktop connection

   Yes

5. Practice on remote assistance

   Yes

- Advance Question

1. Explain Repeater and router

   The repeater and router make a huge difference. Your router can act as a repeater, but your repeater can not operate as a router. The router is being used to connect to the internet, whereas the repeater is used to replicate the router's received signals and the repeater to amplify.

2. What is multiplexer?

   A multiplexer is a telecommunications device that multiplexes several data channels from different pieces of data terminal equipment (DTE). Multiplexers (MUXes) are frequently used to combine digital lines in order to save cost by eliminating the need for extra line termination devices such as CSU/DSUs

3. Explain MODEM

   A modem is a networking device that converts digital data into a signal transmitted or received through a phone line, cable, and satellite connection.

4. Monitor "event viewer"

   The Event Viewer is a Microsoft Management Console (MMC) snap-in that enables you to browse and manage event logs. It is an indispensable tool for monitoring the health of systems and troubleshooting issues when they arise.

Topic: Install and configure DHCP, DNS

- Beginner Question

1. Explain DHCP Dynamic host configuration protocol

   Dynamic Host Configuration Protocol (DHCP) is a network management protocol used to dynamically assign an IP address to nay device, or node, on a network so they can communicate using IP (Internet Protocol). DHCP automates and centrally manages these configurations. There is no need to manually assign IP addresses to new devices

2. Application of DHCP with one example

   When a host (DHCP client) needs an IP configuration, it connects to a DHCP server and requests for an IP configuration. A DHCP server contains several pre-configured IP configurations. When it receives a DHCP request from a DHCP client, it provides an IP configuration to the client from all available IP configurations.

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- ## Intermediate Question

1. Explain Domain naming Services

   When a host (DHCP client) needs an IP configuration, it connects to a DHCP server and requests for an IP configuration. A DHCP server contains several pre-configured IP configurations. When it receives a DHCP request from a DHCP client, it provides an IP configuration to the client from all available IP configurations.

2. Application of DNS with one example

   DNS is a host name to IP address translation service. DNS is a distributed database implemented in a hierarchy of name servers. It is an application layer protocol for message exchange between clients and servers.

Topic: Network Topologies

- ## Beginner Question

1. What are the 5 network topologies?

   Bus Topology.

   Ring Topology.

   Mesh Topology.

   Star Topology.

   Tree Topology.

   Hybrid Topology.

2. What is Internet topology?

   Network Topology is the structure and arrangement of components of a computer communication system

3. What is protocol

   Network protocols are a set of well-defined rules through which a user communicates over the internet or intranet

- ## Intermediate Question

1. What is the most common network topology?

   Star topology is by far the most common network topology.

2. Explain star topology in networking?

Star topology is an arrangement of the network in which every node is connected to the central hub, switch or a central computer.

The central computer is known as a server, and the peripheral devices attached to the

server are known as clients.

Coaxial cable or RJ-45 cables are used to connect the computers.

- ## Advance Question

1. Explain Hybrid topology?

   Hybrid topology is a combination of more than two topologies. In computer networking, a network structure that contains more than two topologies is known as hybrid topology. It inherits the advantages and disadvantages of included topologies.

2. What is physical and logical topology?

   A logical topology is how devices appear connected to the user. A physical topology is how they are actually interconnected with wires and cables. For example, in a shared Ethernet network that uses hubs rather than switches, the logical topology appears as if every node is connected to a common bus that runs from node to node.

3. What are the types of logical topology?

Types of Network Topology

Bus Topology. Bus topology is the kind of network topology where every node, i.e. ...

Ring Topology. Ring Topology is a topology type in which every computer is connected to another computer on each side.

Star Topology. ...

Mesh Topology. ...

Tree Topology. ...

Hybrid Topology. ...

Topic: OSI Model

- ## Beginner Question

1. What is OSI model explain?

   The Open Systems Interconnection (OSI) model describes seven layers that computer systems use to communicate over a network. It was the first standard model for network communications, adopted by all major computer and telecommunication companies in the early 1980s The modern Internet is not based on OSI, but on the simpler TCP/IP model.

2. List of Application layer protocol?

This is a protocol used mainly to access data on the World Wide Web (www).

The Hypertext Transfer Protocol (HTTP) the Web's main application-layer protocol although current browsers can access other types of servers

A respository of information spread all over the world and linked together.

3. How many types of protocols are there?

   Different Types of Networking Protocols 1. HTTP or HTTPs 2. FTP (File Transfer Protocol) 3. Email Protocols (POP3, IMAP, SMTP) 4. TCP (Transmission Control Protocol) and UDP (User Datagram Protocol)

• Intermediate Question

1. What is the difference between TCP IP model and OSI model?

   TCP/IP and OSI are the two most widely used networking models for communication. There are some similarities and dissimilarities between them. One of the major difference is that OSI is a conceptual model which is not practically used for communication, whereas, TCP/IP is used for establishing a connection and communicating through the network.

2. What is TCP IP networking?

   TCP/IP, or Transmission Control Protocol/Internet Protocol, is a suite of communication protocols used to interconnect network devices on the internet. TCP/IP can also be used as a communications protocol in a private computer network (an intranet or extranet).

• Advance Question

1. What is a wired Internet connection?

   Wired-internet meaning A network that provides access to the Internet by being hard wired to the provider. A wired Internet connection implies cable, DSL or FiOS, which is cabled from the user's premises to the service provider.

2. What are the disadvantages of wired networks?

   Following are the drawbacks or disadvantages of wired network: ➡Wired connection does not provide mobility during usage. ➡Installation of wired network is very difficult. Moreover it is difficult to troubleshoot in faulty situation.

3. How do I configure network authentication?

To configure Network Level Authentication for a connection

On the RD Session Host server, open Remote Desktop Session Host Configuration. To open Remote Desktop Session Host Configuration, click Start, point to Administrative Tools, point to Remote Desktop Services, and then click Remote Desktop Session Host Configuration.

Under Connections, right-click the name of the connection, and then click Properties.

On the General tab, select the Allow connections only from computers running Remote Desktop with Network Level Authentication check box.

If the Allow connections only from computers running Remote Desktop with Network Level Authentication check box is selected and is not enabled, the Require user authentication for remote connections by using Network Level Authentication Group Policy setting has been enabled and has been applied to the RD Session Host server.

Click OK.

4. Practice of Team viewer, Any Desk, Google Hangout, Skype, zoom
   Yes

- Advance Question

5. Download google chrome
   Yes
6. configure "date and time" opting in control panel
   Yes

Topic: TCP/IP

- Assignment level Basic:

1. What is TCP/IP?
   IP is identification number of devise and computer.
2. What is the full form of TCP/IP?
   TCP/IP, or the Transmission Control Protocol/Internet Protocol

- Assignment level Intermediate:

1. List out the types of IP?

Class A

Class B

Class C

Class D

Class E

2. What is protocol?
   The Internet Protocol (IP) is the principal communications protocol in the Internet protocol suite for relaying datagrams across network boundaries. Its routing function enables internetworking, and essentially establishes the Internet. IP has the task of delivering packets from the source host to the destination host solely based on the IP addresses in the packet headers.
3. DO a practical to set the tcp/ip in network adapter?
   Yes

- Advance Question

Topic: Cables

- Beginner Question

1. Types of cables and connectors?

USB (Universal Serial Bus)

RJ-11 (Registered Jack)

RJ-45 (Registered Jack)

F-Type

ST (Straight Tip) and SC (Subscriber Connector or Standard Connector)

Fiber LC (Local Connector)

MT-RJ (Mechanical Transfer Registered Jack)

2. Explain twisted pair cable and shielded twisted pair cable

   On the contrary, STP (Shielded twisted pair) is a twisted pair cable confined in foil or mesh shield that guards the cable against electromagnetic interference. UTP (Unshielded twisted pair) is a cable with wires that are twisted together. STP (Shielded twisted pair) is a twisted pair cable enclosed in foil or mesh shield.

- Intermediate Question

1. Which of these cables connect computers to monitors?

   There are four types of computer cable connections to a monitor: VGA, DVI, HDMI and DisplayPort. If your monitor accepts two or more cables types (e.g. VGA and DVI), you should just connect a single display cable to it. For this example, you can hook up your monitor to either a VGA cable or DVI cable.

2. How do I connect to a shared printer?

   Right click on the shared printer and choose “Connect” option. Another way is to open device manager and use right click to find option Add printer.