

WEB TECHNOLOGY

UNIT 1

INTRODUCTION

COMPUTER NETWORK



- INTERNET
- WWW or Web
- WEB BASED APPLICATIONS
- CLIENT/SERVER MODEL
- TCP
- IP
- TCP/IP protocol

- IP ADDRESS
- MAC ADDRESS
- HYPERTEXT
- HYPERMEDIA
- HTML
- URL



INTRODUCTION TO WEB TECHNOLOGY

- Web technology is the establishment and use of mechanisms that make it possible for different computers to communicate and share resources.
- The World Wide Web is a system of interlinked hypertext documents accessed via the Internet. Web is a huge collection of pages of information linked to each other around the globe.

Web technologies are infrastructural building blocks of any effective computer network:

- Local Area Network (LAN),
- Metropolitan Area Network (MAN)
- Wide Area Network (WAN), such as the Internet.

History of Web

- Internet was developed in 1969 by Advanced Research Projects Agency.
- Internet was initially called ARPANET.
- WWW is created by **Sir Tim Berners Lee** in **1989** at **CERN** in Geneva.
- **In 1990**, the first **text only browsers** were setup and **CERN** scientist could access hypertext files and other information at CERN.

- HTML was based on a subset of the standard generalized markup language (SGML).
- To transfer HTML document to remote sites a new protocol was devised called HTTP (Hyper Text Transfer Protocol).
- In **1993**, there were only about 50 websites world wide.

Protocols governing Web

- **Protocol:** A protocol is a set of rules that is used to communicate applications to each other.
- A protocol is the interface required for communicating the different applications.

Classification:

- a. HTTP**
- b. TCP/IP**
- c. FTP**
- d. SMTP**
- e. TELNET**

- HTTP is a connectionless protocol.
- HTTP is a stateless protocol.
- HTTP is media-independent.

TERMS

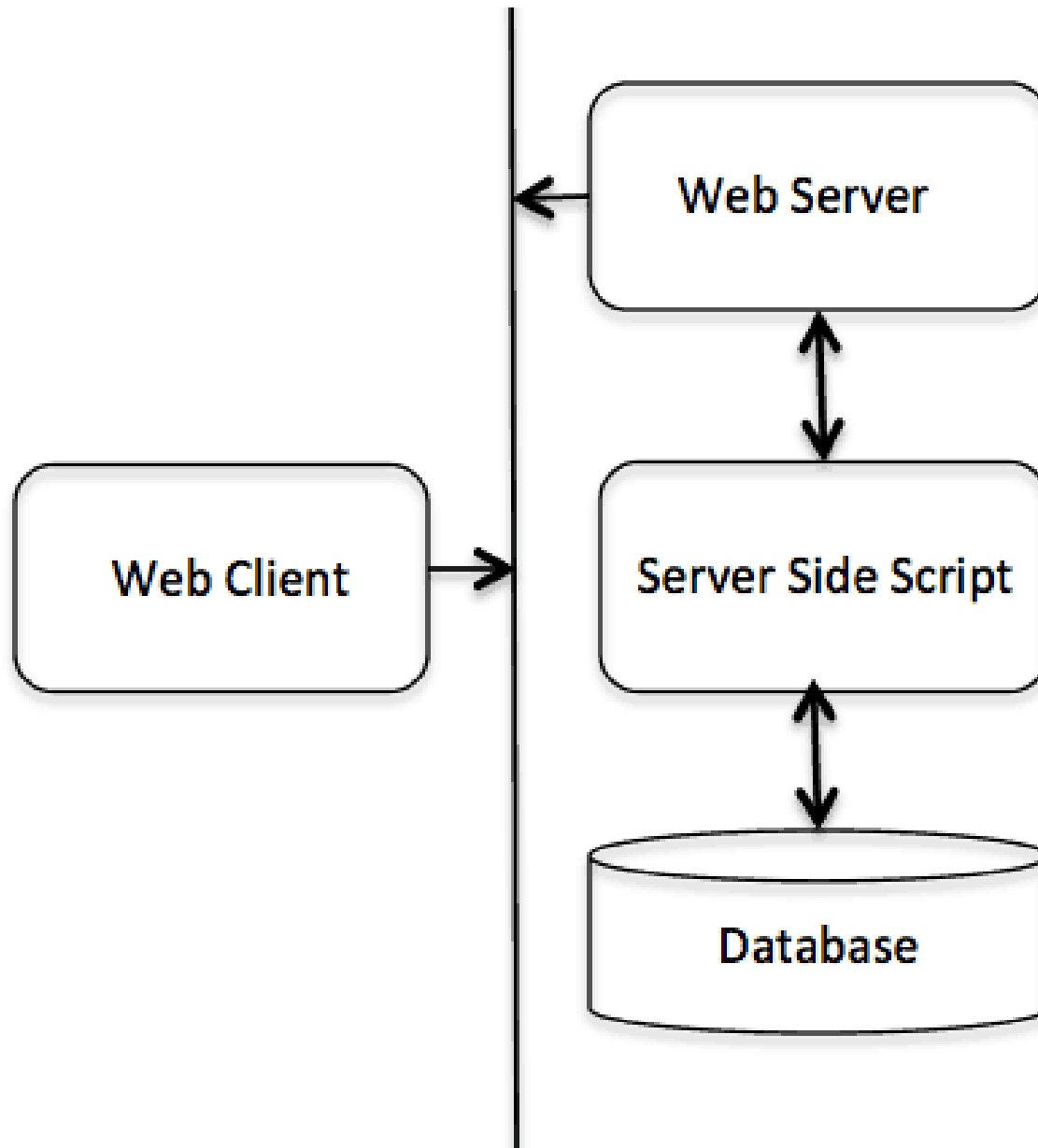
HTTP: HTTP is the primary protocol used to distribute information on the web.

Initial HTTP 0.9 does not allow for **content typing** and does not have provisions for supplying **meta-information**.

Content Typing: To identify the type of data being transferred.

Meta Information: It is supplemental data, such as environment variables that identify the client's computer

Current version is **HTTP 1.0**



HTTP Protocol

HTTP Request Format

- A Request-line
- Zero or more header
- An empty line
indicating the end of the header fields
- Optionally a message-body

HTTP METHODS

- GET
- HEAD
- POST
- PUT

- **TCP/IP:** It is a set of rules that an application can use to package its information for sending across the networks of networks.
- **FTP:** It is used to transfer the files over networks.
- **SMTP:** It is used for exchanging digital messages across the Internet or other computer networks.
- **Telnet:** Telnet lets you remotely log into another system and browse files and directories on that remote system.

Web based applications

- A *web application* or *web app* is any program that runs in a *web* browser. It is created in a browser-supported programming language (such as the combination of JavaScript, HTML and CSS) and relies on a *web* browser to render the *application*.

Types of Web Applications

- message boards,
- language translator,
- online document editing,
- online file conversion,
- internet speed test,
- online maps,
- online file hosting and sharing,
- online file virus scanner,
- online lists

Terms

- Cyber Space
- Cyber Security
- Network Security
- Information Security

CIA

- Confidentiality
- Integrity
- Availability

- Authentication
- Authorization
- Authentication Methods
- Access Control
- Event logging

Cyber Laws

- Cyber law is a term used to describe the legal issues related to use of communication technology, particularly “**cyberspace**” i.e. Internet.
- **Indian and International Cyber Law:** Cyber Laws are formed by the government to prevent the internet crime. These crimes could be **hacking, threat on internet, denial of services etc.** Cyberspace includes **computer, computer networks, internet data, software etc.**

Cyber Laws

i. Data Protection and Privacy Law: This is due to the nature of the internet and amount of information that may be accessed through it, such legislation is critical to protect the fundamental rights of privacy of an individual.

ii. Electronic and Digital Signature Law: This is required so that uniform and standard procedures are established for **authentication of electronics records, EDI, E-Mail.**

iii. Computer Crime Law: due to victim of internet threats.

iv. Telecommunication Law: Approve and supervise the application of fees and rates charged for telecommunication services in accordance with the provision of the applicable law.

v. Intellectual Property Law: This includes **copyright law, trademark law, semiconductor law and patent law** in relation to computer hardware and software.