## #BASIC KEYWORDS

### >* ABOUT COMPUTER'S *

### (Desktop/Laptop/Mobile)

### Here's a brief overview of computation, storage, and network:

*1*. **Computation**:

- **Definition**: Computation refers to the process of performing mathematical calculations or processing data according to a set of instructions (software programs). It involves operations like addition, subtraction, multiplication, division, and logical comparisons.

- **Function**: The Central Processing Unit (CPU) in a computer handles computation by executing instructions from programs, performing calculations, and processing data.

2. **Storage**:

- **Definition**: Storage refers to the methods and devices used to save and retrieve data and software. It can be either temporary or permanent.

- **Types**:

  - **Primary Storage (RAM)**: Temporary storage that holds data and instructions currently being used or processed by the CPU.

  - **Secondary Storage**: Permanent storage like Hard Disk Drives (HDDs) or Solid State Drives (SSDs) that save data even when the computer is turned off.

3. **Network**:

- **Definition**: A network is a system of interconnected computers and devices that can communicate with each other to share resources and information.

- **Types**:

  - **Local Area Network (LAN)**: A network that connects devices within a limited area, like a home or office.

- **Wide Area Network (WAN)**: A network that covers a larger geographic area, such as connecting multiple cities or countries.

- **Internet**: A global network connecting millions of private, public, academic, and business networks, allowing worldwide communication and information exchange.

Each of these components plays a crucial role in how computers operate and interact with other devices and systems.

## *# 7 LAYERS OF OSI*

The OSI (Open Systems Interconnection) model is a framework for understanding and designing network systems. It divides the process of network communication into seven distinct layers, each with specific functions. Here's a brief overview of each layer:

1. **Physical Layer (Layer 1)**:

   - **Function**: Handles the physical connection between devices, including the transmission of raw binary data over a medium like cables or wireless signals.

   - **Examples**: Ethernet cables, fiber optics, and radio frequencies.

2. **Data Link Layer (Layer 2)**:

   - **Function**: Manages node-to-node data transfer and handles error detection and correction. It packages raw data from the Physical Layer into frames and ensures reliable delivery.

   - **Examples**: Ethernet, Wi-Fi, and MAC addresses.

3. **Network Layer (Layer 3)**:

   - **Function**: Responsible for routing data across different networks and handling logical addressing and packet forwarding. It determines the best path for data to travel from source to destination.

- **Examples**: IP addresses and routers.

4. **Transport Layer (Layer 4)**:

- **Function**: Manages end-to-end communication and data flow control. It ensures that data is delivered error-free, in sequence, and without loss or duplication.

- **Examples**: TCP (Transmission Control Protocol) and UDP (User Datagram Protocol).

5. **Session Layer (Layer 5)**:

- **Function**: Manages sessions or connections between applications. It establishes, maintains, and terminates communication sessions.

- **Examples**: Session management in communication protocols, such as in web or file transfer applications.

6. **Presentation Layer (Layer 6)**:

- **Function**: Translates data between the application layer and the network format. It handles data encryption, decryption, and conversion between different data formats.

- **Examples**: Data translation and encryption formats like JPEG, ASCII, and SSL/TLS.

7. **Application Layer (Layer 7)**:

- **Function**: Provides network services directly to end-user applications. It’s the interface for user applications to interact with the network.

- **Examples**: Web browsers, email clients, and file transfer protocols.

The OSI model helps in understanding and troubleshooting network issues by separating network communication into manageable layers.

# About protocol,DNS,port no.

**Protocol**: In computing, a protocol is a set of rules that define how data is transmitted and received over a network. It ensures that devices can communicate effectively and understand each other.

**DNS (Domain Name System)**: DNS is a protocol that translates human-readable domain names (like www.example.com) into IP addresses (like 192.0.2.1), which are used by computers to locate each other on the internet.

**Port Number**: A port number is a numerical identifier used in networking to specify a particular process or service on a device. For example, HTTP traffic typically uses port 80, and HTTPS uses port 443

# FRONT-END,BACK-END,API

- **Front-end**: The part of a website or application that users interact with directly. It includes everything the user sees and experiences, such as

layout, design, and user interface elements. Technologies used include HTML, CSS, and JavaScript.

- **Back-end**: The server-side part of a website or application that handles data processing, database interactions, and server logic. It ensures that requests from the front-end are processed and responded to correctly. Common languages include Python, Java, and Node.js.

- **API (Application Programming Interface)**: A set of rules and protocols that allows different software applications to communicate with each other. APIs enable the front-end and back-end to interact by sending requests and receiving responses, often in the form of data.
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# CLOUD COMPUTING

**Cloud Computing** is the delivery of computing services—including servers, storage, databases, networking, software, and more—over the internet (the “cloud”). It allows users to access and use resources on-demand without managing physical infrastructure.

**Types of Cloud Computing**:

1. **Public Cloud**: Services are provided over the internet and shared among multiple organizations. Examples include Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP). It’s cost-effective and scalable but offers less control over the infrastructure.

2. **Private Cloud**: Services are maintained on a private network, dedicated to a single organization. This provides greater control and

security but can be more expensive. It can be hosted on-premises or by a third-party provider.

3. **Hybrid Cloud**: Combines public and private clouds, allowing data and applications to move between them. This approach offers greater flexibility, optimizing existing infrastructure while leveraging the scalability of public clouds.

Each type provides different levels of control, flexibility, and cost, allowing organizations to choose based on their specific needs.

# BLOCKCHAIN

**Block chain **is a decentralized digital ledger that records transactions in a series of linked blocks. Each block contains a set of transactions and is securely linked to the previous one, ensuring data integrity and immutability. It operates across a network of computers, making it transparent and resistant to tampering or fraud.