

# The Core Web Technologies

Introduction

# The roadmap

- HTML
- CSS
- JavaScript





# Full Stack Developer

Front End Developer

Back End Developer

Back-end developer VS server-side  
developer

Front end developer VS UX designer



# Front end Developer

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Primarily responsible for implementing the visual and interactive elements of a web application.

They ensure that the user sees and interacts as the UX/UI design specifies.

Tech Stack: Uses HTML, CSS, and JavaScript. Might also use front-end frameworks or libraries such as React, Angular, or Vue.js.

## **Responsibilities:**

- Translate UI/UX designs into code.
- Make sure the web design is optimized for smartphones and other devices using responsive design techniques.
- Performance optimization for the frontend.
- Testing and debugging.
- Collaborate with back-end developers to integrate server-side logic.

# UX (User Experience) Designer:

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Role: Focuses on the overall feel of the product and the user's experience. They ensure that the application flows logically from one step to the next.

Tools: Might use tools like Sketch, Figma, Adobe XD, or InVision.

Responsibilities:

- Research user personas and stories.
- Design user flows and wireframes.
- Plan and conduct user testing and analyze feedback.
- Work closely with UI designers to ensure the visual aspect also complements the user experience.
- Collaborate with front-end developers to guide and ensure the translation of designs into a functional user interface.

# UX (User Experience) Designer:

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Overlap with UI Design: UX design often goes hand-in-hand with UI (User Interface) design. While UX is about the overall feel and flow, UI focuses on the specific look and layout. Some designers specialize in one over the other, while some might do both (often referred to as UI/UX designers).

It's worth noting that while UX designers often possess a good understanding of how front-end development works (and vice versa), their primary expertise lies in design and user research. In contrast, front-end developers are specialized in coding. In larger companies, these roles tend to be separate, but in smaller teams or individual projects, a person might wear both hats.

Overall, while both front-end developers and UX designers work closely and are crucial for the end product's appearance and functionality, their core competencies and day-to-day tasks are different.

# Backend Developer

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The back end of an application refers to everything happening behind the scenes which the user doesn't directly interact with.

This includes the server, the database, and the application (server-side scripts).

A back-end developer might use a variety of technologies, languages, and frameworks that aren't restricted to just server-side scripting.

This could include database query languages like SQL, server technologies like Node.js or ASP.NET, and even certain middleware.

# Backend Developer

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## Responsibilities:

- Database creation, integration, and management.
- Server-side logic.
- Implementing algorithms and solving system-related problems.
- Ensure data consistency, security, and responsiveness.
- Integration with Front End: They often work closely with front-end developers to integrate the server-side logic with the client-side application.



# Server-side Developer

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A server-side developer focuses on coding and managing the server-side logic of web applications. This involves processing client requests, handling data transactions, and more.

**Specific Tech Stack:** Their tools are specific to server-side scripting and might include languages and frameworks like PHP, Ruby on Rails, Express with Node.js, Flask for Python, etc.

**Responsibilities:**

- Handle HTTP requests from the client.
- Server-side routing.
- Implementing authentication and authorization.
- Managing business logic specific to server-side operations.

# Server-side Developer

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Less Interaction with Databases: While they might still interact with databases, they might not be directly involved in database design or management as a back-end developer would. However, this can vary based on job roles and company needs.

In many cases, especially in smaller companies or in specific project contexts, a back-end developer will handle all aspects of server-side development and more, making the roles indistinguishable.

In larger companies or specialized projects, there might be a clear distinction, with back-end developers having a broader set of responsibilities and server-side developers focusing strictly on server logic.

# Frontend VS Backend Developer

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- Front-end development focuses on CLIENT side of a web page
- Back-end development focuses on SERVER side of a web page
- Front-end developers work on static web site design (in general).
- Backend developers work on dynamic websites (Manage files and databases, contact forms, user access, etc).

# World Wide Web (WWW)

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## HTTP Request /Response

- A client (a browser) sends an **HTTP request** to the web
- A web server receives the request
- The server returns an HTTP response (output) to the browser
- The client (the browser) receives the response List of errors

List of HTML messages and codes

[HTTP response status codes - HTTP | MDN \(mozilla.org\)](#)

Also read about HTML 5 VS HTML ([Resource 1](#), [Resource 2](#))

# XHR (XML HTTP Request)

XHR is a JavaScript object that provides a way to exchange data with a server and update parts of a web page without having to reload the entire page.

The XHR Object is a Web Developers Dream, because you can:

- Update a web page without reloading the page
- Request data from a server - after the page has loaded
- Receive data from a server - after the page has loaded
- Send data to a server - in the background

The XHR Object is the underlying concept of AJAX and JSON



# Web hosting Control Panels

[cPanel](#) ([Demo](#))

Plesk ([Demo](#))

DirectAdmin

Webmin

VestaCP

ESPConfig

Cloud Hosting Platforms

- AWS: Amazon Web Services
- Microsoft Azure
- GCP: Google Cloud Platform

How many websites are out there?

Managed WordPress hosting

And some other large organisations, choose to design their own or don't use a traditional hosting control panel.

Bare Metal and Custom Specs

# Content Management Systems (CMS)

- Let's install Joomla 4 and build a quick website.
- By completing the Joomla set-up, you should develop a better understanding of how the frontend and backend work along with each other to provide a dynamic website.