



edureka!

a Veranda Enterprise



Full Stack Web Development Program



COURSE OUTLINE

MODULE 1



1. Introduction to Web Development

2. Overview to HTML

3. Exploring fundamental HTML tags - 1

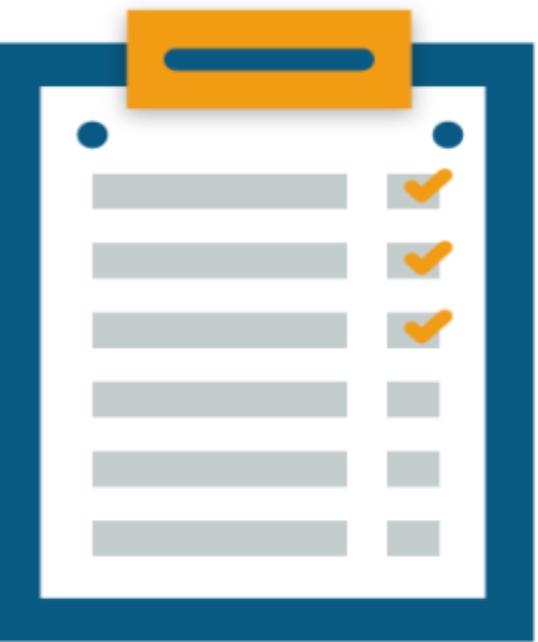
4. Exploring fundamental HTML tags - 2

5. HTML containers tags



Titles

- Introduction to Web
- Elements of the Web
- Introduction to Web Development
- Components of Web Development
- Exploring Frontend, Backend, and Database
- Exploring various Tech Stacks and their Importance
- Introduction to MERN and it's Components



Learning Objectives

By the end of this module, you will be able to:

- Develop a solid understanding of the core concepts and components of web development
- Familiar with the fundamental technologies used in frontend and backend development
- Gain insights into the roles of databases and tech stacks

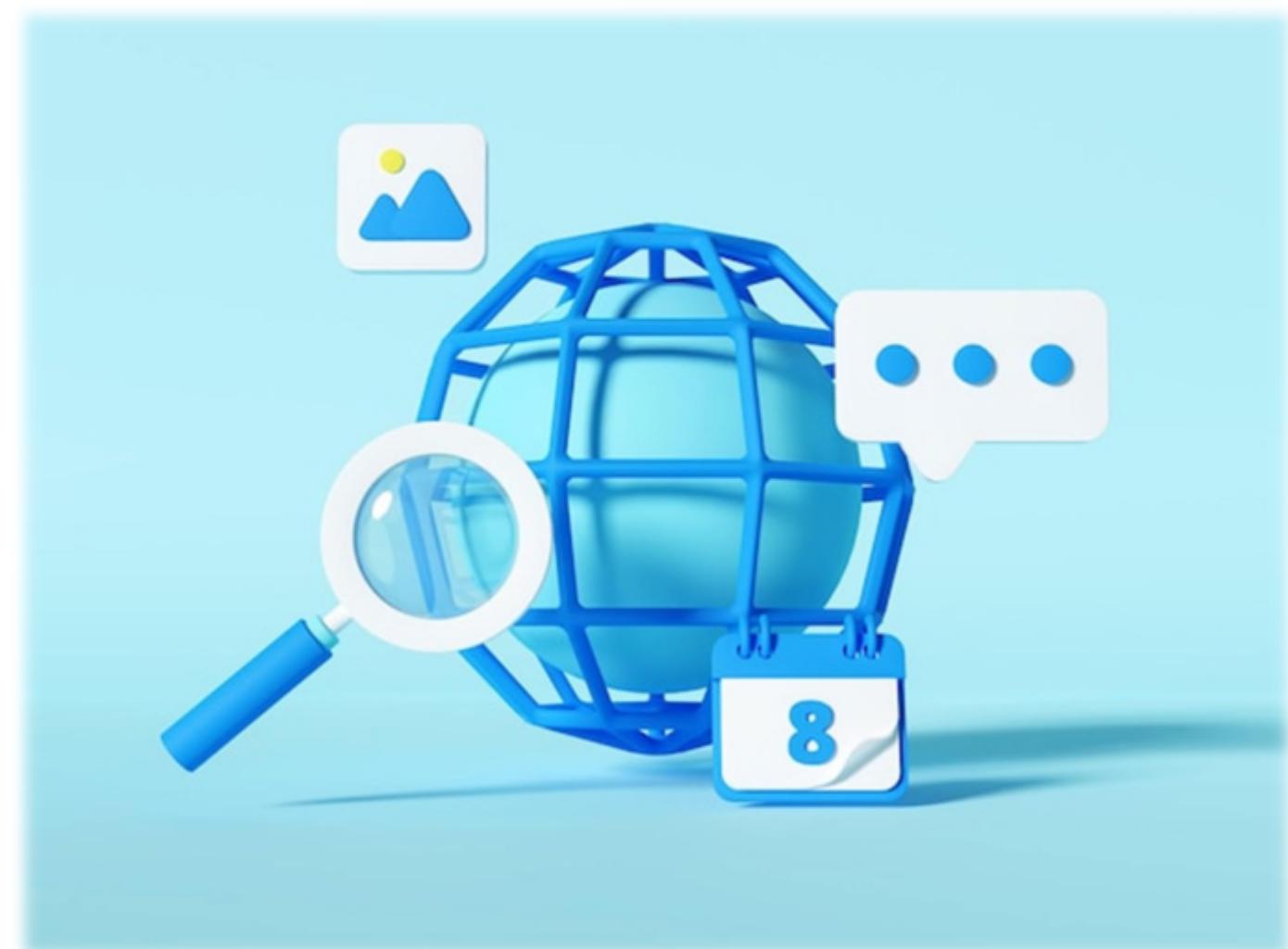




Introduction to the Web

Demystifying the term **Web**

- In its most basic sense, the **Web** refers to the World Wide Web, an extensive and complex network of connected information, multimedia, and resources available worldwide.
- It's a global network of computers and smartphones that have eliminated physical distance and language barriers to unite people worldwide.



Demystifying the term **Web** (contd.)

Origins and Evolution:

- A visionary computer scientist named **Sir Tim Berners-Lee** in the late 20th century had the idea for a system that would allow researchers to share remotely and access information, and thus the Web was born.
- This resulted in the development of the **World Wide Web**, a groundbreaking idea that paved the way for the modern Internet.

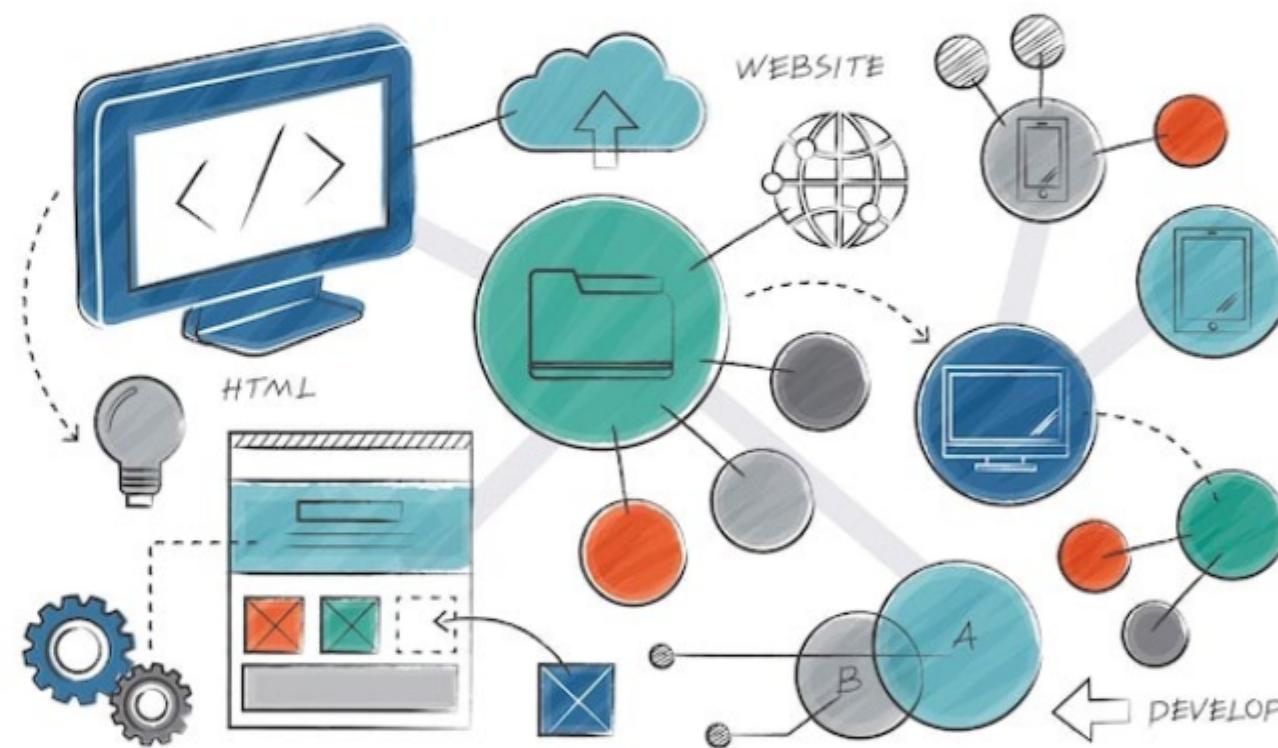


Timothy John Berners-Lee

Elements of the Web

The Web is made up of several different parts that work together to provide us with the amazing experience we have today:

- **Webpages:** Pages on the World Wide Web are the basic units of the Internet; they can contain everything from text and photos to movies and interactive media. The markup languages HTML and CSS are used to create the structure and presentation of websites.
- **Hyperlinks:** Hyperlinks, or "links," facilitate movement around the Web. Users can quickly navigate between different pieces of material on the web by clicking on relevant hyperlinks.



Elements of the Web (contd.)

- **Web browsers:** Programs let you access the World Wide Web and view pages from it. Chrome, Firefox, Safari, and Edge are just a few of the most well-known browsers.
- **Web servers:** Computers that keep copies of websites and provide them to users when they request them. Web addresses (URLs) are a browser's requests to a server, which subsequently responds with the requested data.





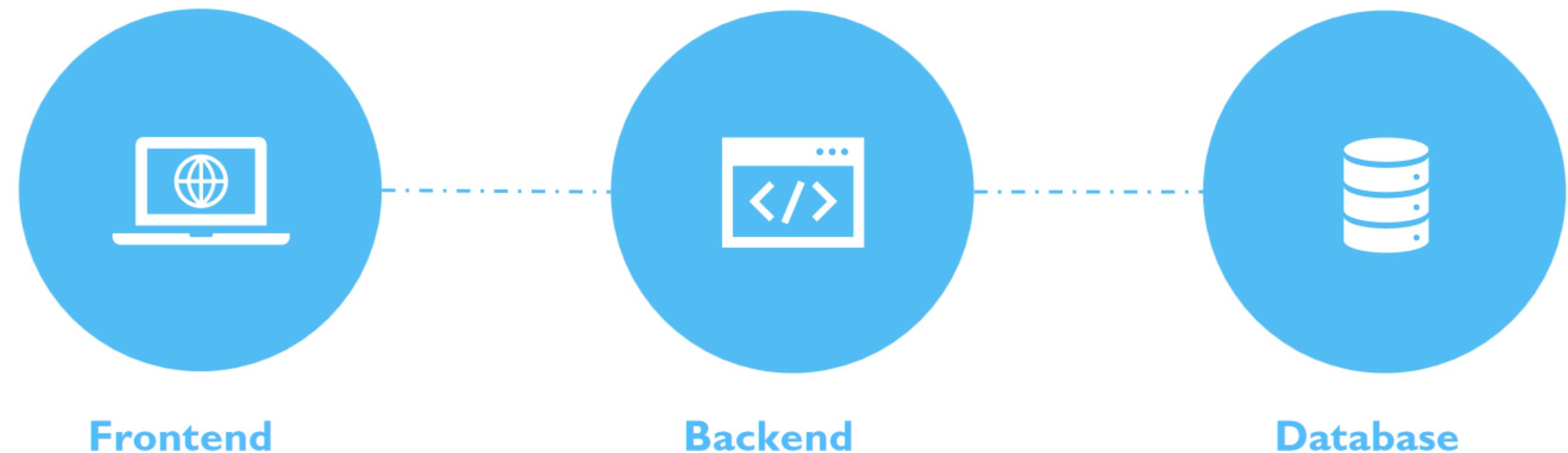
Introduction to Web Development

Web Development: Crafting the Digital World

- The process of designing, constructing, and managing the websites and applications that occupy the enormous space of the internet is known as **web development**.
- It's the dynamic process that turns digital concepts and designs into interactive online experiences that people can access worldwide.
- Web development, at its core, is the creative synthesis of design, technology, and functionality, which produces a wide variety of websites and applications that define our interactions online.



Key Elements of Web Development

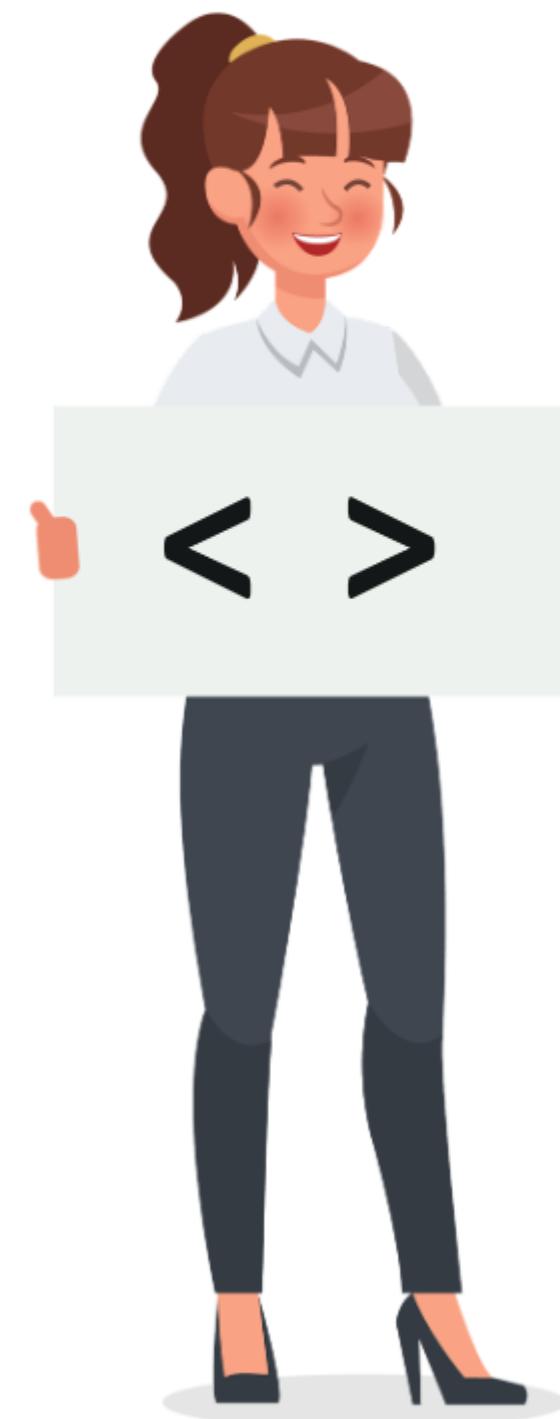


Fundamental components of web development



Overview of Front-End, Back-End and Databases

Front-End Development

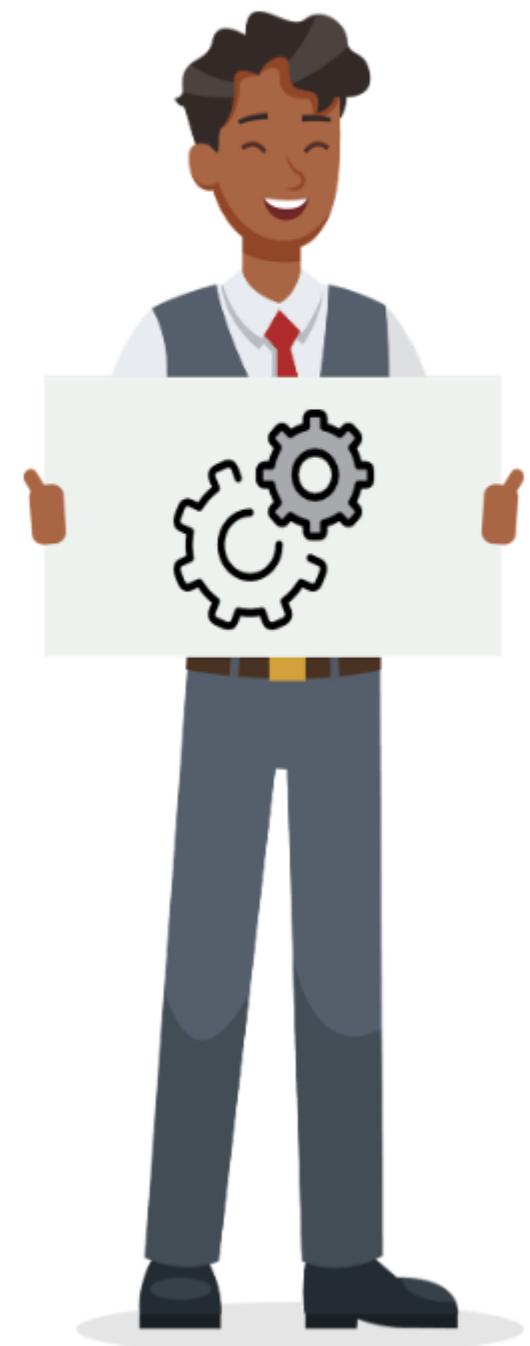


- The part of the website that the user **sees** and **interacts** with.
- An attractive **User Interface (UI)** to provide a better **User Experience (UX)**.
- Built with the following technologies:
 - HTML
 - CSS
 - JavaScript
 - JavaScript frameworks (Angular, React JS and Vue)



- Runs on the server.
- Has no direct interaction with the user.
- Creates a connection between the web and a database.
- Built with the following technologies:
 - Java
 - .NET
 - PHP
 - Ruby
 - NodeJS

Backend-End Development



Database



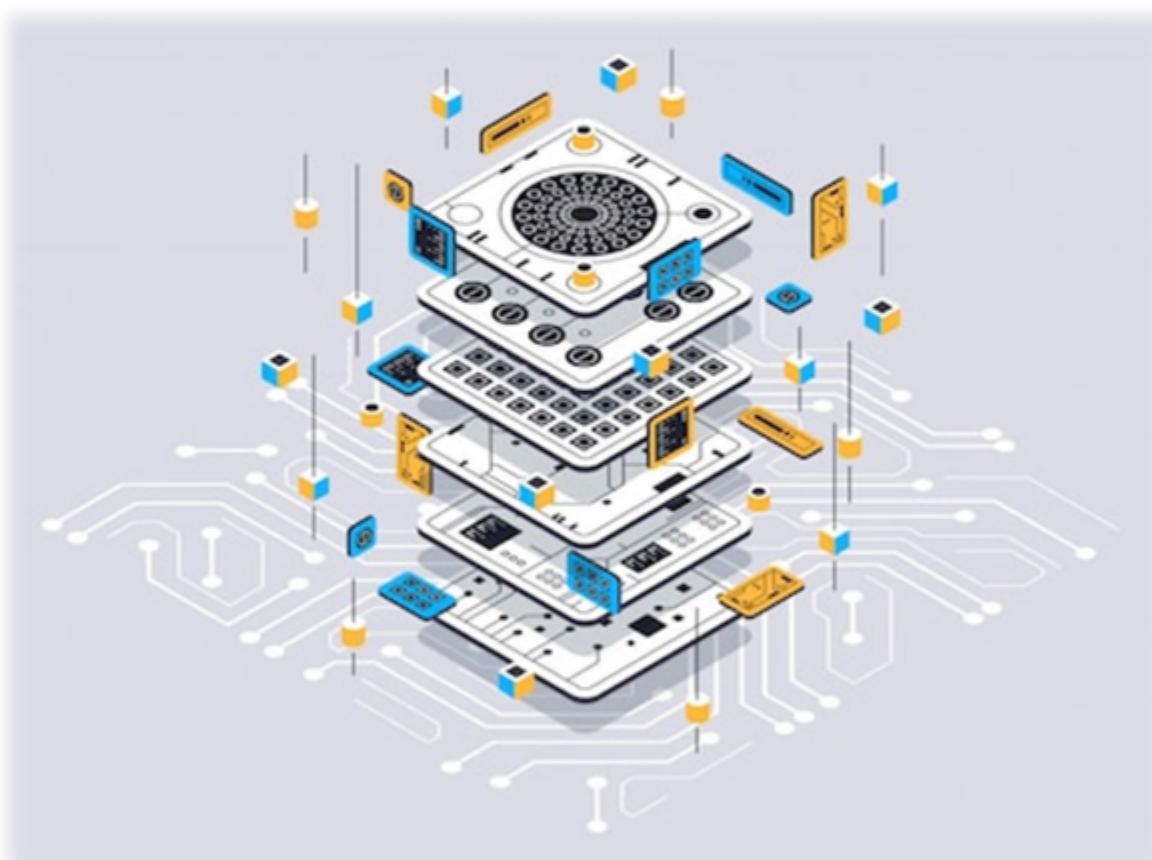
- An organized set of data/information.
- A storage system to make data accessible and manageable.
- Built with the following technologies:
 - MongoDB
 - PostgreSQL
 - Cassandra



Tech Stacks and It's Importance

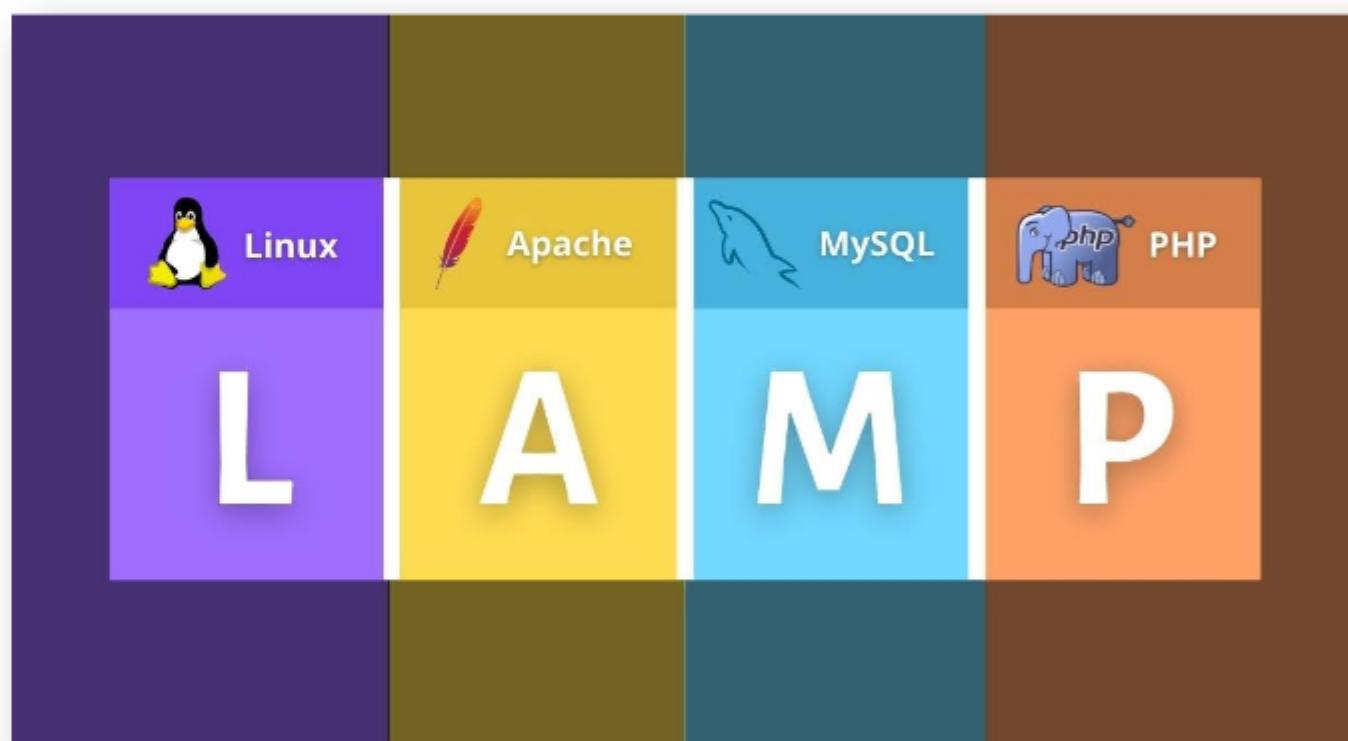
Spotlight on Tech Stacks

- A technological stack, sometimes called a tech stack, is a collection of resources such as programming languages, frameworks, libraries, and other programs that create and launch a website, program, or system's software or application.
- Each technology stack has been meticulously crafted to cater to specific development requirements, optimize performance, and streamline communication and cooperation amongst developers.
- Different tech stacks are **LAMP**, **MEAN**, **MERN**, **MEVN**, **RoR**, **Python Django Stack**, **Java Spring Stack**, and more.



Spotlight on Tech Stacks – LAMP

- **Linux:** The operating system that serves as the foundation.
- **Apache:** The web server software that handles HTTP requests.
- **MySQL:** The relational database management system for storing and managing data.
- **PHP:** The programming language used for server-side scripting.



Spotlight on Tech Stacks – MEAN

- **MongoDB:** The NoSQL database for storing flexible, document-oriented data.
- **Express.js:** A web application framework for building server-side applications.
- **Angular:** A front-end framework for building dynamic and interactive user interfaces.
- **Node.js:** A server-side runtime environment for executing JavaScript code.



Spotlight on Tech Stacks – MERN

- **MongoDB:** The NoSQL database for storing flexible, document-oriented data.
- **Express.js:** A web application framework for building server-side applications.
- **React:** A JavaScript library for building user interfaces.
- **Node.js:** A server-side runtime environment for executing JavaScript code.



Spotlight on Tech Stacks – RoR (Ruby on Rails)

- **Ruby:** A dynamic, object-oriented programming language.
- **Ruby on Rails (Rails):** A web application framework written in Ruby.
- **SQLite/PostgreSQL/MongoDB:** Databases used for data storage.
- **HTML/CSS:** Front-end languages for UI presentation.



Spotlight on Tech Stacks – Python Django

- **Python:** A versatile, high-level programming language.
- **Django:** A high-level web application framework written in Python.
- **SQLite/MySQL:** Databases used for data storage.
- **HTML/CSS:** Front-end languages for UI presentation.





Introduction to the MERN Stack and its components

Exploring MERN Stack

- The MERN stack is a strong and comprehensive toolkit for modern web development, enabling developers to create dynamic and interactive online apps quickly.
- **MongoDB, Express.js, React, and Node.js** comprise the MERN stack, simplifying full-stack application development.
- Let's explore the MERN stack and discover its unique components.
 - MongoDB
 - Express.js
 - React
 - Node.js



Exploring MERN Stack (contd.)

MongoDB is a flexible NoSQL database that uses a document-oriented approach.



Express.js is a web application framework for Node.js that simplifies server-side logic, routing, and middleware.

Node.js enables server-side execution of JavaScript code with efficient handling of concurrent connections, fostering code reusability and expediting the development cycle.



Full Stack Web Developer

Full Stack Web Developer

A full-stack developer can handle the work of databases, front-end, and back-end technologies.

