UNIT I.

AN OVERVIEW OF THE WEB

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UNIT TOPICS

WEB DEVELOPMENT

UNIT TOPICS

01

THE INTERNET AND THE WORLD WIDE WEB

02

TYPES OF WEBSITES

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WEB DEVELOPMENT LIFE CYCLE

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WEB DEVELOPMENT LANGUAGES

05

TOOLS NEEDED FOR CREATING WEB PAGES

Intended Learning Outcomes

1.
define the websites and explain the purpose and characteristics of each type of website;

2.
list and define key terms such as Internet, World Wide Web, Web Browsers, URLs, Web Servers, and Internet Service Providers;

3
enumerate the phases of the Web Development Life Cycle (WDLC);

4
explain the role of HTML in Structuring content and CSS in styling web pages; and

5
list common tools used for web development (e.g., code editors, browsers, and validation tools)

The Internet and the World Wide Web (WWW)

What is the Internet?

- The **Internet** is a massive network of networks, a networking infrastructure. It connects millions of computers together globally, forming a network in which any computer can communicate with other computers as long as they are both connected to the Internet. Information can travel via the internet via a variety of languages called **Protocols.**

The Internet

- The **Internet** is a global network that connects billions of devices and allows for the seamless exchange of information.

- In 1969, the first message was transmitted over **ARPANET,** a landmark moment that laid the foundation for today's global network.

The Role of Internet Service Providers (ISP)

Internet Service Providers (ISPs) are critical entities that provide users access to the Internet. They maintain a permanent connection to the Internet backbone—a central, high-capacity network infrastructure that connects various regional networks.

Here are several major ISPs offer diverse broadband solutions:

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Here are several major ISPs offer diverse broadband solutions:

- **PLDT**
- **GLOBE**
- **SKY BROADBAND**
- **EASTERN TELECOM**
- **CONVERGE ICT**

What is the World Wide Web?

- The **World Wide Web** or simply **Web**, is a way of accessing information over the medium of the internet. It is an information-sharing model that is built on top of the internet. The Web uses the **HTTP protocol**, only one of the languages spoken over the internet, to transmit data.

- Web services, which use HTTP allow applications to communicate in order to exchange business logic and use the web to share information.

The Internet and the World Wide Web

- Many people use the terms **Internet** and **World Wide Web** interchangeably, but in fact, the two terms are not synonymous.
- The Internet and the Web are two separated but related things.
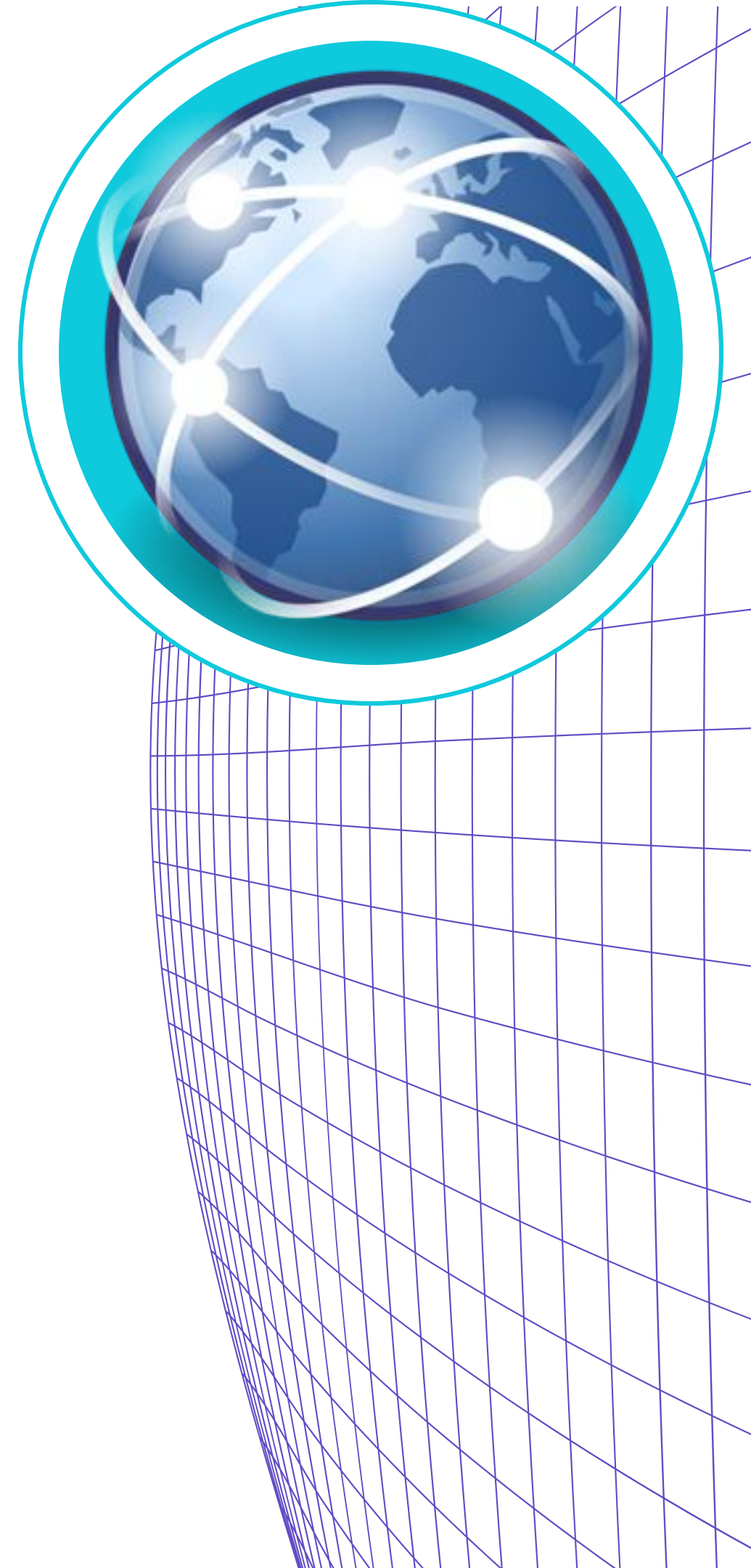
Types of Websites

Categories of Websites

Internet Website

Intranet Website

Extranet Website

Categories of Websites

Category	Description	Purpose	Access Level
Internet	A global network accessible to anyone worldwide using an internet connection.	Publicly share information, services, or resources.	Open to everyone with an internet connection.
Intranet	A private network designed for internal use within an organization.	Facilitate communication, collaboration, and data sharing.	Restricted to authorized members of the organization (employees, members).
Extranet	A private network that extends limited access to external users (partners, vendors, etc.).	Enable collaboration with external stakeholders securely.	Restricted to specific external and internal users with proper credentials.

HERE ARE SOME COMMON TYPES OF WEBSITES

Personal Websites

Business Websites

E-commerce Websites

Educational Websites

Portfolio Websites

Blog Websites

News and Media Websites

Community and Forum Websites
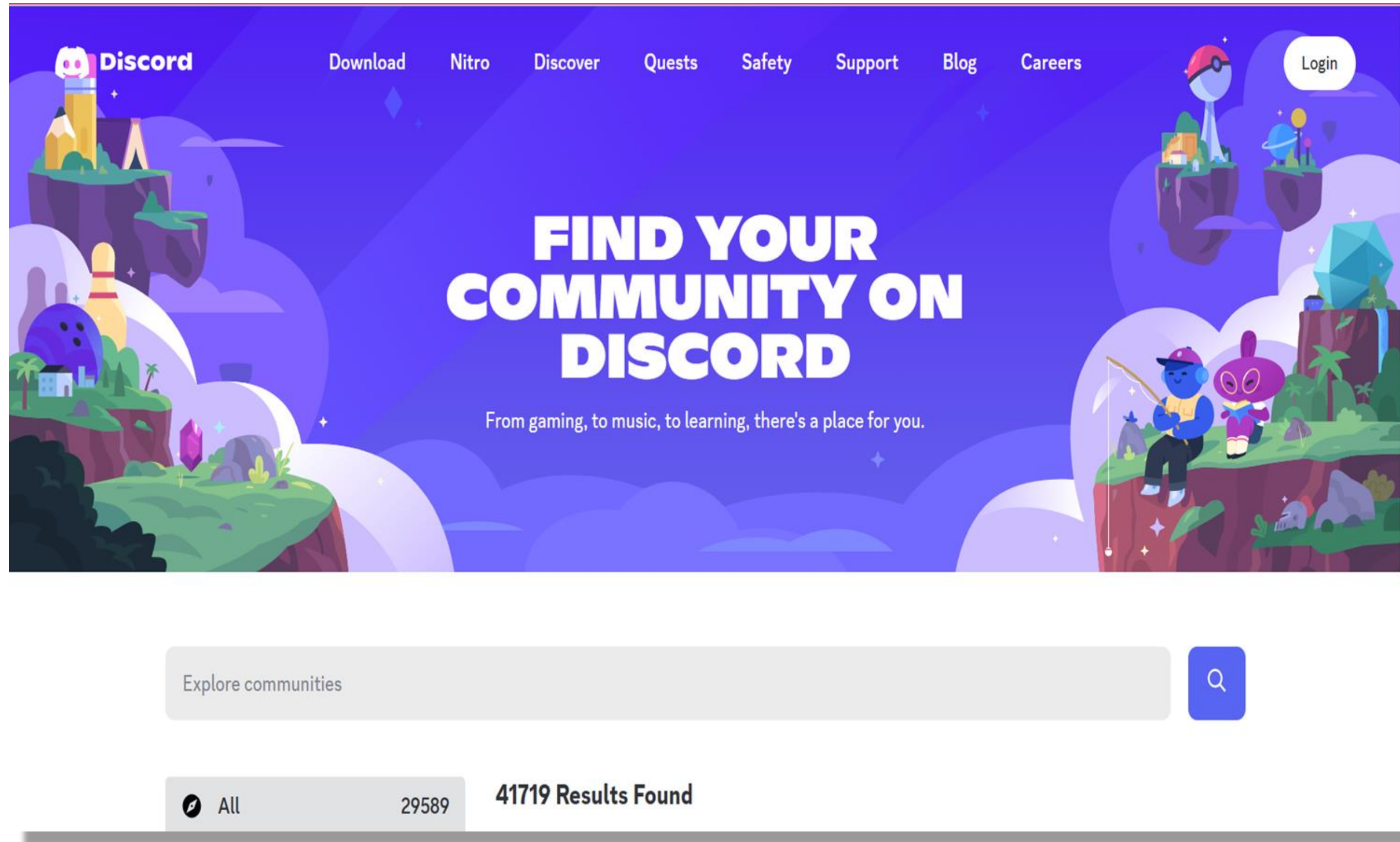
Nonprofit Websites
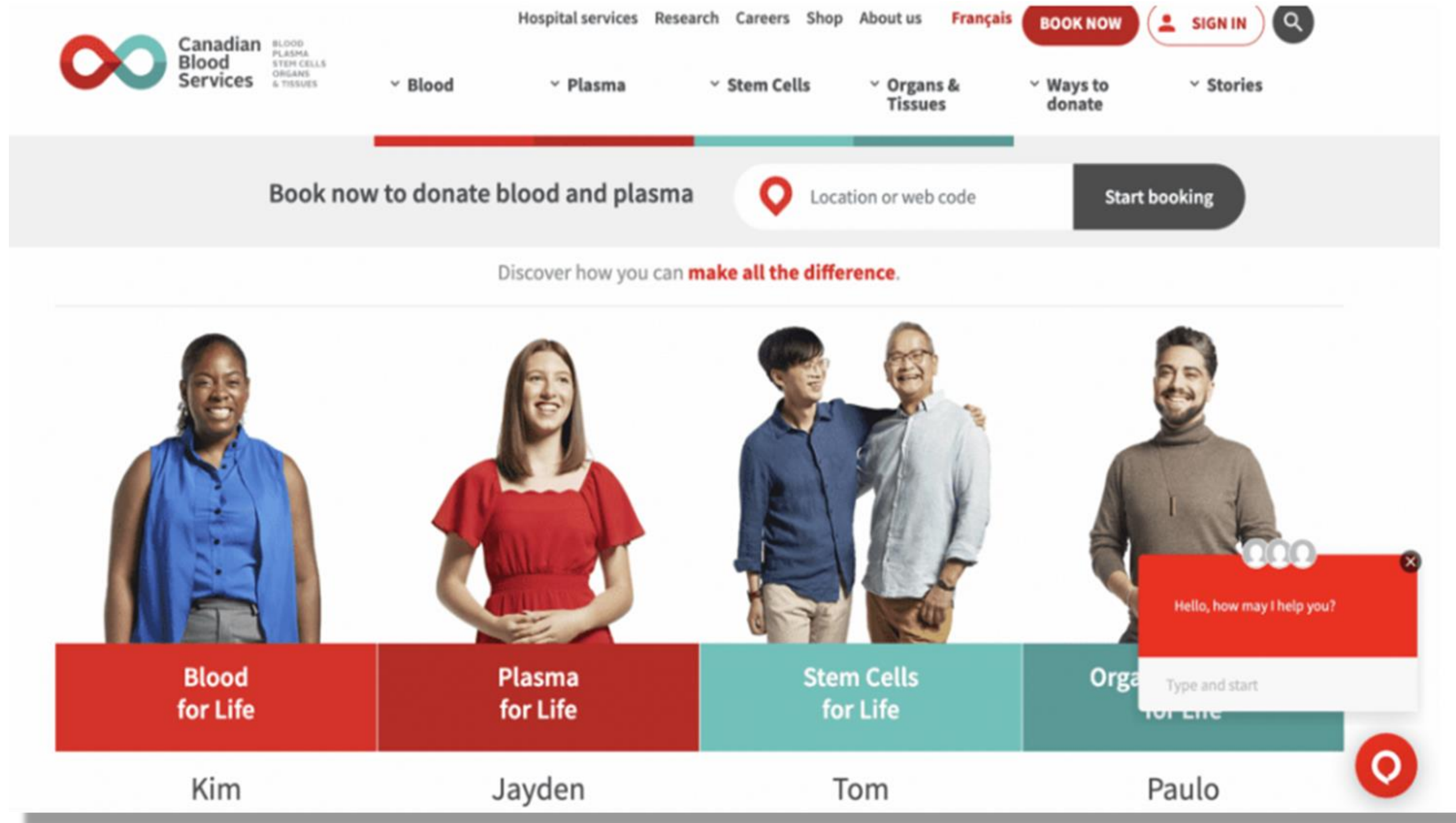
Entertainment Websites
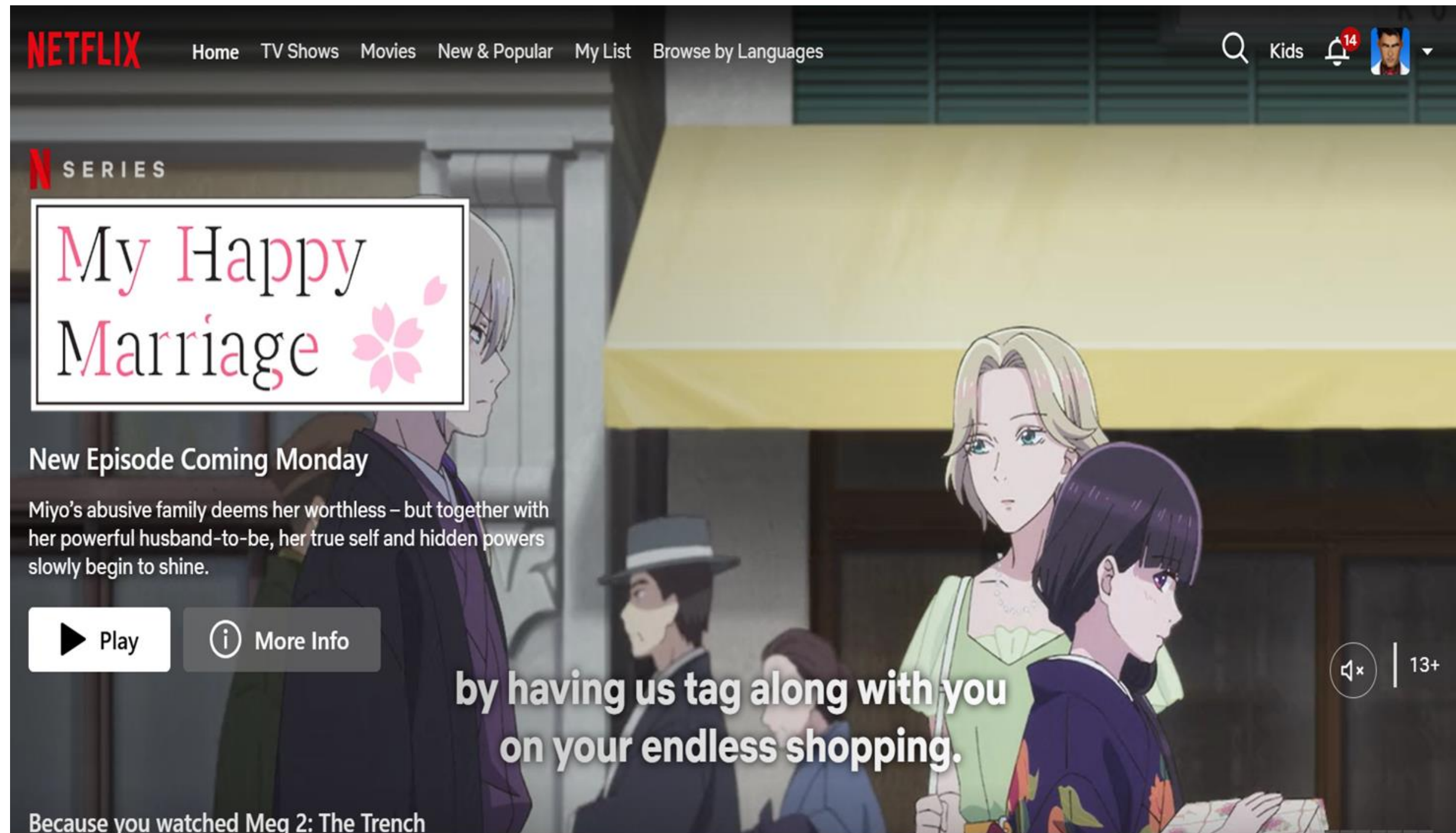
BUILDING A WEB PAGE

Web Browsers

•A **Web Browser** or simply **Browser** is a software application used to **locate, retrieve and display content on the World Wide Web**, including web pages, images, videos and other files.

•As a **client/server model,** the **browser is the client** that runs on a computer and contacts the web server to **request for information. The web server sends the information back** to the browser which displays the results on the computer or other internet enabled device that supports a browser.
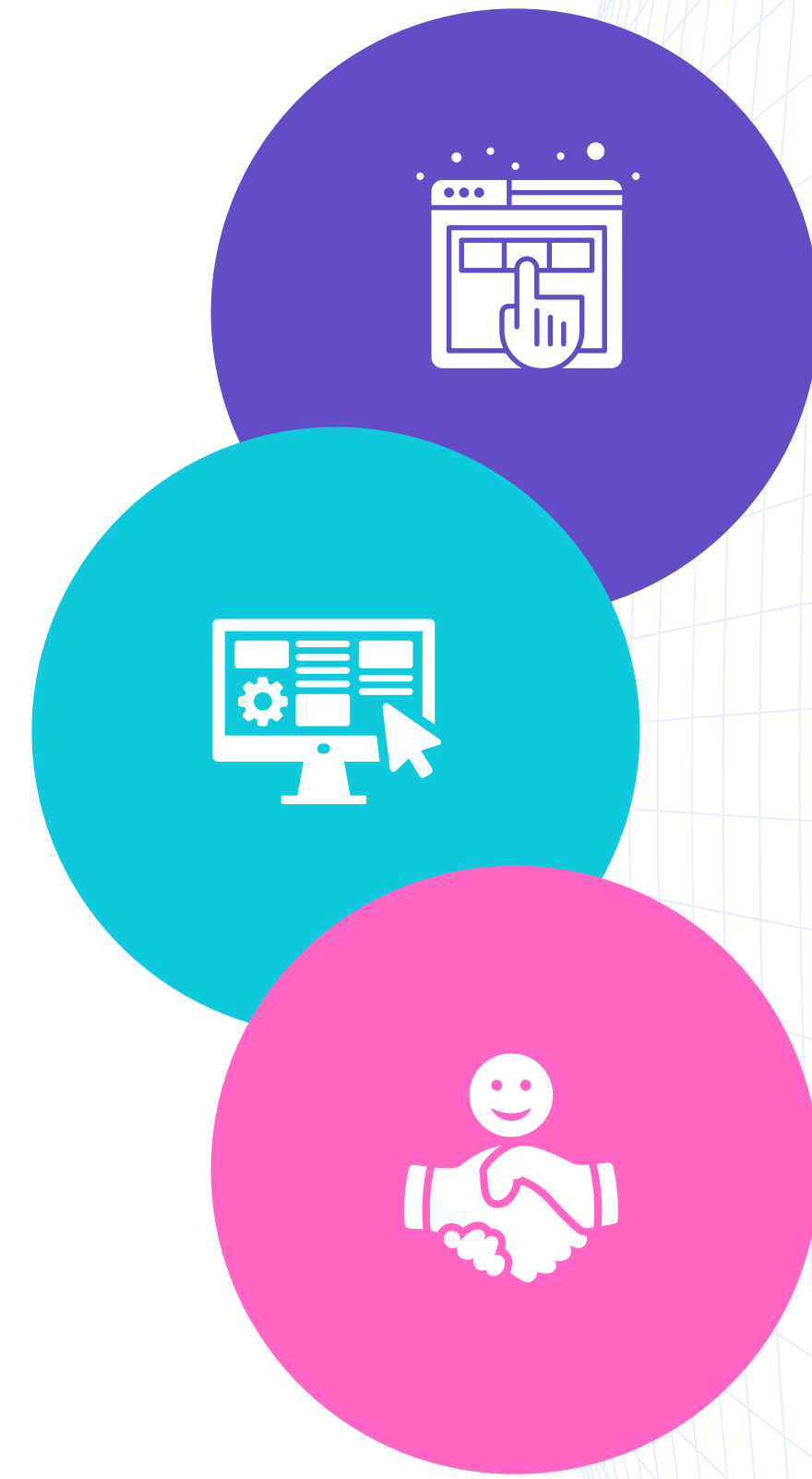
Popular Web Browsers

- MOZILLA FIREFOX
- GOOGLE CHROME
- OPERA BROWSER
- MICROSOFT EDGE
- SAFARI BROWSER
- MAXTHON BROWSER
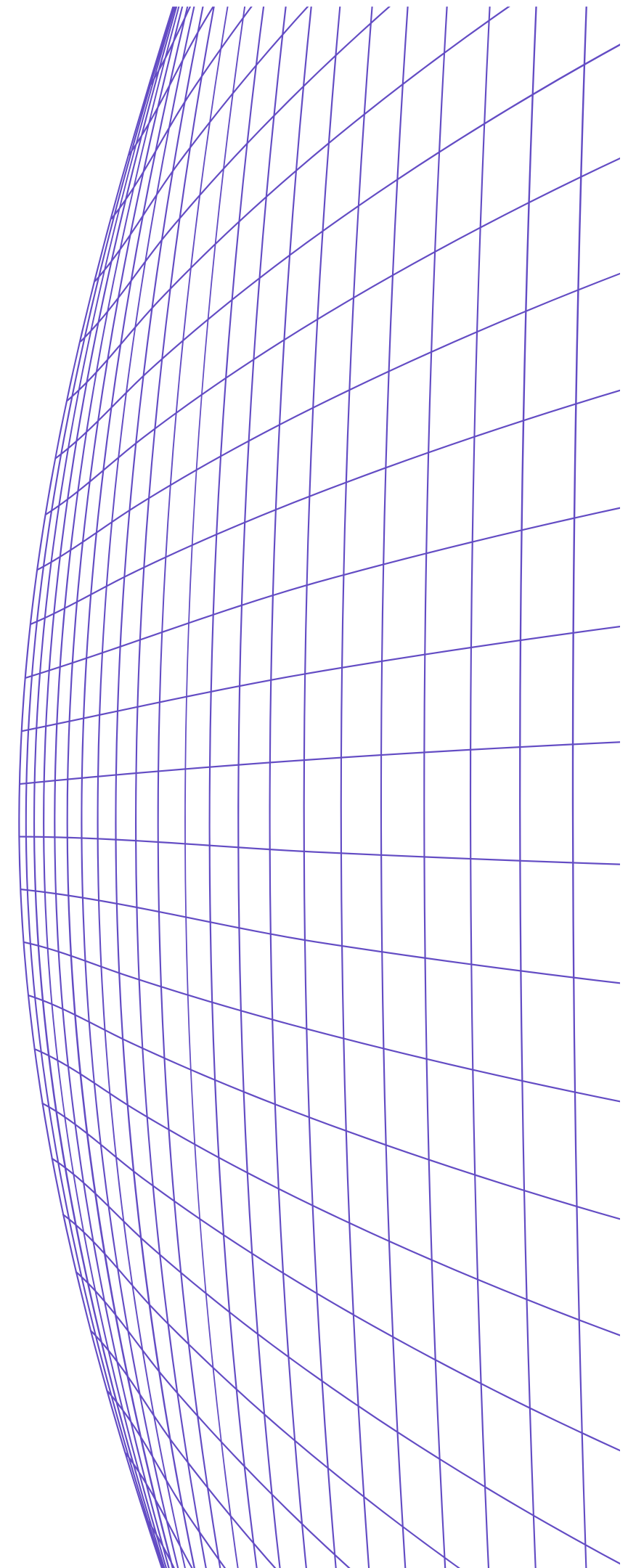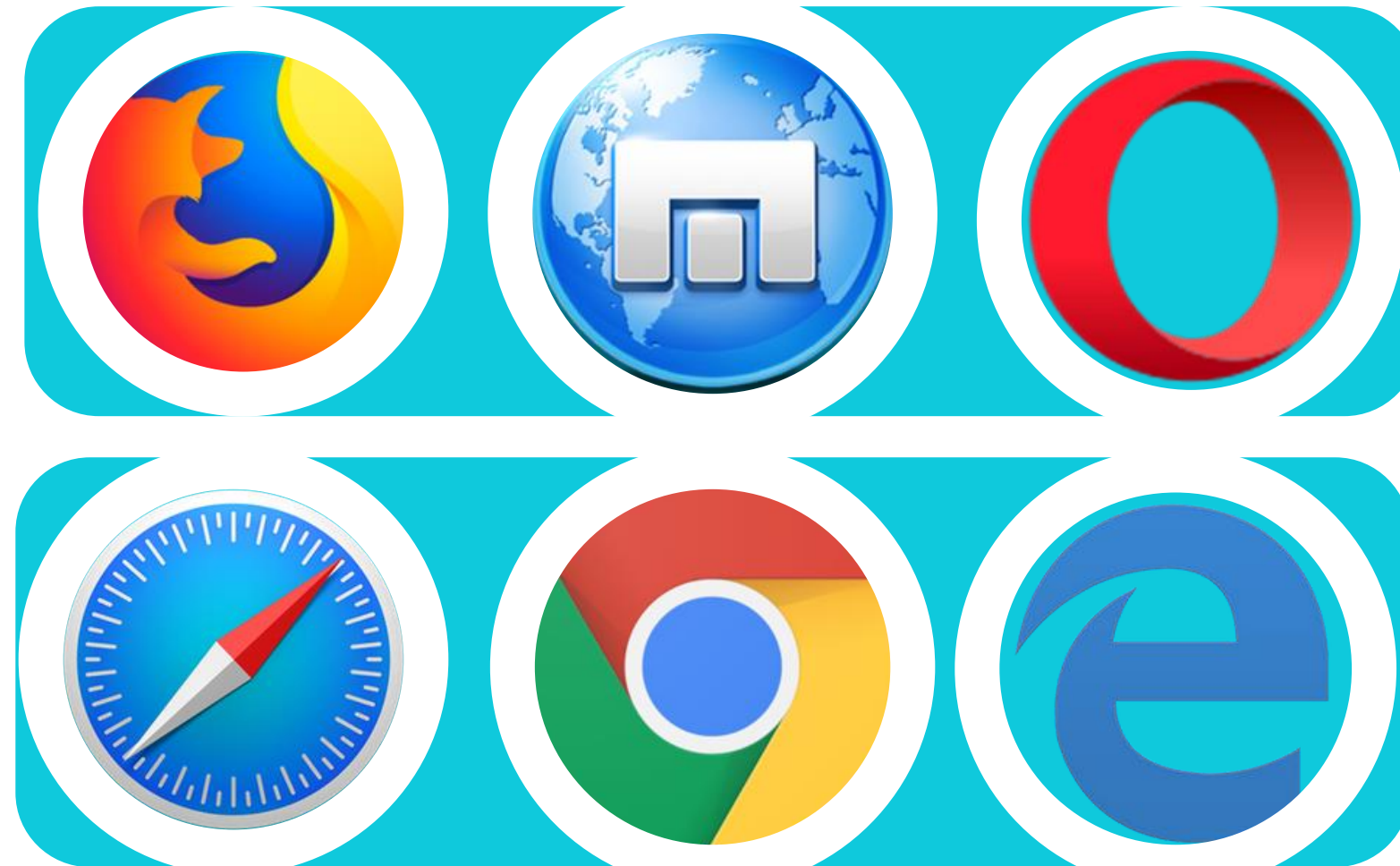
Uniform Resource Locator

•A **Uniform Resource Locator (URL)** is the address used to access a specific resource on the internet. It acts as a reference to a web page, file, or service, guiding users and web browsers to the desired location.

A URL is composed of several components:

PROTOCOL

DOMAIN NAME

PATH

QUERY STRING

FRAGMENT IDENTIFIER

Protocol

Specifies the method used to **access the resource.**
Common protocols include **http://** and **https://** (for secure connections).
For example, https:// ensures data is encrypted for secure communication.

Domain Name:

Indicates the server's address where the resource is hosted. It often includes the website's name and a domain suffix (e.g., .com, .org, .edu).
For instance, www.google.com is a **domain name.**

Domain Extensions

> **.com – Commercial Site**

> **.gov – Government Site**

> **.edu – Educational Institution Site**

> **.net – Network Site**

> **.org – Organizational Site**

> **.biz – Business Site**

> **.mil – Military Site**
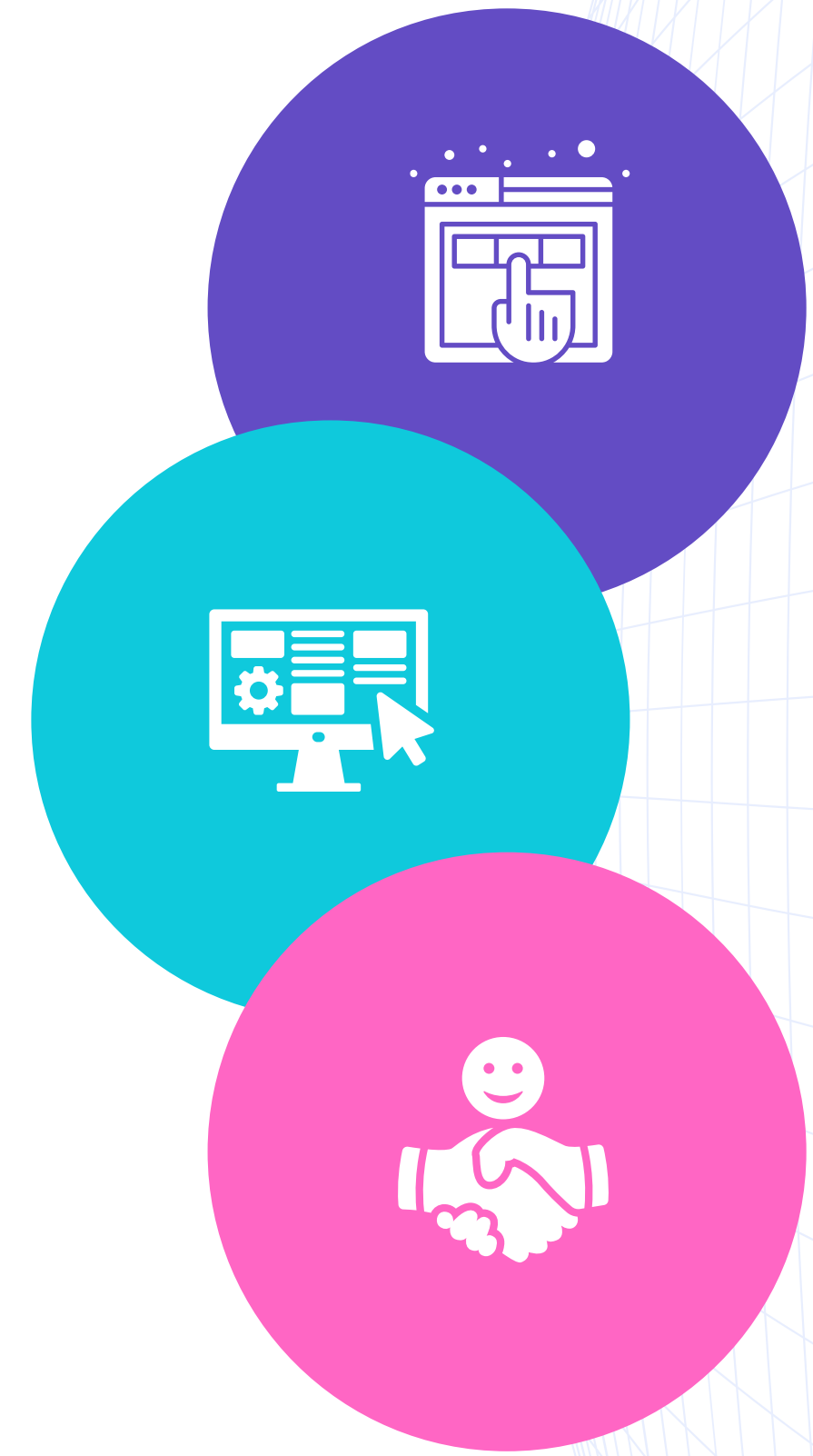
Path

Specifies the **exact location** of the resource within the server. It often includes directories and file names.

For example, /about-us points to a specific page on the website.

Query String

Used to pass **additional information or parameters to the server**, often for search queries or dynamic content.
It follows a **?** and consists of key-value pairs, like
?search=example.

Fragment Identifier

Refers to a **specific section within a web page**, usually indicated by a **#**.
For example, **#section2** jumps to a particular part of the page.

https://www.example.com/products?category=books#bestsellers

Web Servers

Web Servers are specialized computers that **store and serve web pages to users upon request**. Each server is identified by an IP address and often a domain name (e.g., Google.com).

(1) User issues URL from a browser
http://host:port/path/file

(2) Browser sends a request message
GET *URL* HTTP/1.1
Host: *host:port*
....
....

(3) Server maps the *URL* to a file or program under the document directory.

(4) Server returns a response message
HTTP/1.1 200 OK
....
....
....

(5) Browser formats the response and displays

Client (Browser)

HTTP (Over TCP/IP)

Server (@ *host:port*)
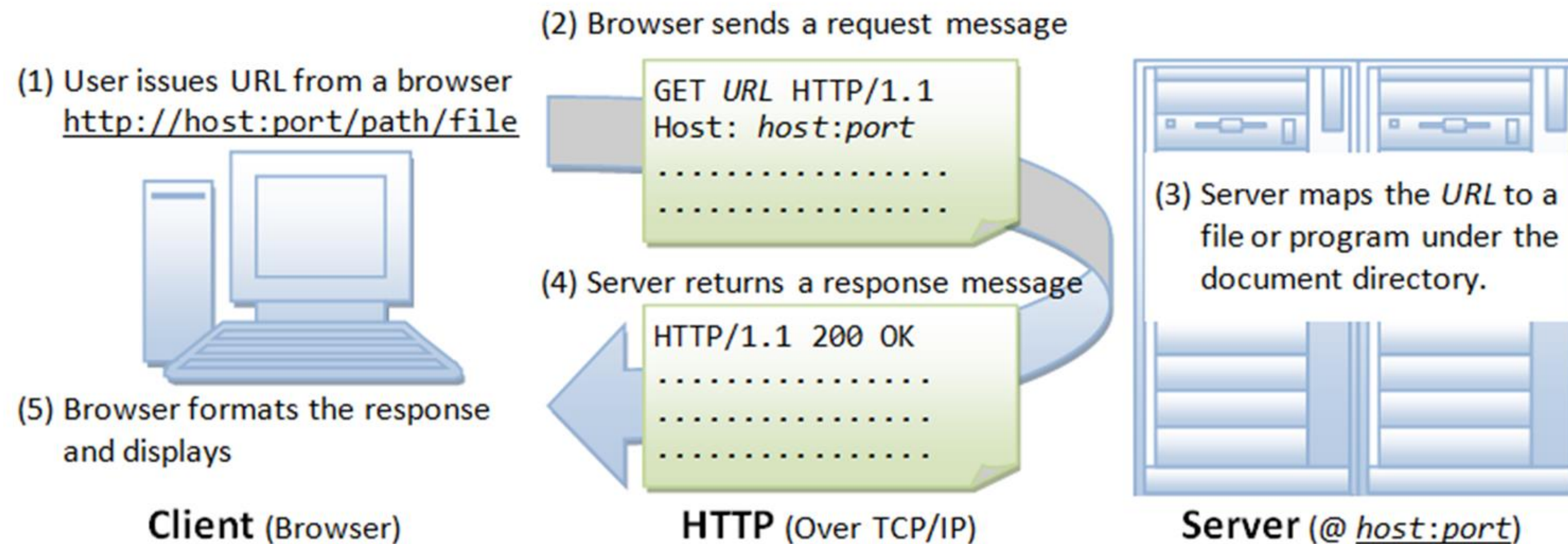
Web Development Life Cycle

Web Development Life Cycle

The Web Development Life Cycle is a systematic process used to develop web pages, ensuring they meet user needs and function effectively.

- PLANNING
- ANALYSIS
- DESIGN
- TESTING
- IMPLEMENTATION
- PUBLISHING
- MAINTENANCE
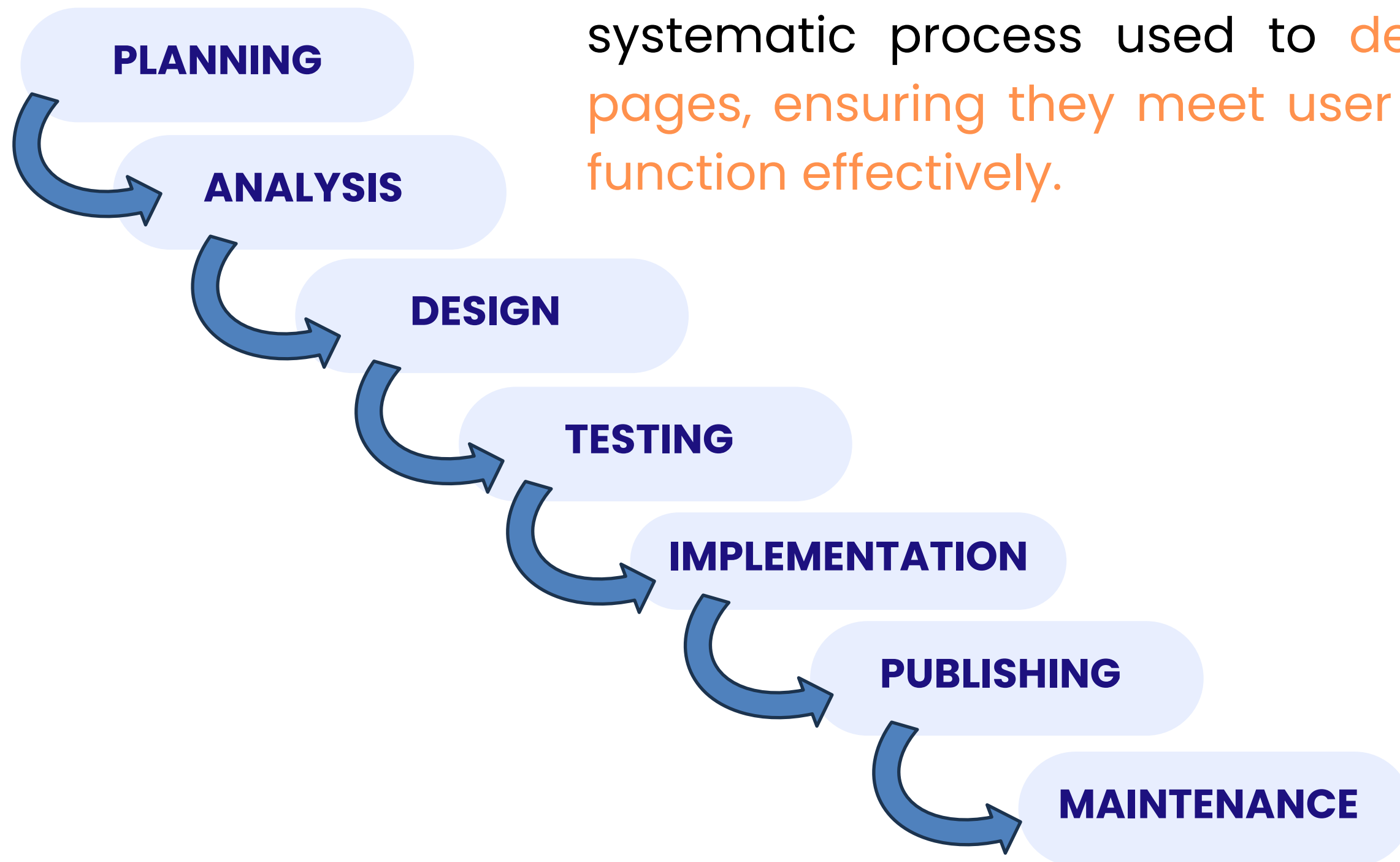
Web Development Languages

Hypertext Markup Language

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications.

Cascading Style Sheets

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language like HTML.

How can we apply CSS to a Web Page?

- Inline CSS
- Internal CSS
- External CSS
- CSS Frameworks

Inline CSS

- **Inline CSS** is used for applying style to a particular HTML Tag.
- The **style** attribute is used to style a particular HTML Tag.
- Least recommended styling method because of the difficulty it brings in managing larger websites.
- Useful for testing and previewing changes

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Tools Needed for Creating Web Pages

Text / Source Code Editor

- A **Text Editor** is a type of computer program that edits plain text. **Microsoft Notepad** is readily available in all devices running Windows Operating Systems.
- A **Source Code Editor** is a text editor program designed specifically for editing source code of computer programs by programmers. **Sublime Text** and **Notepad++** are some of the top source code editors available for web development.

Other tools

- **Code Editors**: Tools like Visual Studio Code, Sublime Text, or Atom provide environments for writing and editing code, often with features like syntax highlighting and code completion.
- **Web Browsers**: Essential for testing and viewing web pages during development. Tools like Chrome and Firefox also offer developer tools for debugging and analyzing web performance.
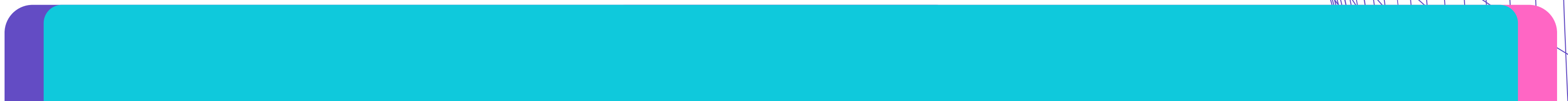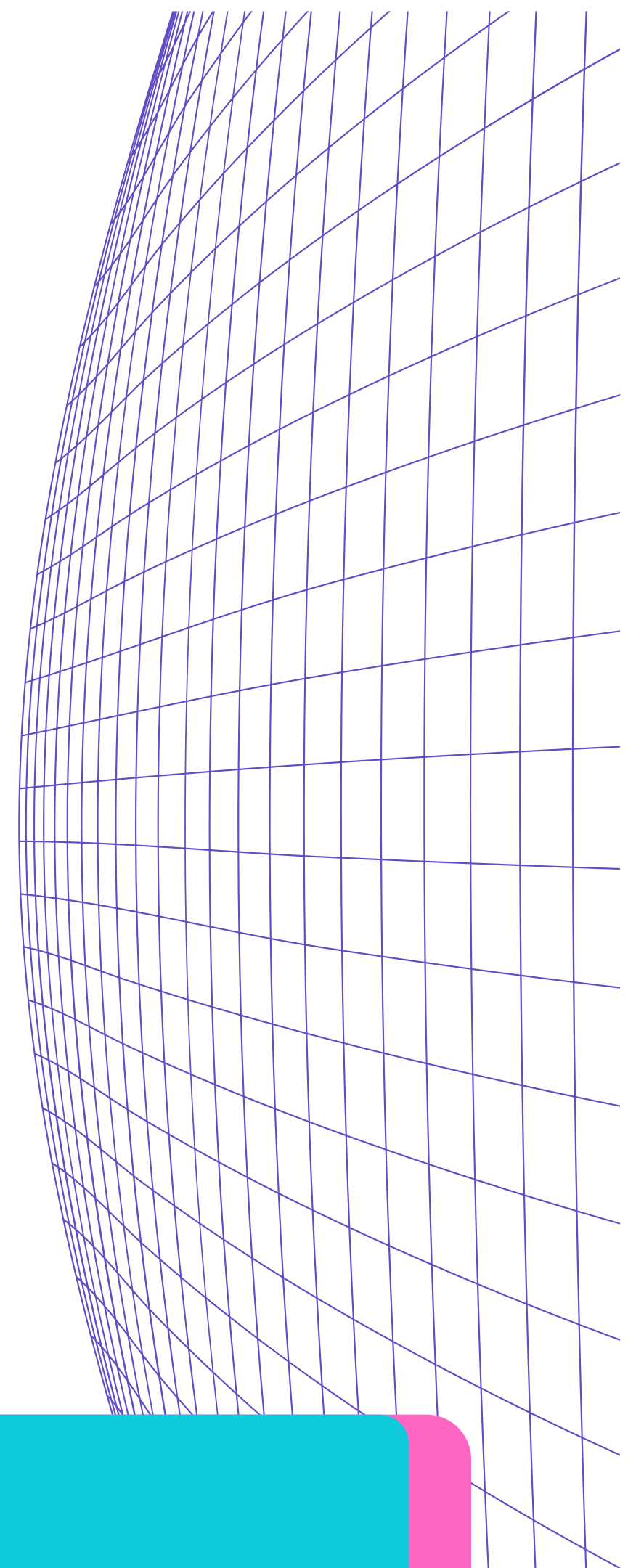
Other tools

- **Version Control Systems (e.g., Git)**: Track changes in code, manage versions, and collaborate on projects, ensuring smooth teamwork and project management.
- Graphic Design Tools (e.g., Adobe Photoshop, Canva): Help in creating visual elements like logos, images, and layouts for web pages.
- **Validation Tools (e.g., W3C Validator)**: Check code for adherence to web standards, ensuring compatibility and accessibility.
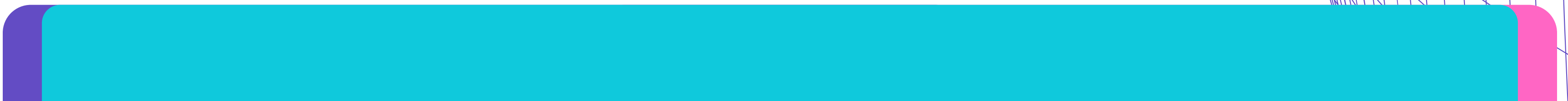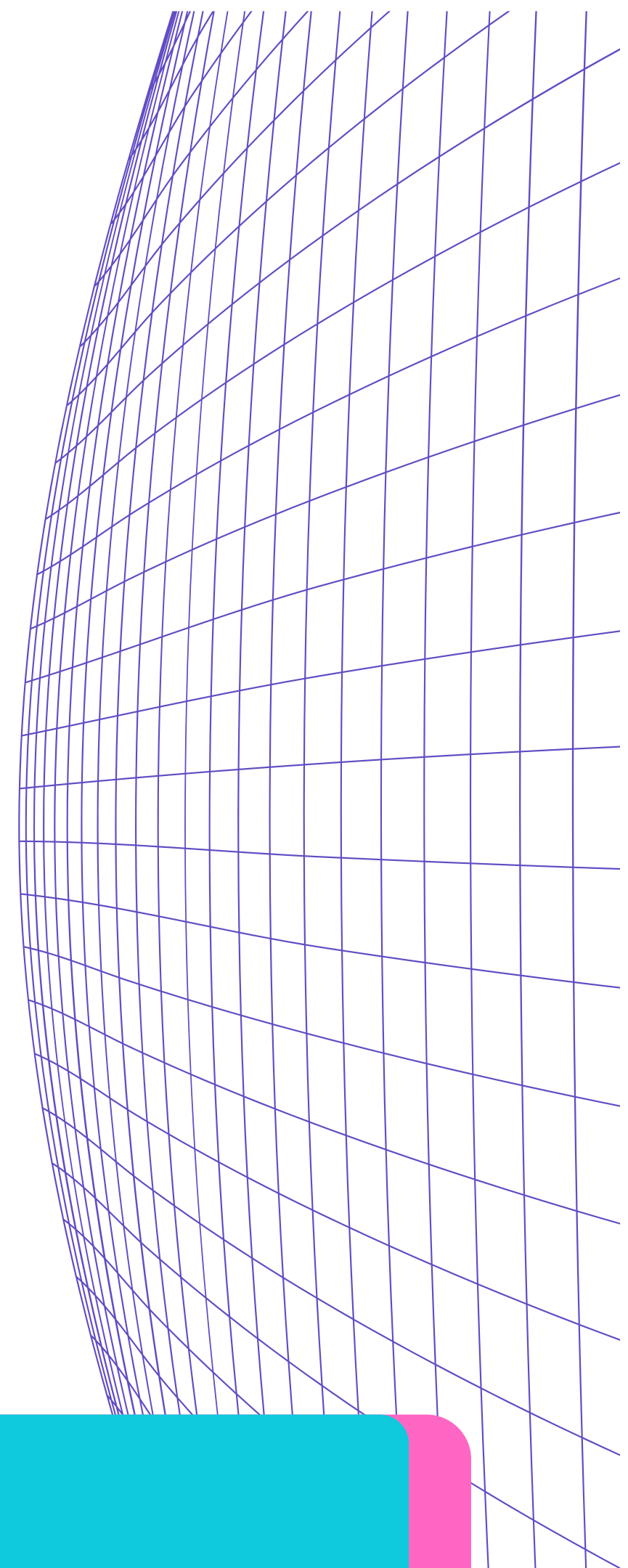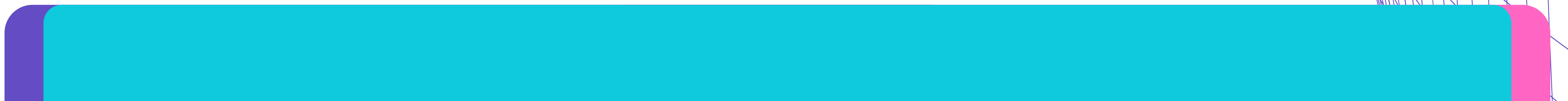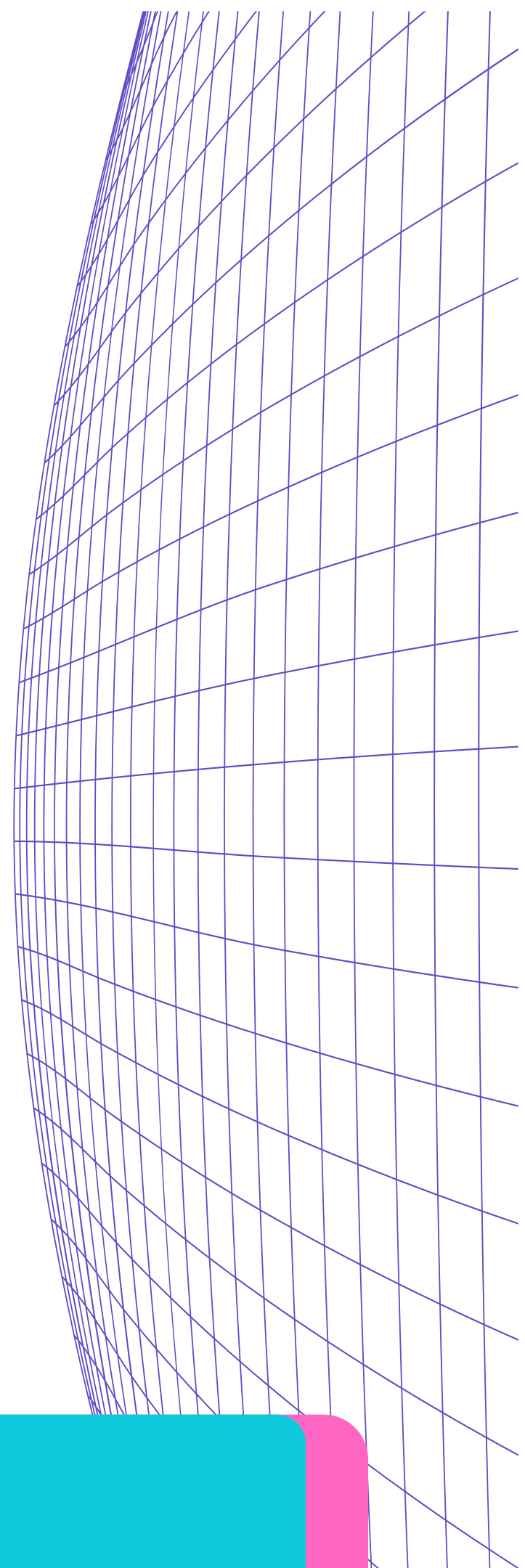
Activity 1

Directions

- Submit a single document that contains the screenshots of the tasks performed, along with the output you produced.
- Visit at least **six different websites**, selecting from the following categories: **informational, educational, e-commerce, social networking, portfolio, and blog.**
- Create a table that includes the **name of each website, its URL, its website types** and a **brief description** of its purpose and target audience.

THANK YOU