

Building websites with python

Sat, Jan 11
@ 2pm

whoami

Lance Stephens

- DevOps Engineer
- Pretty okay Pythonista 🐍
- Extracurriculars include:
 - Community organizing with Pythonistas (founder) and Coffee & Code
 - Going to concerts
 - Travel



“...the most luxuriant and the most extravagantly beautiful
alpine gardens I ever beheld in all my mountain-top wand...

—John Muir, conservationist, 1889

Agenda

- What is FastHTML?
- Why FastHTML?
- Overview
- Demo
- Practicum

Agenda

- What will *not* be covered (at least in the deck):
 - Python basics
 - Git/GitHub
 - DNS

What is FastHTML?

FastHTML is a Python library that abstracts lower level HTML, CSS, JavaScript, and HTMX in a Pythonic way.

What is FastHTML?

From the official docs:

FastHTML is a new next-generation web framework for fast, scalable web applications with minimal, compact code. It's designed to be:

- Powerful and expressive enough to build the most advanced, interactive web apps you can imagine.
- Fast and lightweight, so you can write less code and get more done.

What is FastHTML?

- Easy to learn and use, with a simple, intuitive syntax that makes it easy to build complex apps quickly.

What is FastHTML?

FastHTML apps are just Python code, so you can use FastHTML with the full power of the Python language and ecosystem.

FastHTML's functionality maps 1:1 directly to **HTML** and **HTTP**, but allows them to be encapsulated using good software engineering practices – so **you'll need to understand these foundations to use this library fully** [emphasis mine].

Features

- FastTags: 1:1 mapping of HTML tags
- PicoCSS: simplified CSS components similar to Tailwind
- MiniDataAPI Spec: simpler database wrapper API
- OAuth: single sign-on
- Routes: server-side routing similar to FastAPI and Flask
- WebSockets: two-way persistent connections

Why FastHTML?

- Gentler learning curve compared to traditional web development (HTML, CSS, JavaScript, Node.js, etc.)
- Easy transition from other Python web frameworks.
- Reactive websites are easier to build and maintain.
- More functionality compared to static sites.

Overview

HTML

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h1>This is a Heading</h1>
    <p>This is a paragraph.</p>
  </body>
</html>
```

This is a Heading

This is a paragraph.

```
<!DOCTYPE html>
<html>
  <head>
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  </body>
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This is a Heading

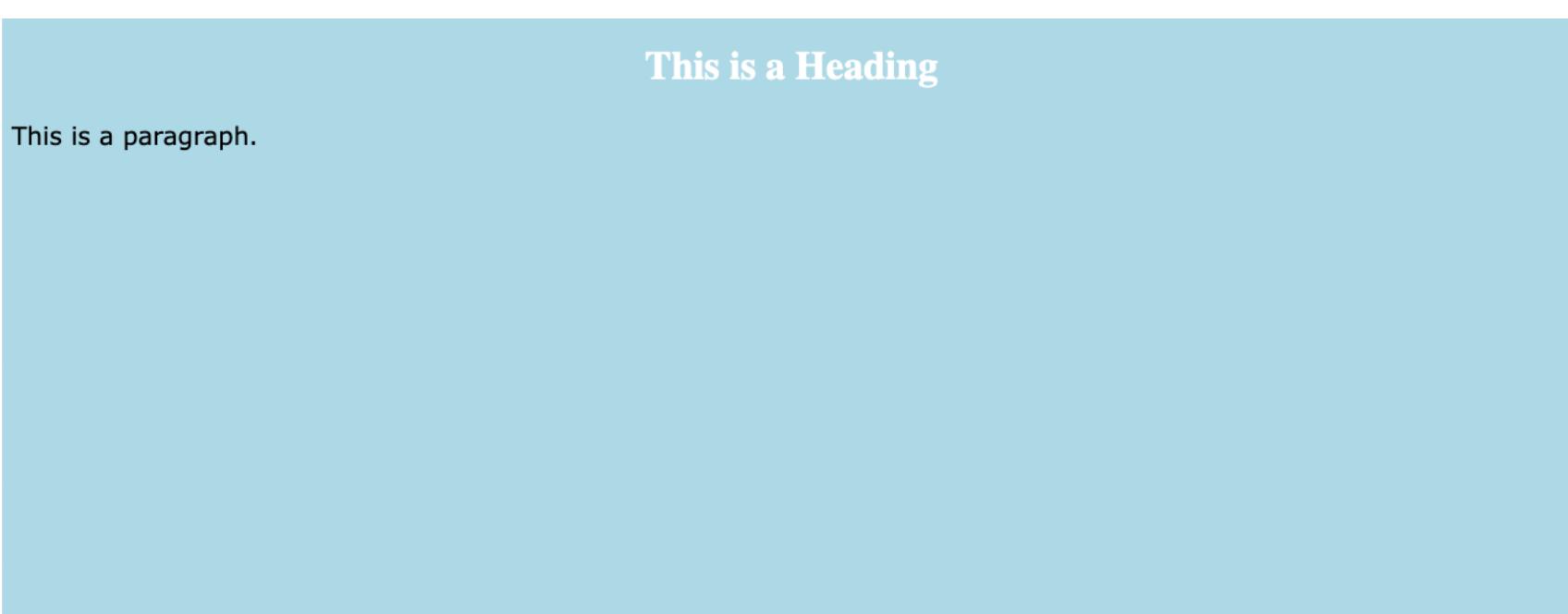
This is a paragraph.

CSS

```
body {  
    background-color: lightblue;  
}
```

```
h1 {  
    color: white;  
    text-align: center;  
}
```

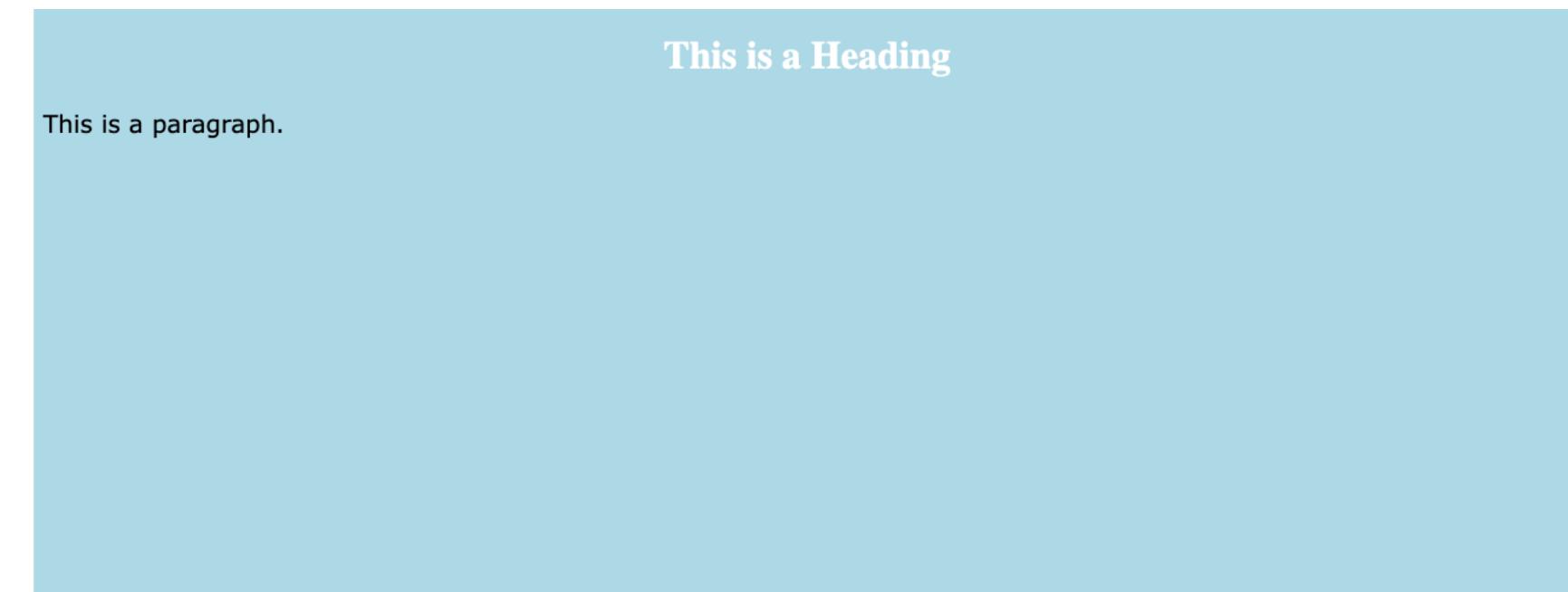
```
p {  
    font-family: verdana;  
    font-size: 20px;  
}
```



```
body {  
    background-color: lightblue;  
}
```

```
h1 {  
    color: white;  
    text-align: center;  
}
```

```
p {  
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body {  
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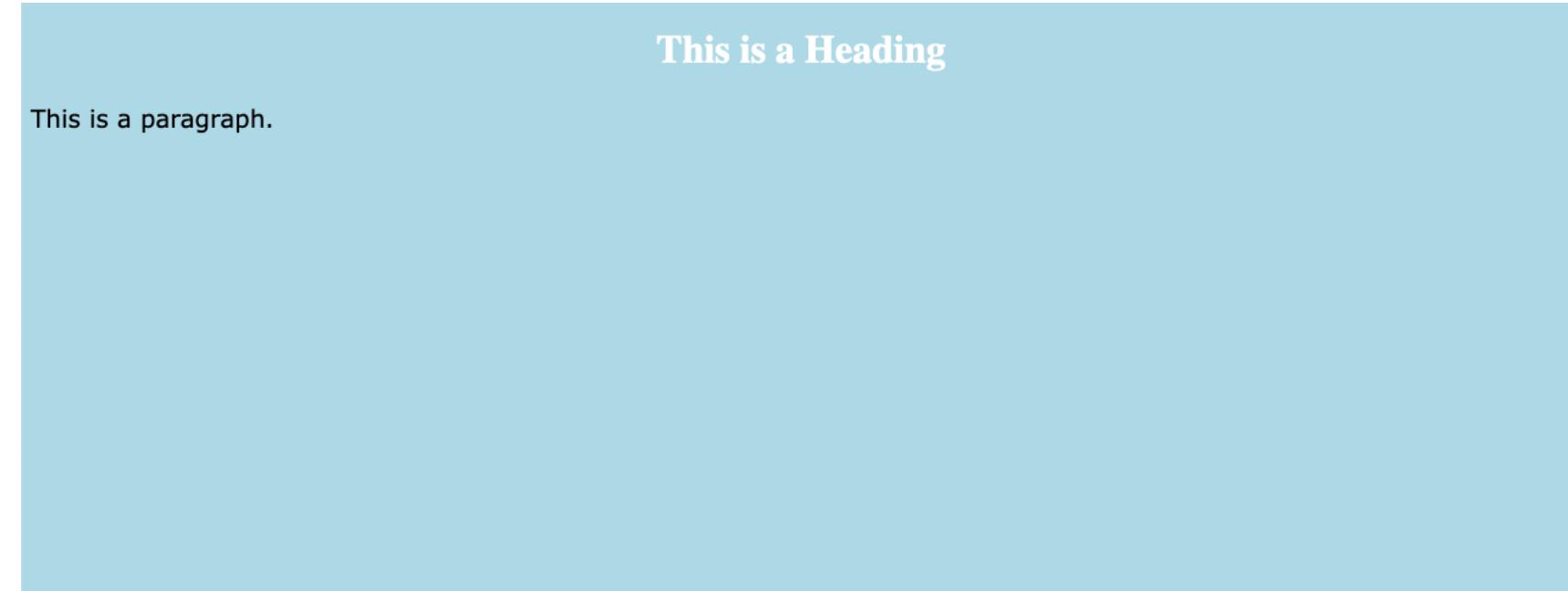
This is a paragraph.

This is a Heading

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p {  
    font-family: verdana;  
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}
```

This is a paragraph.

This is a Heading

JavaScript

```
<!DOCTYPE html>
<html>
  <body>
    <h2>My First JavaScript</h2>
    <button type="button"
      onclick="document.getElementById( 'demo' ).innerHTML = Date( )">
      Click me to display Date and Time.
    </button>
    <p id="demo"></p>
  </body>
</html>
```

My First JavaScript

Click me to display Date and Time.

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    </button>
    <p id="demo"></p>
  </body>
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My First JavaScript

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HTMX

(JavaScript* one more time with feeling)

What is HTMX

From the [docs](#):

htmx gives you access to **AJAX**, **CSS Transitions**, **WebSockets** and **Server Sent Events** directly in HTML, using attributes, so you can build modern user interfaces with the simplicity and power of **hypertext**

htmx is small (~14k min.gz'd), dependency-free, extendable & has reduced code base sizes by 67% when compared with react

```
<!DOCTYPE html>
<html>
  <head>
    <script src="https://unpkg.com/htmx.org@1.9.10"></script>
  </head>
  <body>
    <h2>My First HTMX</h2>
    <button
      hx-get="/time"
      hx-target="#demo"
      hx-trigger="click">
      Click me to display Date and Time.
    </button>
    <p id="demo"></p>
  </body>
</html>
```

My First HTMX

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My First HTMX

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Circling back to FastHTML

HTML, CSS, and JavaScript in FastHTML

```
from fasthtml.common import *
from pathlib import Path

css = Path("style.css").read_text()

javascript = """
function updateDateTime() {
    document.getElementById('demo').innerHTML = new Date().toLocaleString();
}
"""

app, rt = fast_app(
    hdrs=(
        Style(css),
        Script(javascript),
    )
)
@rt("/")
def get():
    return Titled("Page Title",
        H1("This is a Heading"),
        P("This is a paragraph"),

        H2("Date/Time Display"),
        Button(
            "Click me to display Date and Time",
            onclick="updateDateTime()"
        ),
        P(id="demo")
    )
serve()
```

Page Title

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This is a paragraph

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HTML , CSS , and HTMX in FastHTML

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from datetime import datetime

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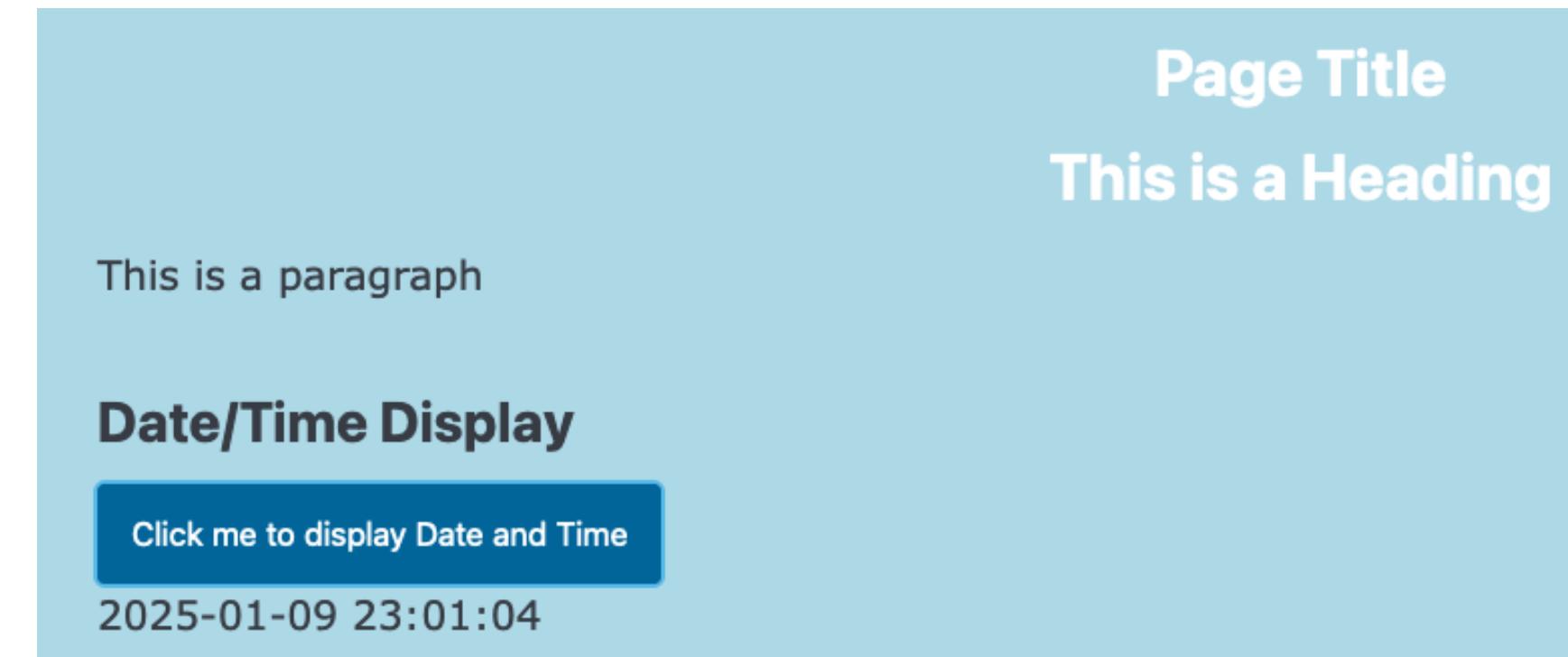
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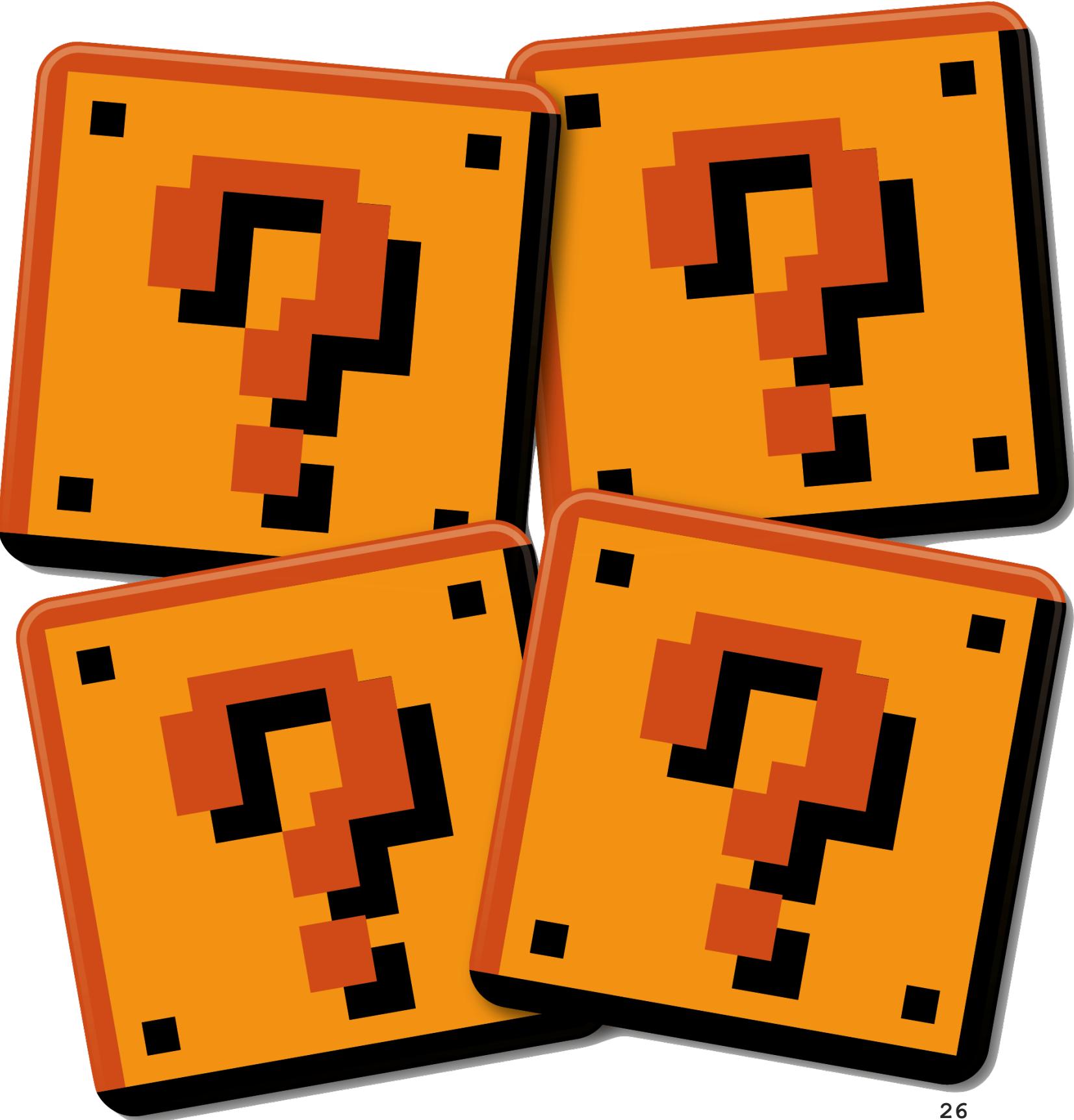
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Q&A



Thank you

Techlahoma

Further Reading

- FastHTML
- HTML
- CSS
- JavaScript
- HTMX

Repo



