WRAP - UP NETWORKING

What is our GOAL for this MODULE?

In this class, we revised all networking concepts. We designed bus topology and make a server-client socket relationship to set the server.

What did we ACHIEVE in the class TODAY?

- Q & A session on networking
- Topologies & server-client relationship

Which CONCEPTS/ CODING BLOCKS did we cover today?

- Revised network concepts

How did we DO the activities?

1. **What is the difference between a Mac address and an IP address?**

   Mac Address: MAC address is a unique number that is used to track a device in a network

   IP Address: An IP address is a unique address that identifies a device on the internet or a local network

2. **How IPv4 is different from IPv6**?

   IPv4 and IPv6 are internet protocol version 4 and internet protocol version 6,

   IPv4: The IPv4 is a 32-bit address,

   IPv6: The IPv4 is a 64-bit address,

3. **How will you check your computer's IP Address and Mac Address?**

   Using Command **ipconfig**

4. **What are Sockets and what's the use of sockets?**

   Sockets are endpoints built for sending and receiving data. A single network will have two sockets -server socket, client socket. These sockets are a combination of an IP address and a Port.

5. **Which module is used to create Graphical-User-Interface?**

   Tkinter

6. **To make the connection between two devices what do we use in networking?**
   Sockets.

7. **What is the use of FTP servers in file-sharing applications?**
   For upload and download content from a shared folder

8. **Why do we use dummy Authorizer while resting FTP servers?**
   For Authentication

9. **What do we use the Turn servers concept in Video Chat App?**
   In order to negotiate connections through firewalls, WebRTC uses TURN servers. In addition, when TURN is used to negotiate a firewall/NAT, the media (audio and video) from the call is routed through the TURN server.

10 **Why do we use peer JS technology?**
   PeerJS simplifies peer-to-peer data, video, and audio communications over WebRTC. Peers can connect to a remote peer by simply providing their ID.

11. **What protocol is used to send and receive Emails, and how many and what ports are used?**
   SMTP (Simple Mail Transfer Protocol) is the basic standard that mail servers use to send emails to one another across the internet. 25, 585, 467 ports are used to send emails.

12. **What are the widely used methods to crack users' passwords?**
Password cracking is the process of trying to crack a password. Brute Force Attack, Dictionary Attack is widely used to crack a user's password

13. **What do we need to keep in mind when we talk about secure passwords?**
   The strength of a password is determined by;

   - **Length**: number of characters used in password

   - **Complexity**: Combination of letters, numbers, and symbols

   - **Unpredictability**: uncommon

14. **How is steganography different from cryptography?**

   Steganography: Used to hide data in an image

   Cryptography: Change data in no readable form and vice versa

15. **What are the differences between asymmetric and symmetric cryptography?**

Asymmetric Cryptography	Symmetric cryptography
need two keys: Private and public	Need one key only public
Provides confidentiality and authenticity	Only confidentiality

16. How is worm different from a virus?

Worm: A worm is an independent malicious program that replicates and propagates itself

Virus: Viruses are triggered by the activation of their host

17. What is DBMS?

Database Management Systems (DBMS) are programs that control the creation, maintenance, and use of databases. A DBMS can be described as a File Manager that stores data in a database rather than storing it on a file system.

18. What is a Union operator?

The UNION operator is used to com
bining the results of two tables, and it eliminates duplicate rows from the tables.

19. Internet scams are conducted by cyber-criminals in which users are convinced digitally to disclose confidential information. What type of attack did we call?

Phishing attack

20. SQL injection is an attack in which _____ code is inserted into strings that are later passed to an instance of SQL Server.

Malicious code

21. **Creation of bus topology on cisco packet tracer**

Bus Topology: In this topology when a node/PC wants to send the message over the network, it puts a message over the network, and all the stations available in the network will receive the message whether it has been addressed or not as the backbone cable is considered as a "single lane" through

which the message is broadcast to all the stations
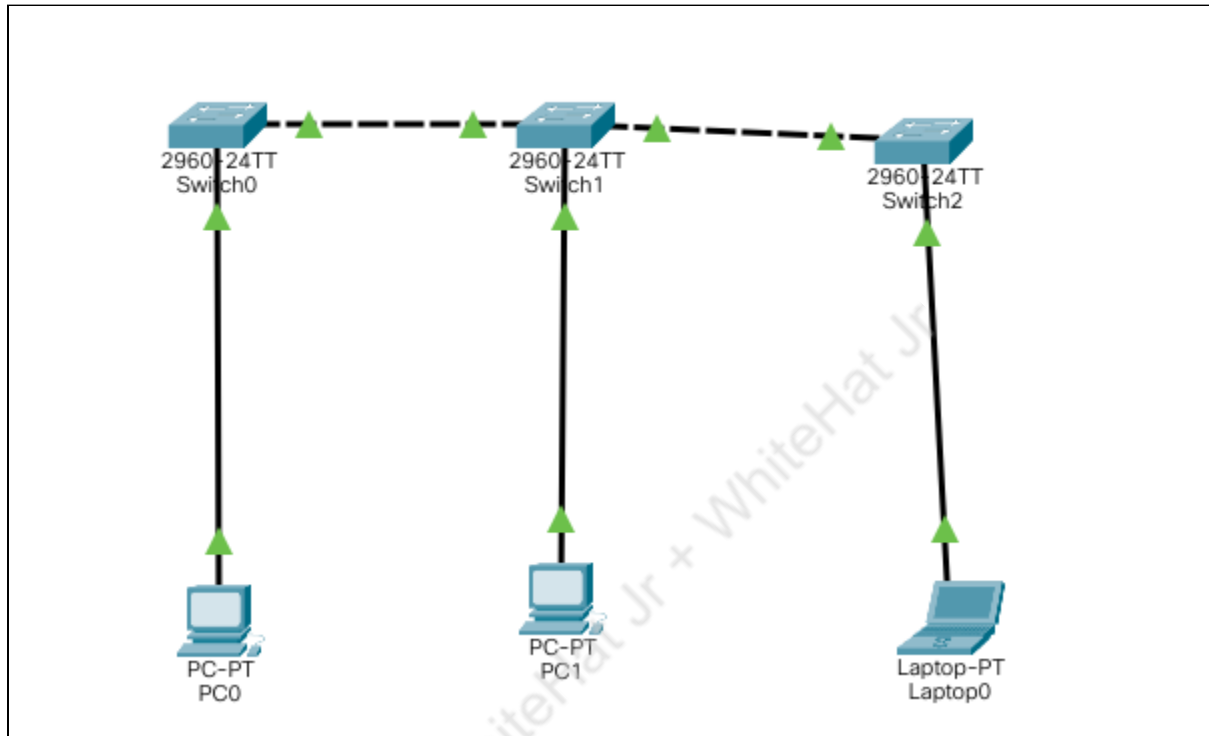
22. Create a server-client program to establish a connection between the server and the client
    ● Create server.py

```python
import socket

server = socket.socket(socket.AF_INET, socket.SOCK_STREAM)

ip_address = '127.0.0.1'
port = 8000

server.bind((ip_address, port))
server.listen()

clients = []

print("Server is running...")
```

- Create client.py

```python
# client.py
import socket

nickname = input("Choose your nickname: ")

client = socket.socket(socket.AF_INET, socket.SOCK_STREAM)

ip_address = '127.0.0.1'
port = 8000

client.connect((ip_address, port))

print("Connected with the server...")
```

Output:

Server has started...

What's next?

In the next class, we will learn about the **Internet of Things.**

EXTEND YOUR KNOWLEDGE:

Learn more about Network