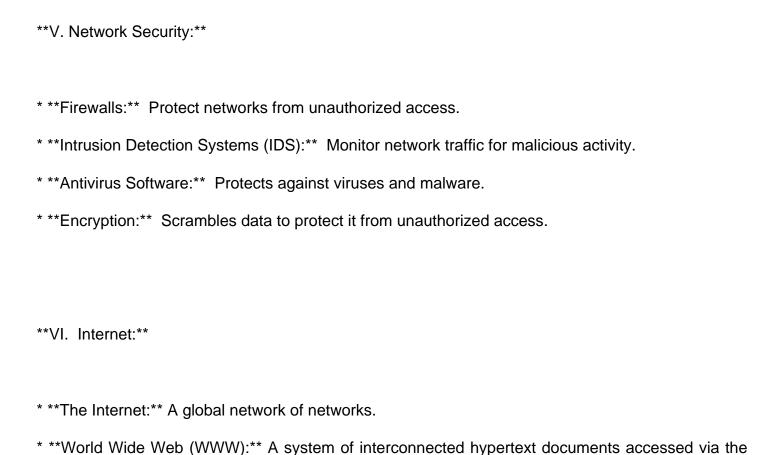
CN: Create Basics Computer Network Notes

These notes cover the fundamental concepts of computer networks. They are intended as a starting point and should be supplemented with further reading and practical experience.

- **I. Introduction to Computer Networks:**
- * **What is a Computer Network?** A collection of interconnected computing devices (computers, servers, smartphones, etc.) that can communicate and share resources (data, hardware, software).

 * **Types of Networks:**
- * **Personal Area Network (PAN):** Smallest network, connecting devices within a person's immediate vicinity (e.g., Bluetooth devices).
- * **Local Area Network (LAN):** Network connecting devices within a limited geographical area (e.g., home, office, school).
- * **Metropolitan Area Network (MAN):** Network covering a larger geographical area than a LAN, often a city or town.
- * **Wide Area Network (WAN):** Largest type of network, spanning across large geographical distances (e.g., the Internet).
- * **Network Topologies:** The physical or logical layout of a network. Common topologies include:
 - * **Bus:** All devices connect to a single cable.
 - * **Star:** All devices connect to a central hub or switch.
 - * **Ring:** Devices connect in a closed loop.
 - * **Mesh:** Devices connect to multiple other devices, providing redundancy.
 - * **Tree:** A hierarchical structure combining elements of bus and star topologies.
- * **Network Protocols:** A set of rules and standards that govern communication between devices on a network (e.g., TCP/IP, HTTP, FTP).

II. Network Hardware: * **Network Interface Card (NIC):** Allows a device to connect to a network. * **Hub:** A simple device that broadcasts data to all connected devices. * **Switch:** A more intelligent device that forwards data only to the intended recipient. * **Router:** Connects different networks together, directing traffic between them. * **Modem:** Modulates and demodulates signals to transmit data over telephone lines or cable. * **Wireless Access Point (WAP):** Enables wireless devices to connect to a wired network. **III. Network Software:** * **Operating Systems (OS):** Provide network capabilities, allowing devices to communicate. * **Network Operating System (NOS):** Specialized OS designed for managing network resources. * **Network Management Software:** Used to monitor and control network performance. **IV. Network Communication:** * **IP Addresses:** Unique numerical addresses that identify devices on a network (e.g., IPv4, IPv6). * **Domain Name System (DNS):** Translates domain names (e.g., google.com) into IP addresses. * **Transmission Control Protocol (TCP):** Provides reliable, ordered data delivery. * **Internet Protocol (IP):** Handles the addressing and routing of data packets. * **Data Packets:** Data is broken down into smaller packets for transmission.



This is a concise overview. Each of these topics can be expanded upon significantly. Further research into specific areas is recommended for a deeper understanding. Remember to consult reliable sources and updated information for the most accurate and current details.

Internet.