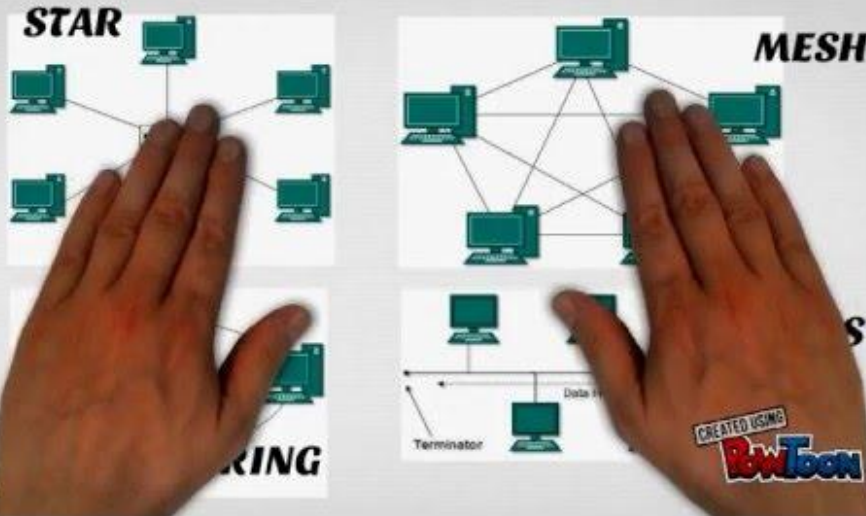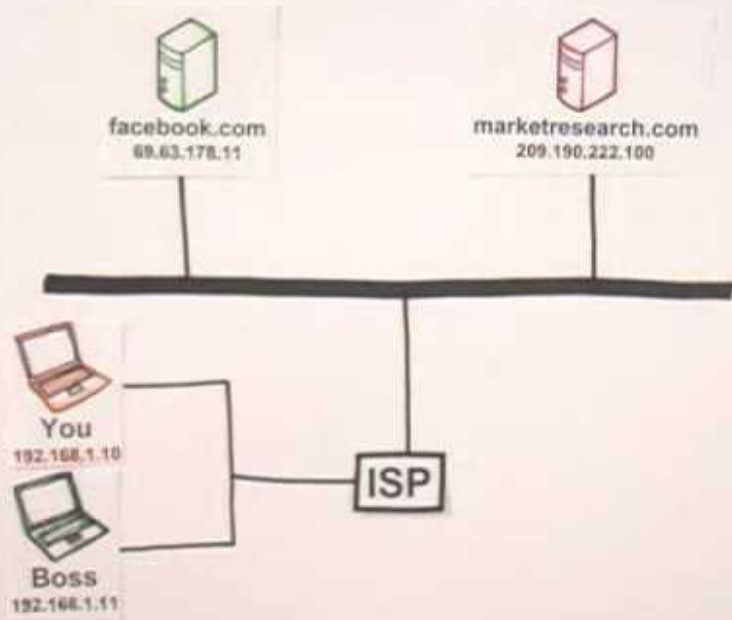# APCSP Exam Terms & Concepts

Internet & Networks

# Computer Network



- A collection of computing devices connected so that they can communicate and share resources
- There are different types of networks available - LAN , WAN, MAN, Ethernet, Wireless

# Internet



- A wide-area network that spans the planet

# Internet Protocols



- A set of rules that defined how data is formatted and processed on a network
- Application>Transport>Internet>Link>Physical
- SMTP, FTP, Telnet, TCP/IP, HTTP/HTTPS

# SMTP



- Simple Mail Transfer Protocol
- A protocol that allows you to send emails from an email client to an email server

# FTP



- Files Transfer Protocol
- A protocol that computers on the internet use to transfer files to and from one another
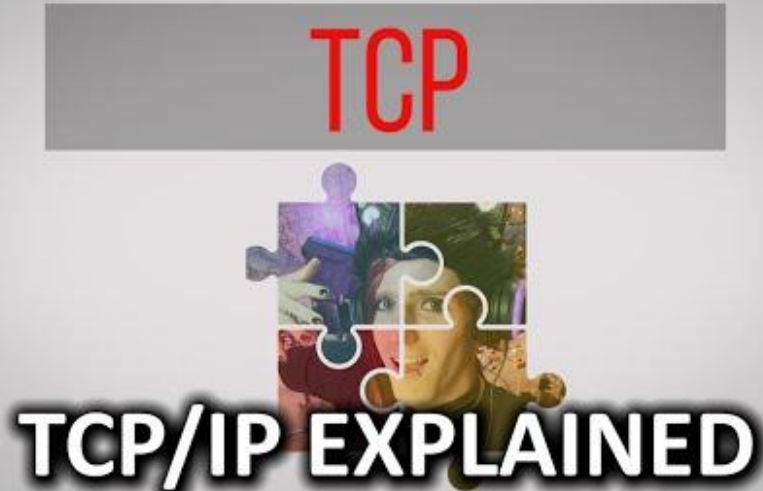
# Telnet



- Terminal Network
- A network protocol used to provide a command line interface for communicating with a device, often remotely
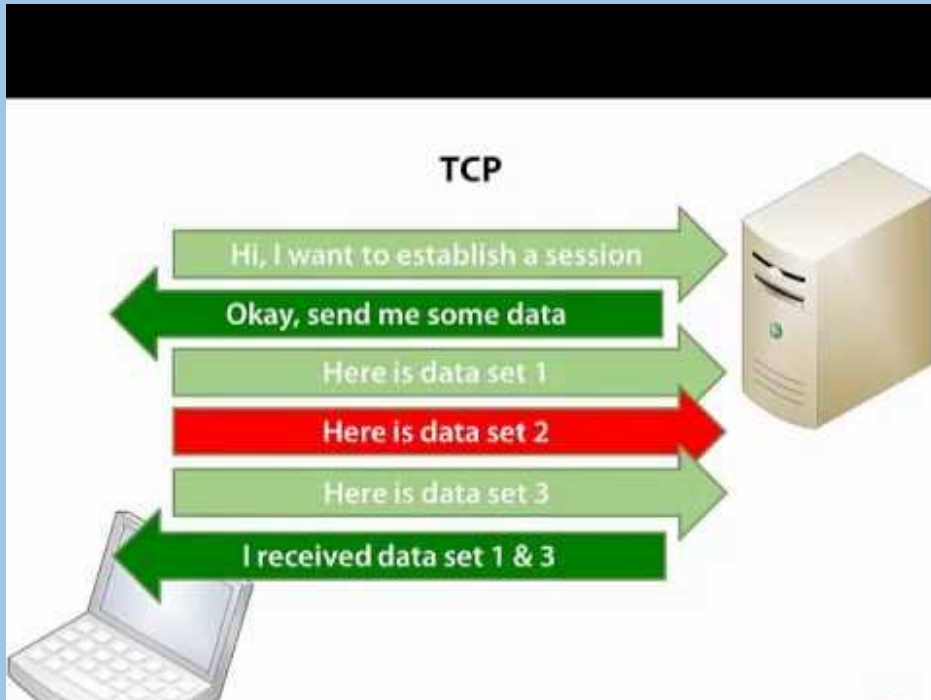
# TCP/IP



- Transmission Control Protocol & Internet Protocol
- A suite of protocols and programs that support low-level network communication

# UDP



- User Datagram Protocol
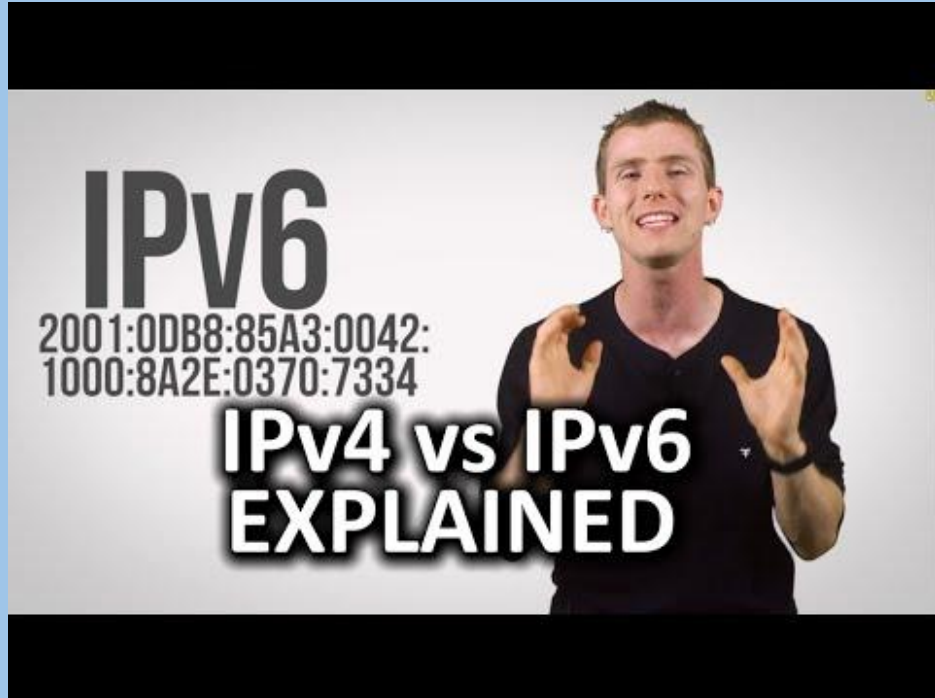- An alternative to TCP that achieves higher transmission speeds at the cost of reliability

# HTTP/HTTPS



- Hypertext Transfer Protocol

# IP Addresses



- An address made up of numeric values separated by dots that uniquely identifies a computer on the Internet

# DNS

## Domain Name System
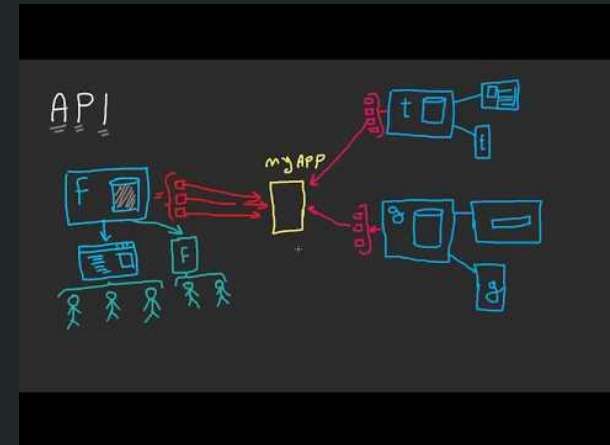


- A database of network names and IP addresses

# API

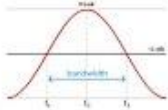## Application Programming Interface



- A set of subroutine definitions, protocols, and tools for building an application software
- Remote APIs, Web APIs
- API can be private, partnered, public

# Bandwidth



- The number of bits or bytes that can be transmitted from one place to another in a fixed amount of time
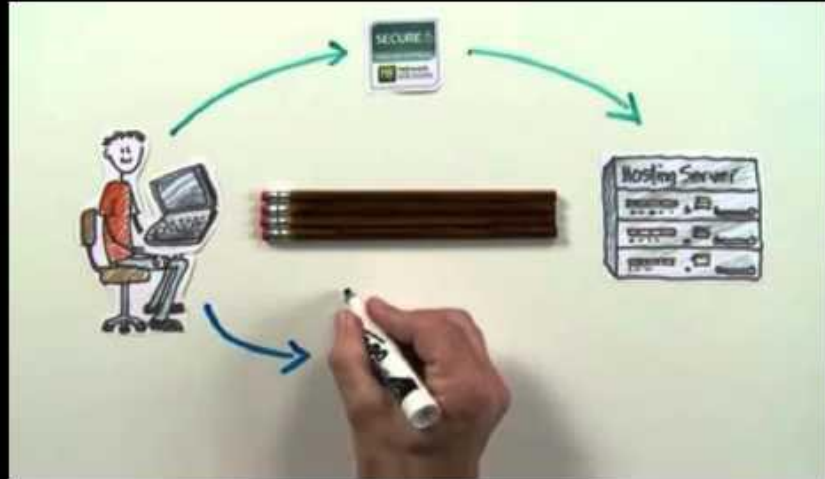- Baseband
- Broadband

# Latency

- The time it takes for a specified sector to be in position under the read/write head
- Delays in communication

# Certificate Authorities

## CA



- Digital certificate that certifies the ownership of a public key by the named owner of the certificate
- CA acts as a trusted third party the owner and the consumer

# Cloud Computing


Service Provider

- A service that provides storage space, automatic synchronization of devices, and access to other resources on the Internet
- Easy access anywhere (email on a larger scale)
- Public cloud - any subscriber
- Private cloud - specific group or organization
- Community cloud - shared among two or more organizations with similar needs
- Hybrid cloud - some combination of cloud types

# Cookies
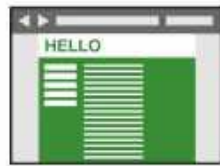


- Sweet pieces of information
- Small files which are stored on the user's computer

# IETF



- Internet Engineering Task Force
- A large open international community or network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet
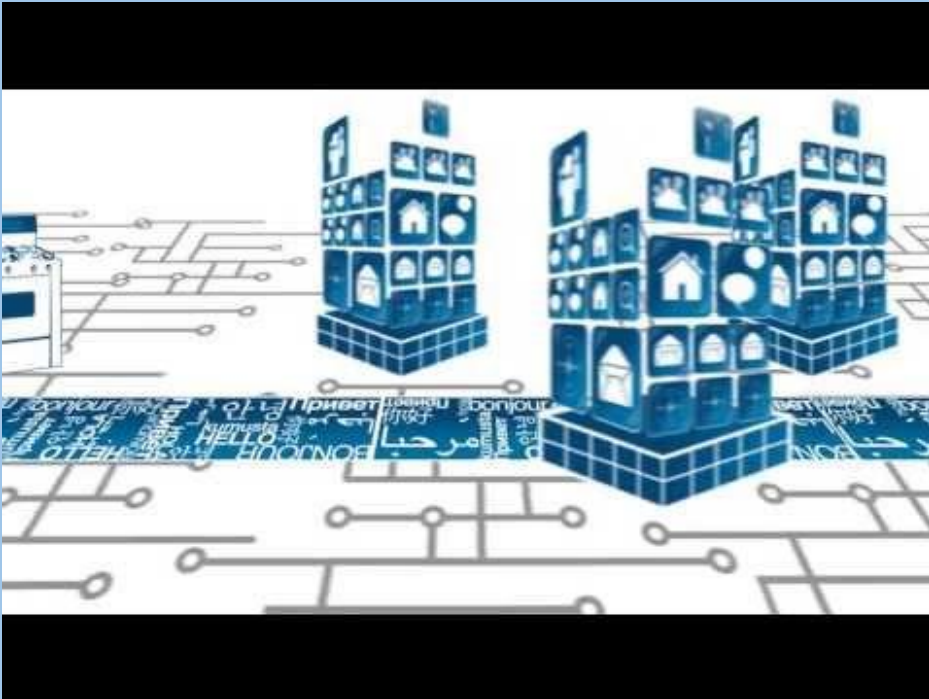
# Crowdsourcing



- A sourcing model in which individuals or organizations obtain goods and services including ideas and finances, from a large, relatively open and often rapidly-evolving group of internet users
- It divides work between participants to achieve a cumulative result

# Creative Commons



(1) Default
(2) Derivative restriction
(3) Commercial restriction
OR
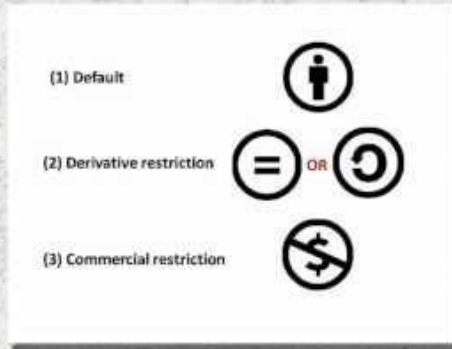
- An American non-profit organization devoted to expanding the range of creative works available for others to build up legally and to share
- Licenses free of charge to the public
- Cannot be used for profit purposes

# DDoS Attack



- An attempt to make an online service unavailable by overwhelming it with traffic from multiple sources
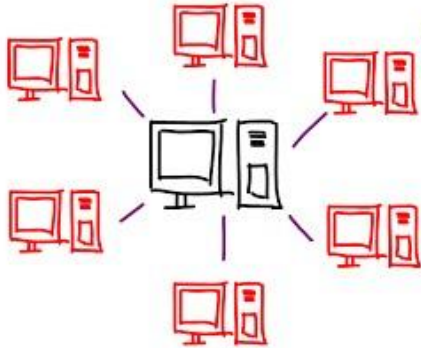- [DoS vs. DDoS attacks](#)

# Digital Divide



- An economic and social inequality with regard to access to, use of, or impact of information and communication technologies
- Bridging the Digital Divide

# Distributed Computing



- A model in which components of a software system are shared among multiple computers, run by a single system, to improve efficacy and performance

# Fault Tolerant Network



- Enables a system to continue operating properly in the event of failure of some of its components like a hardware failure or a routing outage or change

# Firewall



- A gateway machine and software that protects a network from inappropriate access by filtering the traffic it allows
- Enforces an organization's access control policy - a set of established rules specific to an organization
- This is why you can't watch Youtube or Netflix at school

# World Wide Web



- An infrastructure of distributed information combined with with software that uses networks as a vehicle to exchange that information
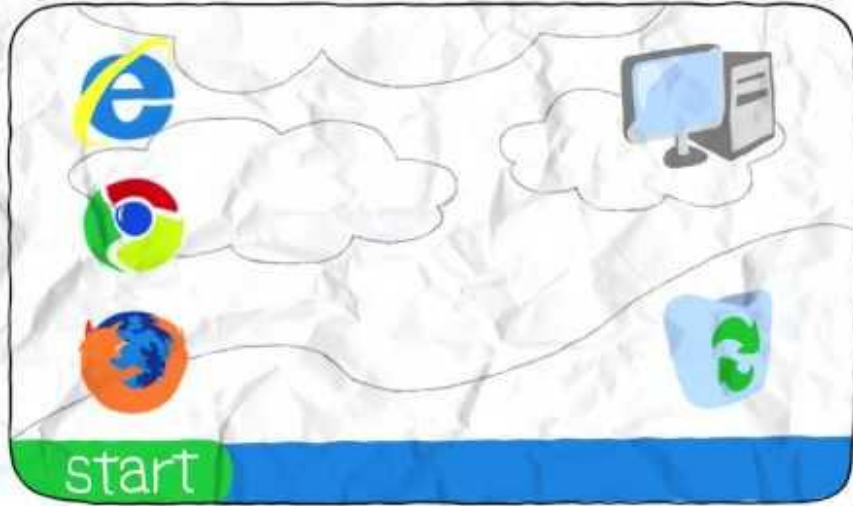- A virtual city that host exchanges of information

# Web Server



- A computer dedicated to responding to requests (from the browser client) for web pages
- Supports client/server model with User Interface

# Web Browser



- A software tool that retrieves and displays web pages

# URL



- Uniform Resource Locator
- A standard way of specifying the location of a web page

# Packets & Routing



- Packet is a unit of data sent across a network
- Packet switching is an approach to network communication in which packets are individually routed to their destination, then reassembled

# Open Source Software

- A computer software with its source code made available with a license in which the copyright holder provides the rights to study, change, and distribute the software to anyone and for any purpose
- Linux, Android, Firefox, Google…

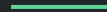# OSI Model


The OSI Model Animation

- Open Systems Interconnection
- A conceptual model that characterizes and standardizes the communication functions of a telecommunication or computing system
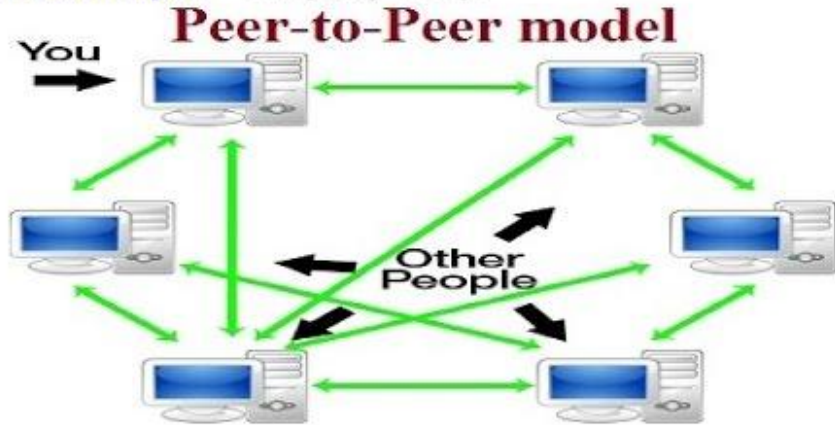
# Online Collaborative Tools
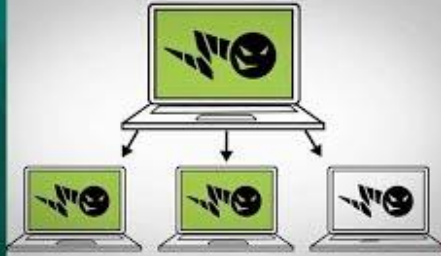


- Tools for collaboration

# Peer-to-peer Network



P2P Network **Fundamental Concepts Explained** with Example - Step by Step

**Peer-to-Peer model**

You

Other People

- Two or more computers are connected via the internet and can share files directly without the need of a central server

# Malware



- Software that is intended to damage or disable computer and computer systems

# Viruses



- A piece of code that is capable of copying itself and corrupting the system or destroying data
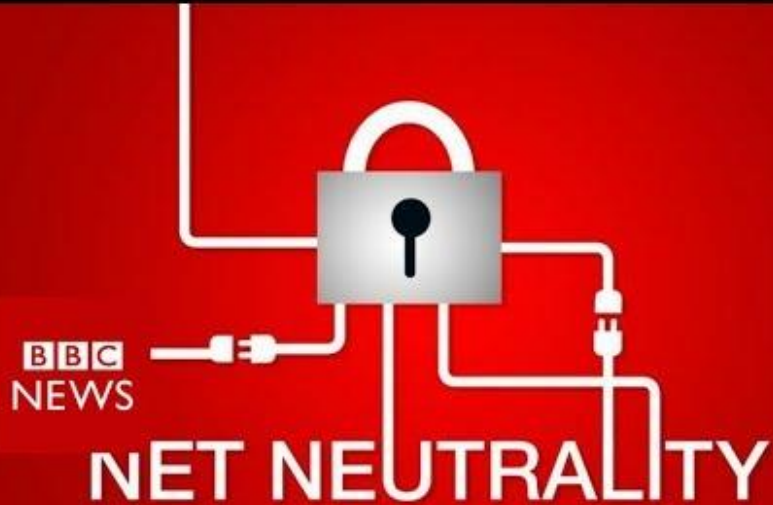
# Proxy Server



- A server that acts as an intermediary for requests from clients seeking resources from other servers
- Increases performance and security
- Blocks malicious traffic or prohibits certain websites
- Logs activity

# Phishing



- Fraudulent through the use of emails

# Net Neutrality



- The principle that Internet service providers should enable access to all content and applications regardless of the source, and without favoring or blocking particular products or websites