

IT WORKSHOP I



Web Design

7-Dec-22

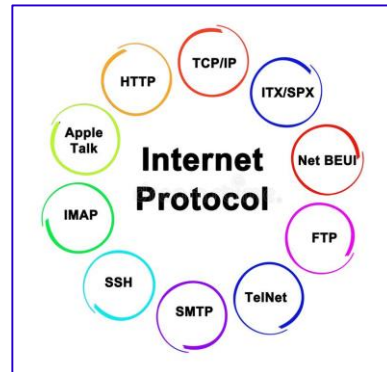


Topics

- Internet and Variants
- IP Address
- WWW
- Webpages and Types
- Website
- Web server and Hosting
- URL
- Web development
- Introduction HTML

Internet

- The internet is the wider network that allows **computer networks around the world** run by companies, governments, universities and other organisations to talk to one another.
- In 1969, four computers clients were connected together via **ARPAnet**.
- **TCP/IP: Transfer Control Protocol/Internet Protocol** is a set of rules that describe how computers can communicate over a network



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Other Variants

- Intranet??
 - An intranet is a **private network** that is contained within an organization.
 - Intranet is usually created and maintained by a **private organization**.
- Extranet???
 - A part of an **intranet that's publicly available mostly through the internet**.
 - An extranet can be viewed as part of a company's **intranet that is extended to users outside the company** like suppliers, vendors, partners, customers, or other business associates.

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- Internet Protocol Address
- to identify the network device connected to the internet
- logical address or software-based
- assigned by the network administrator or Internet Service Provider
- Types of IP addresses:
 - IPv4 Address and IPv6 Address
- IPv4 is a 32-bit (4 bytes) address, and IPv6 is a 128-bits (16 bytes) address.

MAC address??
Port address??

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- IPv4: Ex - 193.32.216.9
- IPv6: Ex - FFFF:F200:3204:0B00

```

Select Command Prompt
Microsoft Windows [Version 10.0.19043.1466]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Victor Paul>ipconfig

Windows IP Configuration

Wireless LAN adapter Local Area Connection* 1:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . :

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix . :
    Link-local IPv6 Address . . . . . : fe80::9487:78cb:1c47:3b09%7
    IPv4 Address. . . . . : 192.168.137.41
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.137.1

Wireless LAN adapter Wi-Fi:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . :

Wireless LAN adapter Local Area Connection* 11:

    Connection-specific DNS Suffix . :
    Link-local IPv6 Address . . . . . : fe80::9c8b:3412:545e:7404%18
  
```

```

Select Command Prompt
C:\Users\Victor Paul>ipconfig/all

Windows IP Configuration

    Host Name . . . . . : DESKTOP-5680P66
    Primary Dns Suffix . . . . . :
    Node Type . . . . . : Mixed
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled. . . . . : No

Wireless LAN adapter Local Area Connection* 1:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . :
    Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
    Physical Address. . . . . : A0-D3-7A-F8-16-86
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes

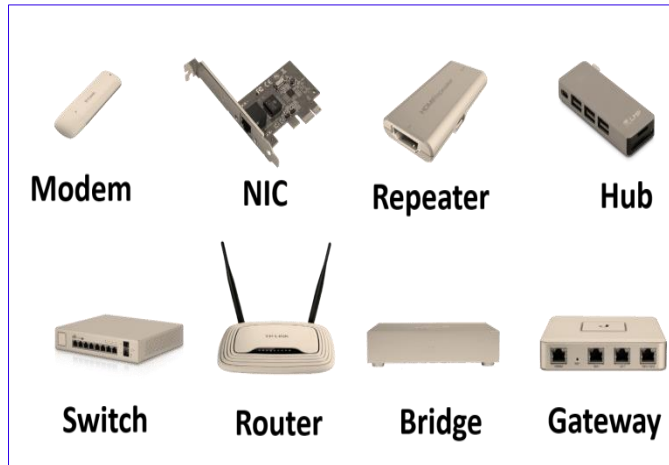
Ethernet adapter Ethernet:

    Connection-specific DNS Suffix . :
    Description . . . . . : Realtek PCIe GbE Family Controller
    Physical Address. . . . . : 80-CE-62-39-90-41
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::9487:78cb:1c47:3b09%7(Preferred)
    IPv4 Address. . . . . : 192.168.137.41(Preferred)
    Subnet Mask . . . . . : 255.255.255.0
  
```

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Network Devices

- Hub
- Repeater
- Switch
- Router
- Bridge
- Gateways



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World Wide Web

- WWW or W3
- The web is a way to view and share information over the internet.
- That information, be it text, music, photos or videos or whatever, is written on web pages served up by a web browser.
- The Web is a collection of different websites/ webpages that can be accessed through the Internet.
- In other words, a system of interlinked hypertext documents accessed via the Internet.

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World Wide Web

WEB 1.0	WEB 2.0	WEB 3.0
1996 – 2004	2004 -2016	2016+
The Hypertext Web	The Social Web	The Semantic Web
Tim Berners Lee	Tim O'Reilly, Dale Dougherty	Tim Berners Lee
Read Only	Read and Write Web	Executable Web
Millions of User	Billions of User	Trillions+ of Users
Echo System	Participation and Interaction	Understanding self
One Directional	Bi-Directional	Multi-user Virtual environment

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W3C

- The **World Wide Web Consortium (W3C)** is the main **international standards organization** for the World Wide Web.
- Founded in 1994 and currently led by **Tim Berners-Lee**, the consortium is made up of member organizations that maintain full-time staff working together in the development of standards for the WWW.

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Internet Vs WWW

- The Internet is the infrastructure and the Web is a service on top.
- The Web is the most widely used part of the Internet.

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Webpages

- A document which can be **displayed in a web browser**.
- Webpages may **contain hypertexts**
- When was the first web page created?

The first web page was created at CERN by Tim Berners-Lee on August 6, 1991.

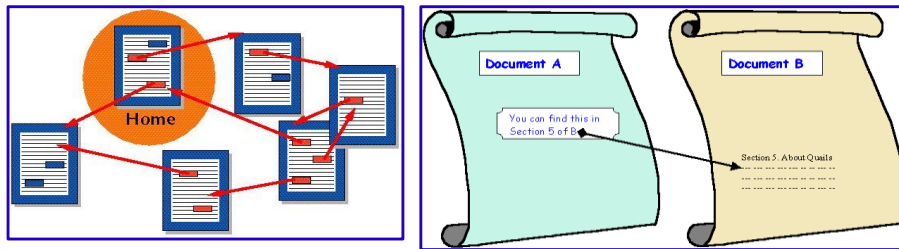
You can visit and browse the first website and the first web page at the address.

info.cern.ch

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HyperText and HyperLink

- It is a **jump point** that allows a visitor to jump from a **place in a Web page** another place, either in the same Web page or another Web page, document, or binary object on the Web.
- The jump joint can be a,
 - **Text**
 - **Clickable objects like images**



Webpages Types

- **Static webpage**
 - Static websites are ones that are **fixed and display the same content for every user**
- **Dynamic Webpage**
 - webpages are created dynamically, **can display different content and provide user interaction** based on the user request.
- Static pages are easier to create, while dynamic pages require more work.

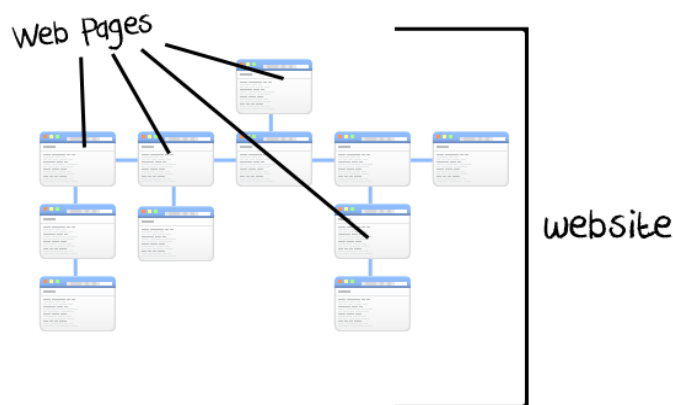
Websites

- A website is a **collection of several interrelated webpages linked together using hyperlinks**.
- A set of related web pages accessed under a **single domain name**, typically produced by a single person or organization.
- A website is a collection of related web pages, including multimedia content, typically identified with a common domain name, and **published on at least one web server**
- *While a webpage is a page from a book, a website is the book itself.*

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Websites

- Hypertext document is commonly called **webpage or website???**



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What is Web server?

- Every Website sits on a computer system known as a **Web server**.
- The primary function of a web server is **to store, process and deliver web pages** to clients.
- A web server is a computer system that processes requests via HTTP
- The communication between client and server takes place using the **Hypertext Transfer Protocol (HTTP)**
- This server is always connected to the internet

DNS, FTP, File Server, Email servers

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Web Hosting

- A web hosting is a service provided by companies (the web host) that **allows individuals and organizations to make their website accessible via the World Wide Web**.
- Website content such as **HTML, CSS, and images** has to be housed on a server to be viewable online.
- Web host example: godaddy, HostGator, Dreamhost

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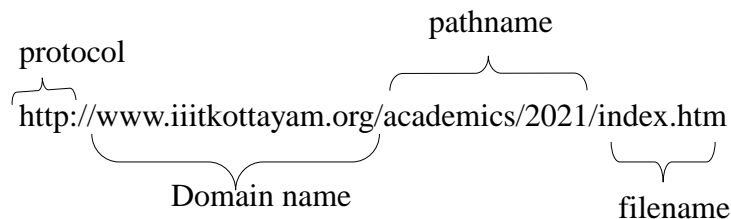
Uniform Resource Locators (URL)

- A Uniform Resource Locator (URL) is used to address a **document on the Web**.
- URL is a four-part addressing scheme that tells the Web browser:
 - What **transfer protocol** to use for transporting the file
 - The **domain name** of the computer on which the file resides
 - The **pathname** of the folder or directory on the computer on which the file resides
 - The **name of the file**

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Uniform Resource Locators (URL)

- Structure of a Uniform Resource Locators



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Web Development

- Web development is the **process of building websites and applications for the internet**, or for a private network known as an intranet.
- Web development can be broken down into three layers:
 - Client-side (frontend),
 - Server-side (backend) and
 - Database technology

Amazon, Flipkart, FB, and all recent Websites...

Example 3 Layers

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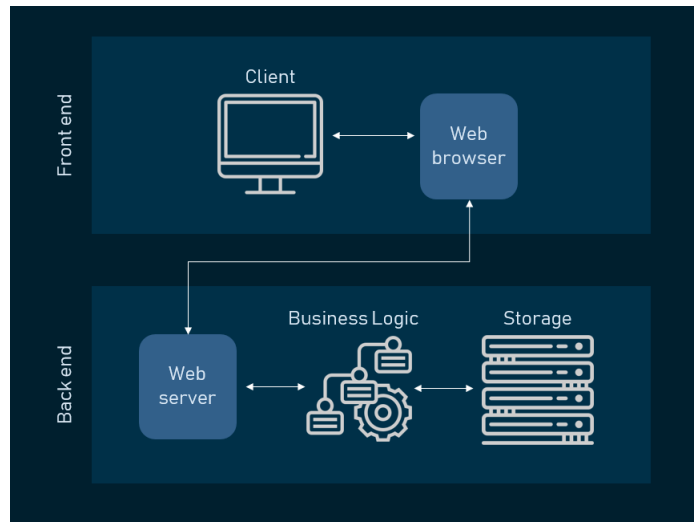


Web Development

- Front-end development is the art of **creating sites and web applications** that render on the client-side.
- Most front-end web developers use **HTML, CSS and JavaScript**.
- Server side development is creating **scripts on a web server** which produce a response customized for each user's (client's) request to the website.
- Dynamic webpage creation and business logics are associated with this layer.
- Server-side languages such as **PHP, Ruby, Python and Java** to build the application

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Web Development



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Web Development

Web Designer Vs Web Developer

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Web Development

Client Side Scripting

- HTML
- CSS
- Java Script
- XML

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HTML

- HyperText Markup Language
- The **primary scripting language** for developing web pages is HTML.
- HTML allows us to write formatting instructions to **describe how a web page should appear** in a browser's window.
- Web browsers **interpret the formatting instructions** specified for the web page and display the web page on the screen.
- HTML provides simple mechanisms for formatting text, creating links and lists, inserting images, embedding audio and video etc.

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HTML

- It can also include **CSS to specify the style** and layout of text and other components.
- Scripts written in various languages such as JS and VBScript may also be used **to change the appearance of web pages and make them interactive**.
- HTML documents are written using HTML **“tags”** embedded in angular brackets.
- The set of tags that we can use to write HTML documents is defined by the world wide web consortium (**W3C**).
- W3C has published many standards for HTML

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HTML

```

<HTML>

<HEAD>
    <TITLE> My web page </TITLE>
</HEAD>

<BODY>
    Content of the document
</BODY>

</HTML>

```

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- The HTML document is divided into two major parts:
 - HEAD: contains information about the document:
 - Title of the page (which appears at the top of the browser window)
 - JavaScript and Style sheets generally require statements in the document Head
 - BODY: Contains the actual content of the document
 - This is the part that will be displayed in the browser window

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End

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