FULL STACK DEVELOPMENT WORKSHOP

BY LIMAT SOFT SOULUTIONS PVT LIMITED

Curriculum (30 Hours)

Introduction to Full Stack Development (2 hours)

Frontend Development (8 hours)

Backend Development (8 hours)

Full Stack Application Development (6 hours)

Advanced Topics (4 hours)

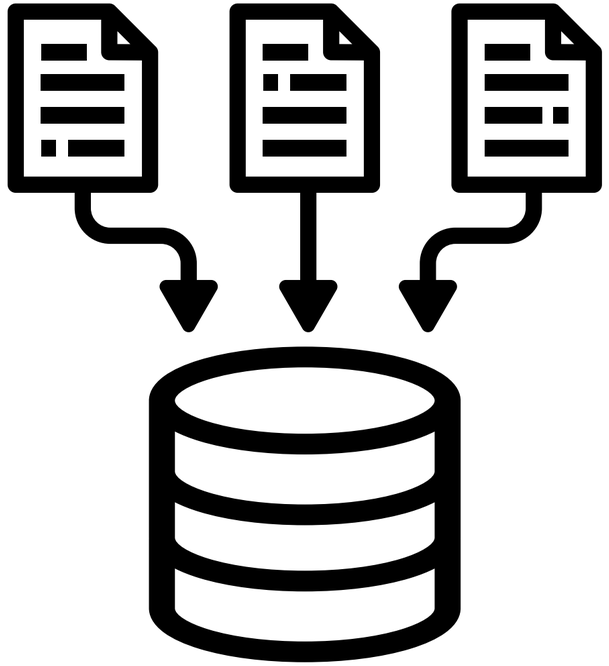
Final Project and Review (2 hours)

1. Introduction to Full Stack Development (2 hours)

- Overview of Full Stack Development
- Understanding Frontend, Backend, and Databases
- Tools and Technologies (HTML, CSS, JavaScript, Node.js, Express, MongoDB, etc.)

Full Stack Development

Overview and Fundamentals



What is Full Stack Development?

Full Stack Development- refers to the process of developing both the frontend (client-side) and backend (server-side) parts of a web application. A Full Stack Developer is proficient in all layers of a web application's architecture, which includes:

Frontend Development: Involves designing and developing the user interface (UI) that users interact with, using technologies like HTML, CSS, JavaScript, and frontend frameworks (e.g., React, Angular).

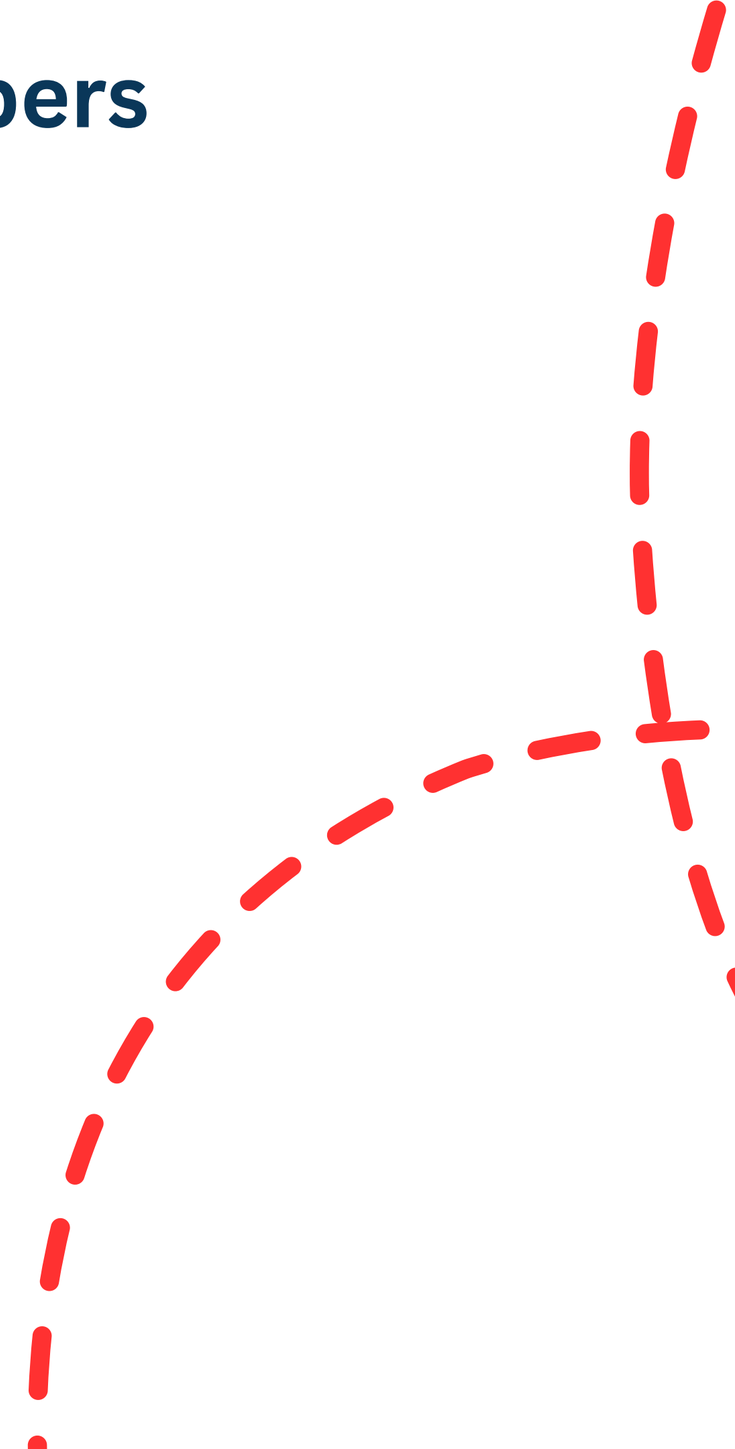
Backend Development: Focuses on server-side logic, databases, APIs, and business processes that power the frontend, using technologies like Node.js, Express, Python, or Java, and databases like MongoDB, MySQL, or PostgreSQL.

Importance of mastering both frontend and backend

1. Versatility and Flexibility
2. Better Collaboration and Communication
3. Improved Problem Solving
4. Higher Demand and Salary Potential
5. Complete Ownership of Projects
6. Streamlined Development Process

Career opportunities for full stack developers

1. Full Stack Developer
2. Web Developer
3. Software Engineer
4. DevOps Engineer
5. Freelancer / Consultant

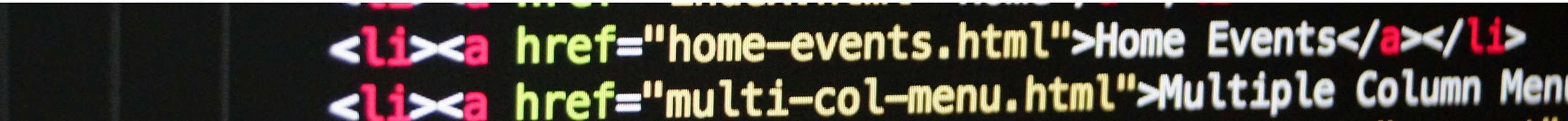


OVERVIEW OF FRONTEND DEVELOPMENT

Technologies: HTML, CSS, JavaScript

What is client-side development?

Importance of UI/UX in frontend development



Overview of Backend Development

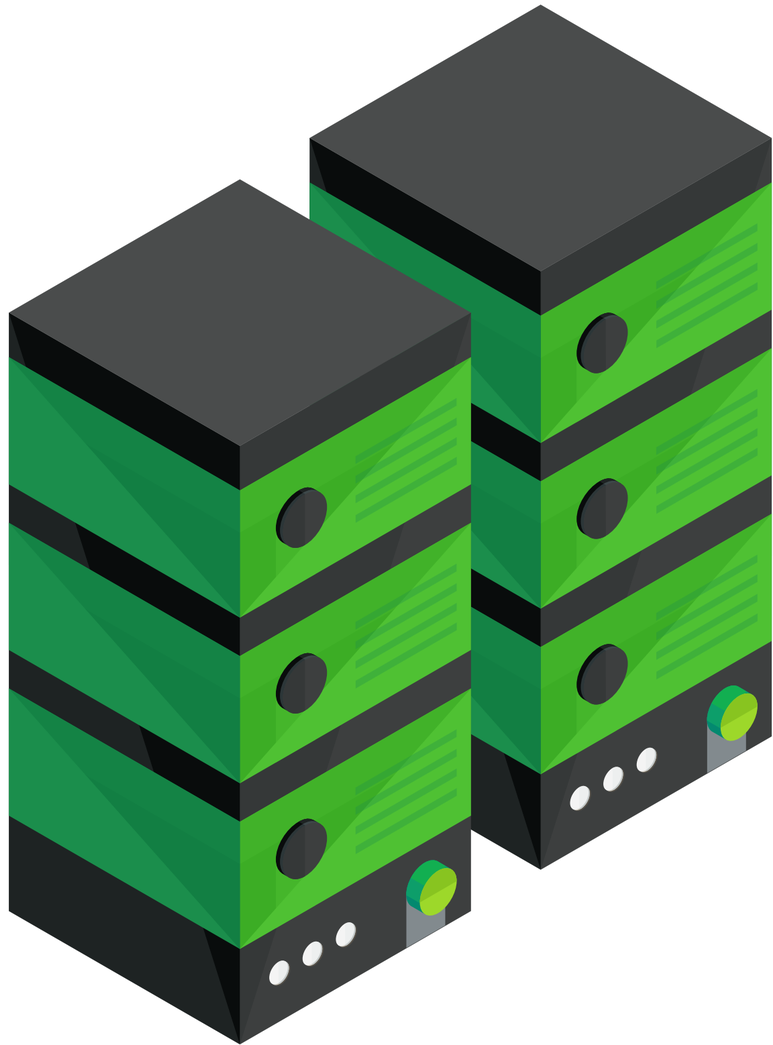
Technologies: Node.js, Express

Server-side programming

Handling business logic and database operations

Overview of Databases

- Types of databases: SQL vs NoSQL
- Introduction to MongoDB (NoSQL database)
- Why databases are crucial for dynamic web apps



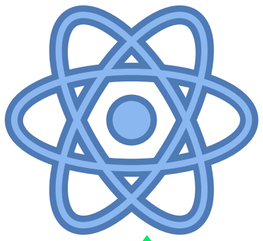
Tools & Technologies for Full Stack Development

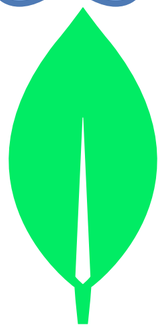
Frontend: HTML, CSS, JavaScript, React

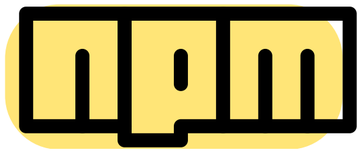
Backend: Node.js, Express

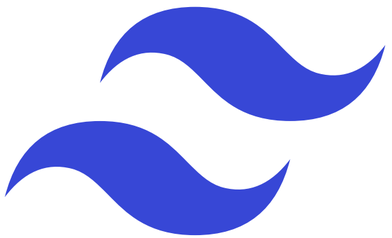
Database: MongoDB

Other tools: Git, VSCode, Postman

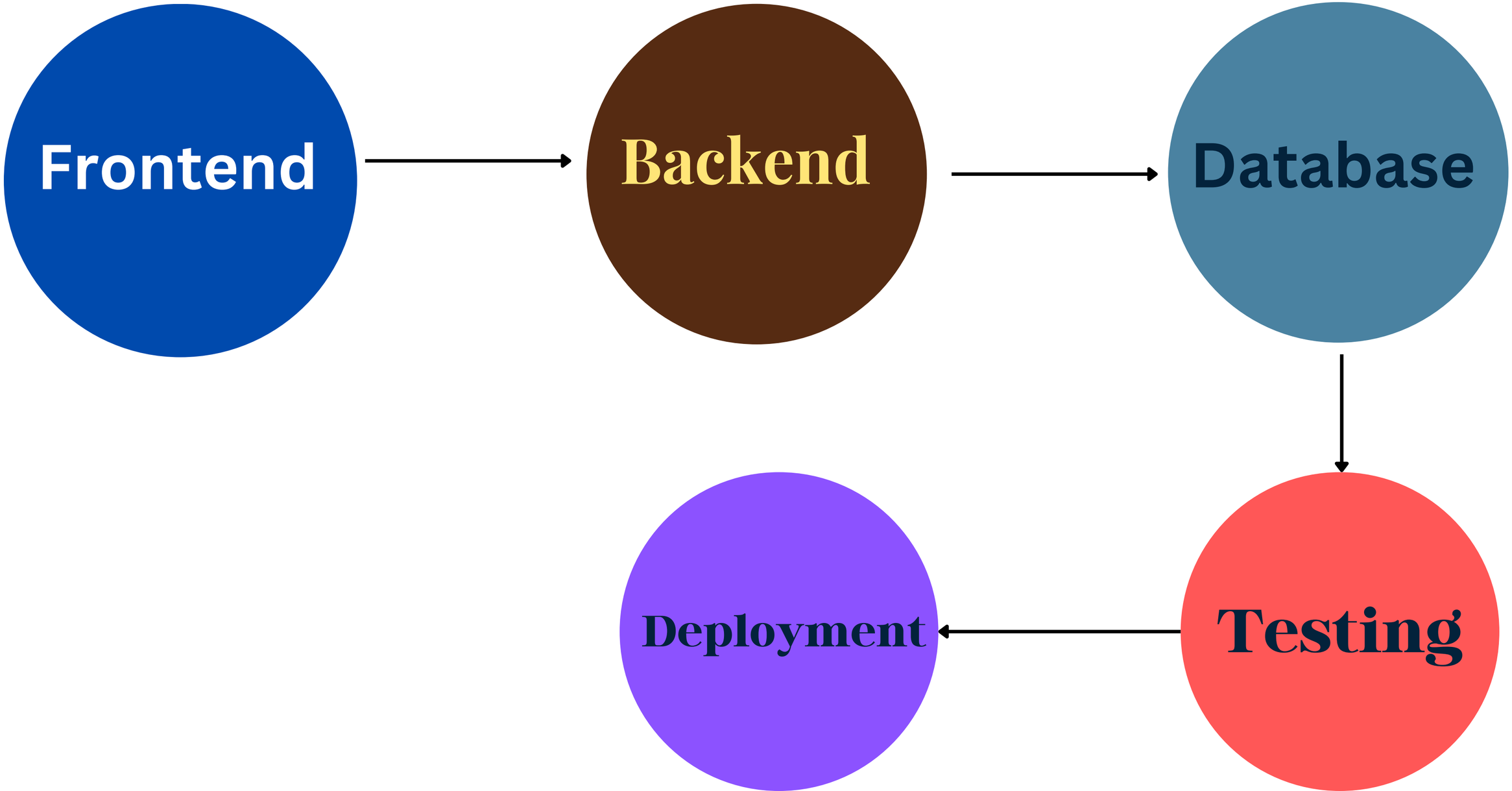








The Full Stack Development Workflow



HTML, CSS, and JavaScript

Role of HTML: Structure of web pages

Role of CSS: Styling and layout

Role of JavaScript: Interactivity and functionality

Introduction to Node.js

- What is Node.js and why it’s important for full stack development?
- Advantages of using JavaScript for both frontend and backend
- Node.js as a runtime environment for server-side code

Introduction to Express.js

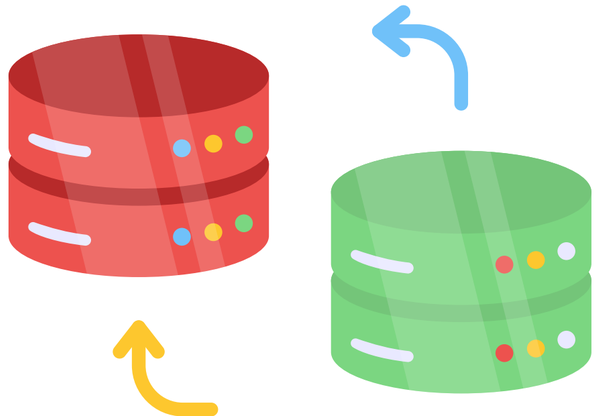
What is Express.js?

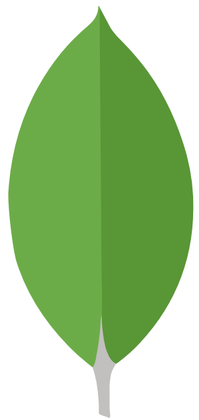
How it simplifies building web servers and APIs

Routing and middleware in Express

Introduction to MongoDB

- What is MongoDB?
- Difference between NoSQL and relational databases
- Why MongoDB is used in modern web apps





let's start.....

HTML AND CSS

BASICS

Agenda:

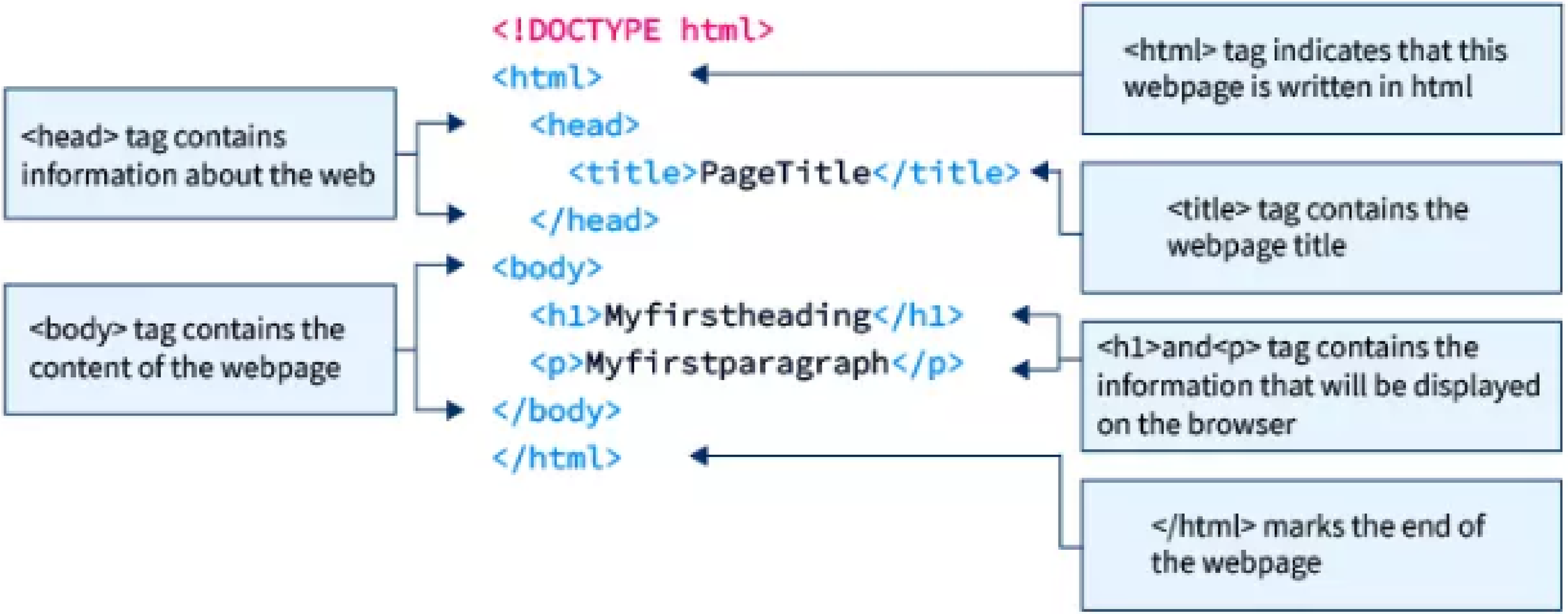
- Structure of HTML (Tags, Elements, Attributes)
- Styling with CSS (Selectors, Flexbox, Grid)
- Responsive Design (Media Queries, Mobile-first Design)
- CSS Frameworks: Tailwind CSS

What is HTML?

Hypertext Markup Language (HTML) is the standard language for creating web pages.
HTML describes the structure of web pages using tags.

```
<html>
  <head><title>My Web Page</title></head>
  <body><h1>Hello World!</h1></body>
</html>
```

HTML Document Structure



HTML Tags

Tags define the structure and content of elements on the page.

Example: <h1>, <p>, <img>, .

Self-Closing Tags

List of HTML Tags

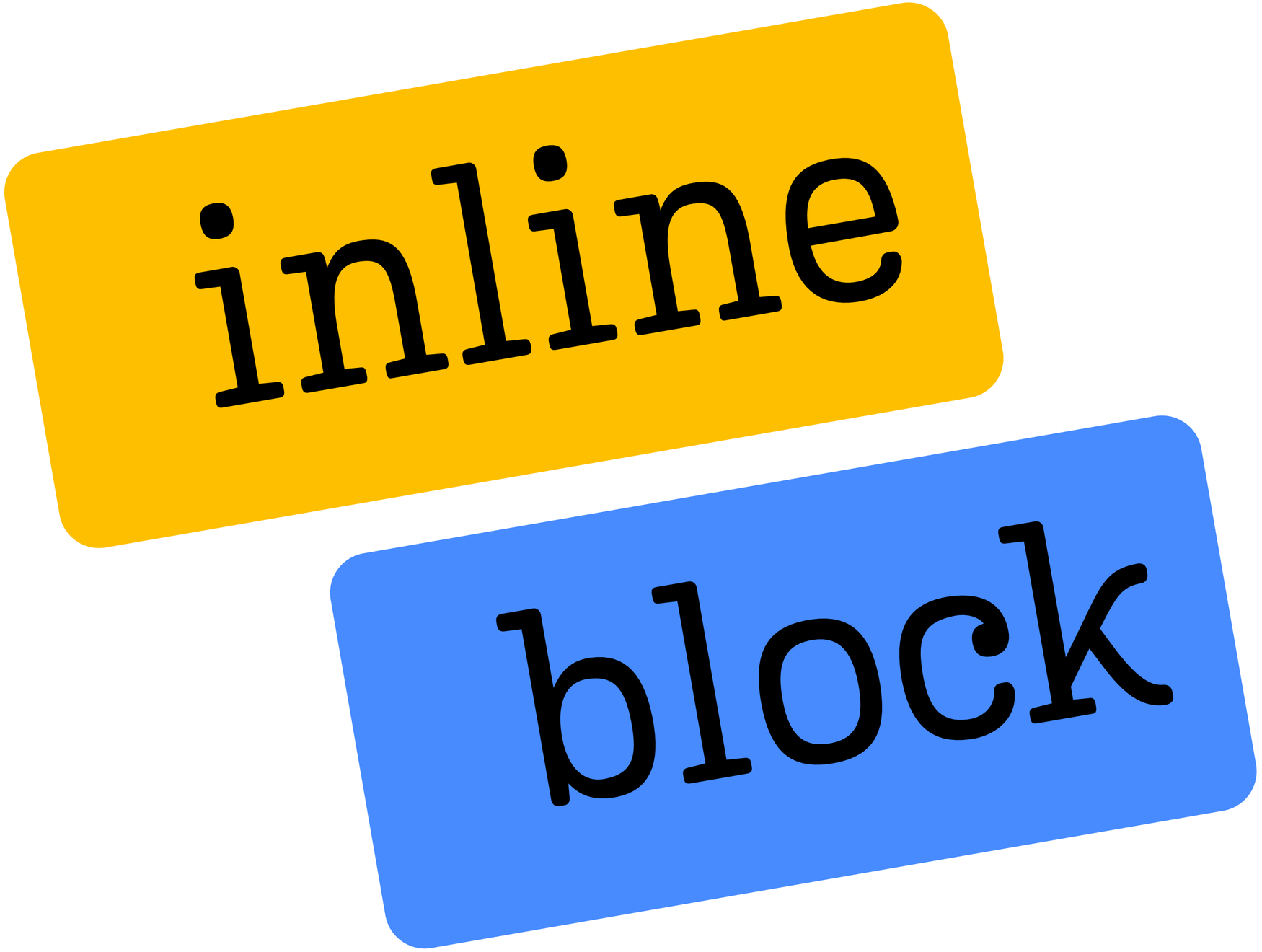
- <!-...->
- <IDOCTYPE>
- <a>
- <abbr>
- <acronym>
- <address>
- <applet>
- <area>
- <article>
- <aside>
- <audio>
- <b>
- <base>
- <basefont>
- <bdi>
- <bdo>
- <big>
- <blockquote>
- <body>
-
- <button>
- <canvas>
- <caption>
-
- <cite>
- <code>
- <col>
- <colgroup>
- <data>
- <datalist>
- <dd>
- <del>
- <details>
- <dfn>
- <dialog>
- <dir>
-
- <dl>
- <dt>
-
- <embed>
- <fieldset>
- <figcaption>
- <figure>
- <font>
- <footer>
- <form>
- <frame>
- <frameset>
- <h1>to<h6>
- <head>
- <header>
- <hr>
- <html>
- <i>
- <iframe>
- <img>
- <input>
- <ins>
- <kbd>
- <label>
- <legend>
-
- <link>
- <main>
- <map>
- <mark>
- <meta>
- <meter>
- <nav>
- <noframes>
- <noscript>
- <object>
-
- <optgroup>
- <option>
- <output>
- <p>
- <param>
- <picture>
- <pre>
- <progress>
- <q>
- <rp>
- <rt>
- <ruby>
- <s>
- <samp>
- <script>
- <section>
- <select>
- <small>
- <source>
-
- <strike>
-
- <style>
- <sub>
- <summary>
- <sup>
- <svg>
- <table>
- <tbody>
- <td>
- <template>
- <textarea>
- <tfoot>
- <th>
- <thead>
- <time>
- <title>
- <tr>
- <track>
- <tt>
- <u>
-
- <var>
- <video>
- <wbr>

HTML Attributes

attributes provide additional information about elements (e.g., src, alt, href).
Attributes are written within the opening tag.

```
<a href="https://example.com">Visit Example</a>

<img src="image.jpg" alt="Image description" />
```


inline
block

Semantic HTML

Semantic tags clearly describe their purpose: <header>, <footer>, <article>, <section>.
Improves SEO and accessibility.

```
<header><h1>Welcome to My Website</h1></header>
<section><p>This is an article about web development.</p></section>
```

Project: Personal Profile Page

LETS STYLE!

What is CSS?

- **Cascading Style Sheets (CSS) is used to control the appearance of HTML elements.**
- **CSS applies styles such as colors, fonts, layout, and spacing.**

Inline, Internal, and External CSS

Inline CSS: style attribute in HTML tags.

Internal CSS: <style> inside the <head> section.

External CSS: Separate .css file linked with <link>.

Inline CSS

Internal CSS

External CSS

CSS Selectors

- TAG SELECTOR
- ID SELECTOR
- CLASS SELECTOR

Styling Text in CSS

Font-family

font-size

font-weight

color

text-align

Styling Backgrounds in CSS

- background-color
- background-image
- background-repeat

Margins and Padding

Margins: Space outside an element.

Padding: Space inside an element.

Display Property

```
.block-element {
    display: block;
}

.inline-element {
    display: inline;
}
```

INTRODUCTION TO FLEXBOX

- Flexbox is a layout model that makes it easy to align items.
- Properties: display: flex;, justify-content, align-items.

Flexbox: Flex Direction

The flex-direction property defines the direction of the flex items: row, column.

MEDIA QUERIES IN CSS

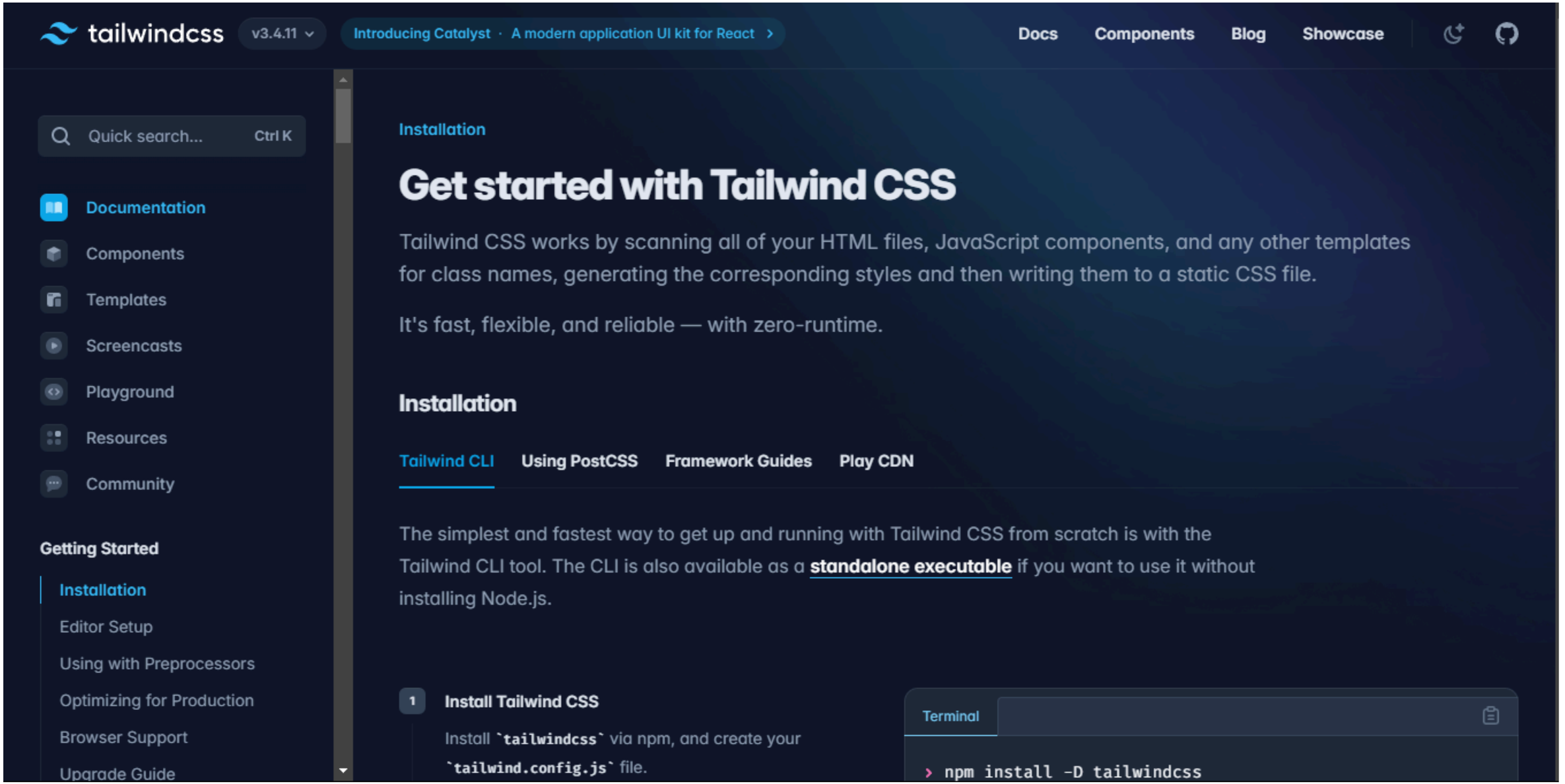
MEDIA QUERIES ALLOW YOU TO APPLY STYLES BASED ON DEVICE SIZE.

```css
@media (max-width: 600px) {
  body {
    background-color: lightblue;
  }
}
```

Introduction to Tailwind CSS

Tailwind CSS

TALWIND CSS


tailwindcss
v3.4.11
Introducing Catalyst · A modern application UI kit for React
Docs
Components
Blog
Showcase
Quick search...
Ctrl K
Documentation
Components
Templates
Screencasts
Playground
Resources
Community
Getting Started
Installation
Editor Setup
Using with Preprocessors
Optimizing for Production
Browser Support
Upgrade Guide
Installation
Get started with Tailwind CSS
Tailwind CSS works by scanning all of your HTML files, JavaScript components, and any other templates for class names, generating the corresponding styles and then writing them to a static CSS file.
It's fast, flexible, and reliable — with zero-runtime.
Installation
Tailwind CLI
Using PostCSS
Framework Guides
Play CDN
The simplest and fastest way to get up and running with Tailwind CSS from scratch is with the Tailwind CLI tool. The CLI is also available as a standalone executable if you want to use it without installing Node.js.
1
Install Tailwind CSS
Install `tailwindcss` via npm, and create your `tailwind.config.js` file.
Terminal
> npm install -D tailwindcss