



Tishk International University
Faculty of Applied Science
Cybersecurity Department

Introduction to Web Technologies

Lecture 1 -Theory

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Course Code: CBS 313

Hevi Ahmed

hevi.ahmed@tiu.edu.iq

Outline

- Web Technologies
- Components of Web applications
- Internet vs WWW
- Types of Websites
- Importance of Web technologies
- What is web design
- Components of a website
- Reference

Learning Outcomes

At the end of this lecture, you will be able to:

- Define web technologies, HTML, and web design.
- Explain the Internet vs. the Web, and front-end vs. back-end.
- Create a simple web page using the HTML skeleton.
- Compare static and dynamic websites, and explain why they matter for cybersecurity.

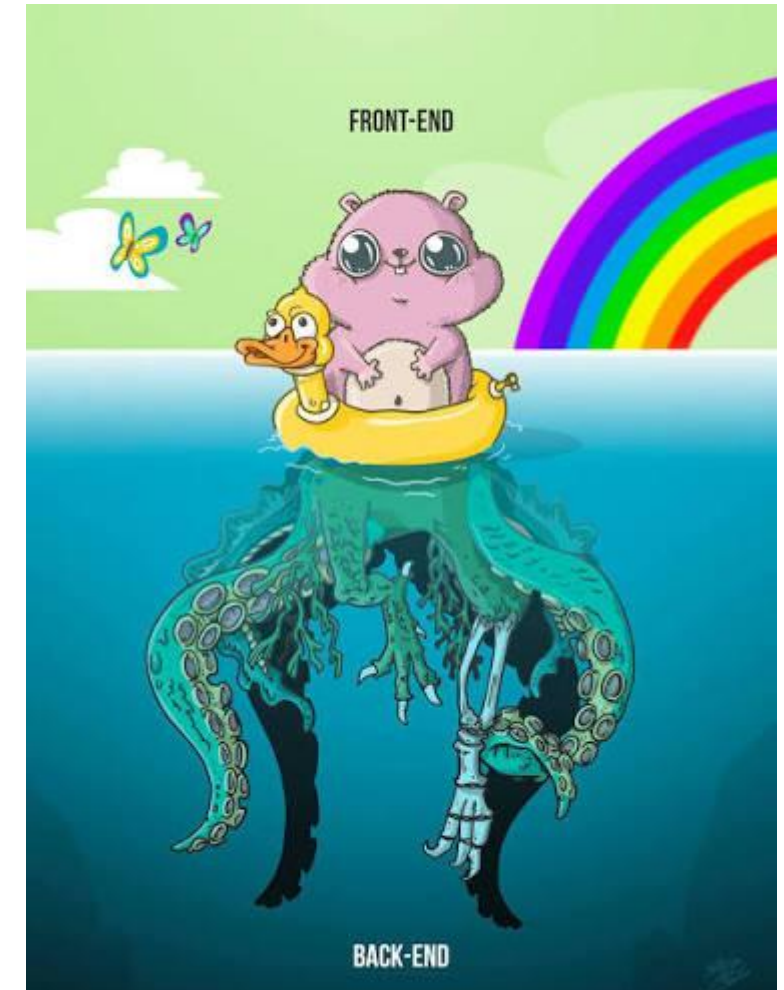
What are Web Technologies

- **Web Technologies** refer to the suite of software tools, markup languages, protocols, client-server architectures, and database management systems used to create, deliver, and maintain applications across the World Wide Web.



Components of Web Applications

- **Client Side (Front-End):** is what users see and interact with on a website, like the layout, buttons, and text.
- **Server Side (Back-End):** is the part that works behind the scenes, handling tasks like storing data and processing requests.



Some of the most common frontend and backend technologies include:



Internet vs. World Wide Web

- **The Internet:** A global network of interconnected computer networks operating on standard communication protocols (TCP/IP suite).
- **The World Wide Web (WWW):** An information system and application layer service built on top of the Internet that enables documents and resources to be accessed using HTTP/HTTPS and URIs/URLs.



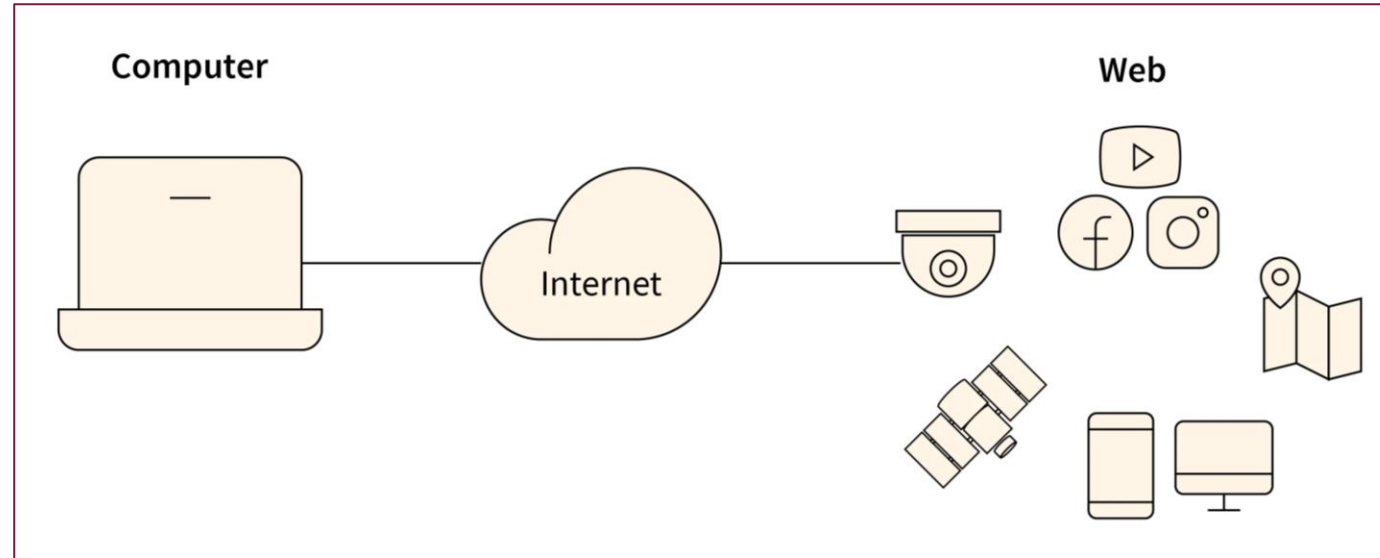
Internet

VS



World Wide Web

Example :



When you stream a movie via a web browser, your browser uses the World Wide Web (**HTTPS protocol**) over the Internet.

When your computer automatically updates its system clock via NTP (**Network Time Protocol**), it uses the Internet, but it is not using the Web.

Activity :

Read each item and tell whether each is the Internet or the Web.

Item	Answer
Opening tiu.edu.iq in Chrome	
Watching a YouTube video in the browser	
Sending an email with the Outlook app	
Playing an online game	
Reading news on a website	
Opening instagram.com in Chrome on your laptop	
A WhatsApp video call with a friend	
Playing an online match of PUBG or Fortnite on Xbox or PlayStation	

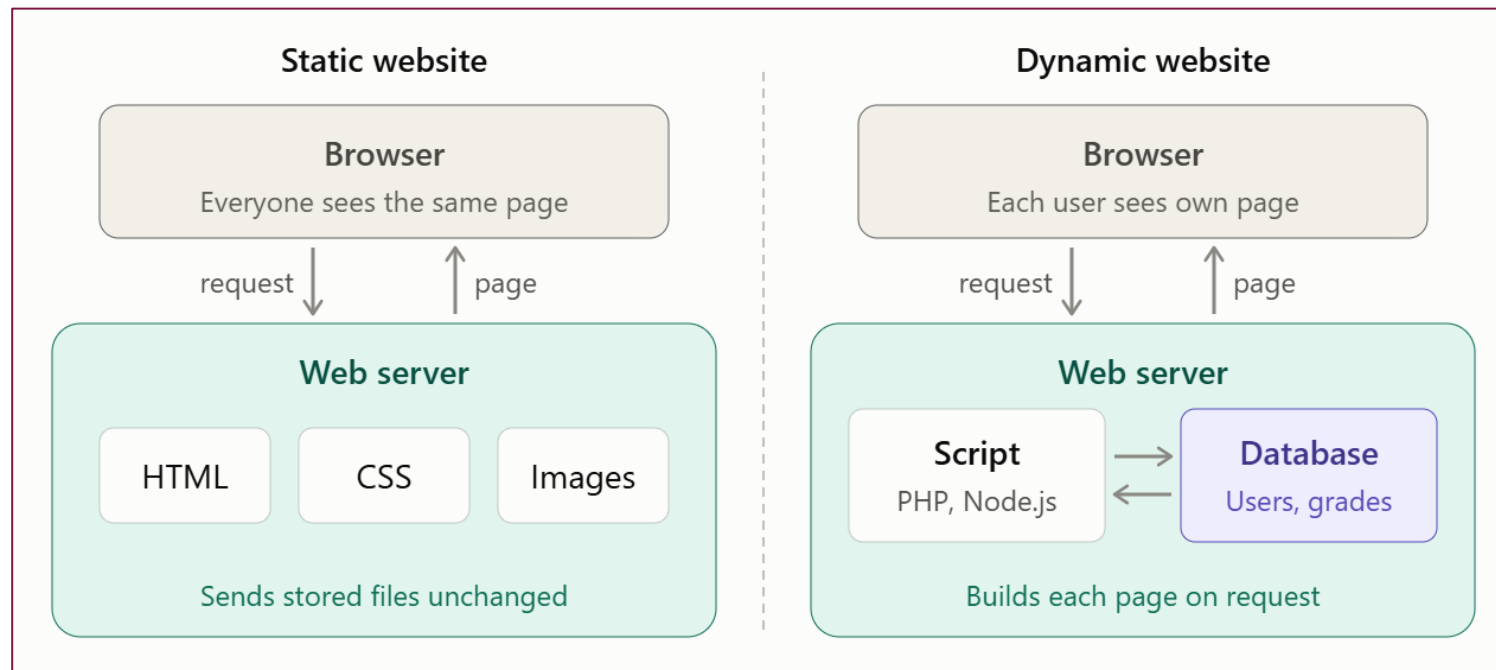
Types of Websites

Static

- Written in plain HTML.
- Difficult to update and the user need to know HTML.
- Very difficult to scale

Dynamic

- Written using a server-side scripting language such as PHP, ASP, JSP.
- Easy to update and no technical knowledge is required.
- Easy to scale





Why It Matters for Cybersecurity

- Every web technology defines a specific application surface.
Securing a modern web environment requires understanding how data flows, how state is maintained, and where client-server boundaries can be exploited.

Web Design

Web design is the process of creating websites. It focuses on:

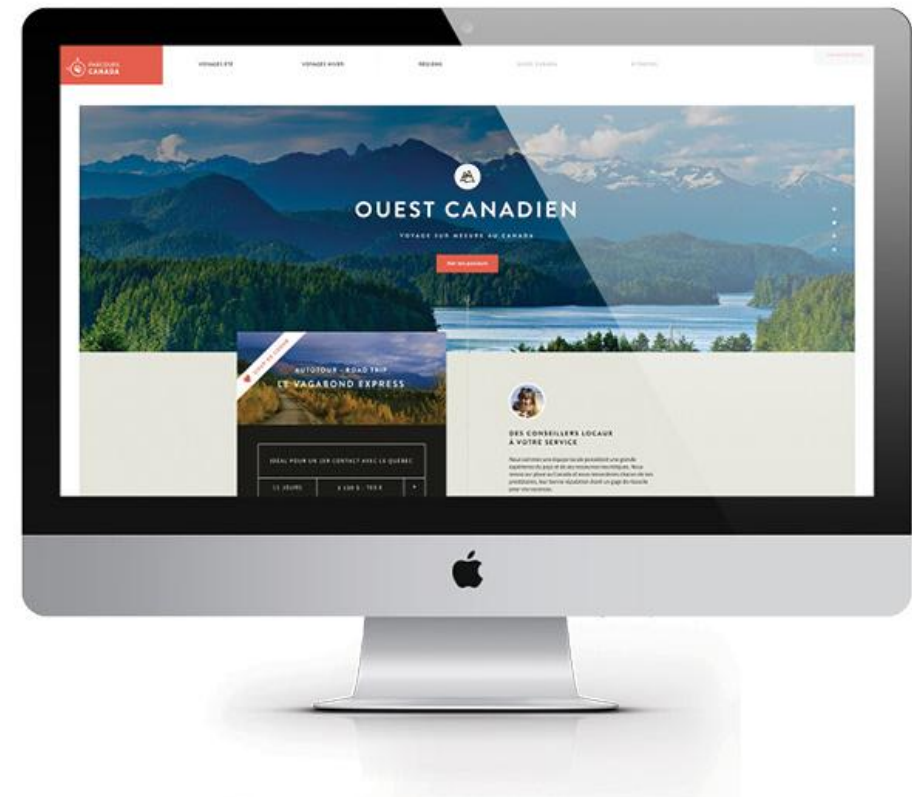
- Layout
- Colors
- Fonts
- Images



Which website do you prefer?



VS

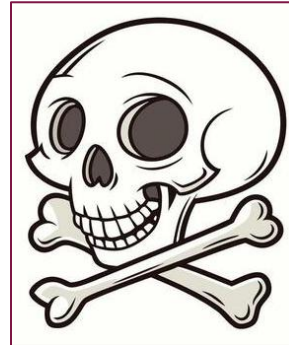


Main Components of a Website

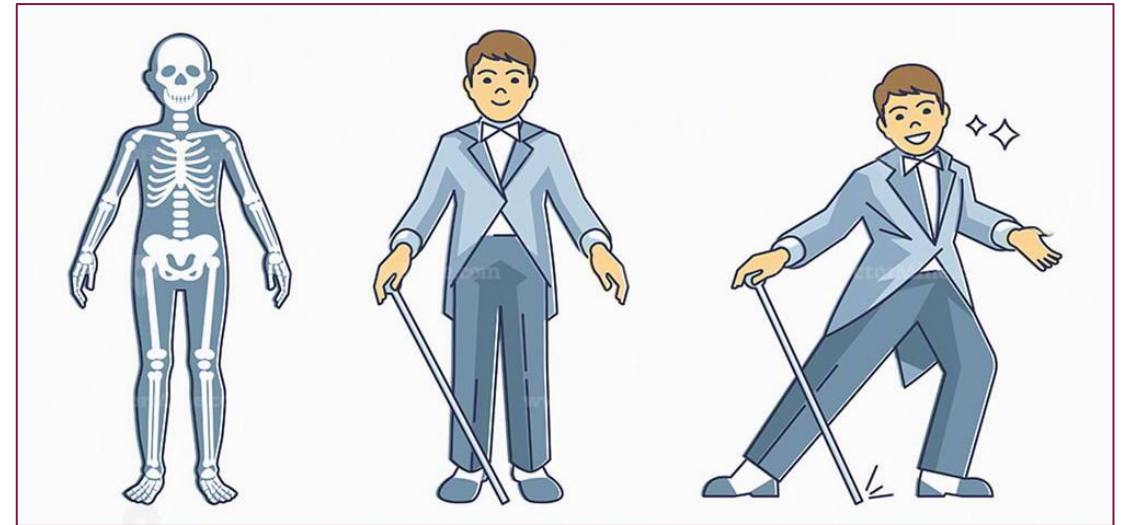
1. HTML – Structure
2. CSS – Styling
3. JavaScript – Interactivity

Think of it like a house:

- HTML = Structure (walls)
- CSS = Design (paint, decoration)
- JavaScript = Functionality (electricity, doors)



Content



HTML

HTML+CSS

HTML+CSS+JavaScript

Next Lecture

- HTML Basic Elements
- Page Components

References

- Schafer, S.M. (2010) HTML, XHTML, and CSS Bible. 5th edn. Indianapolis, IN: Wiley Publishing.
- Glass, E. (2020) How To Build a Website with CSS and HTML. New York: DigitalOcean.
- Duckett, J. (2011) HTML & CSS: Design and Build Websites. Indianapolis, IN: John Wiley & Sons, Inc.