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# Server-Driven Web Apps with htmx

Any Language,  
Less Code,  
Simpler Code



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# Preface

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Modern web development has become overly complicated. Popular frameworks have somewhat steep learning curves and often perform more work than necessary to achieve a desired result.

I have first hand experience with many web development approaches including vanilla JavaScript, jQuery, AngularJS, Angular, React, Vue, and Svelte. For me, each of these provided improvements over what came before. But these were incremental improvements.

I find htmx to be very different from these frameworks and libraries. It is a breath of fresh air that I'm excited to share with you! Let's discover how htmx simplifies web development, resulting in applications that are easier to understand and require less code.

Modern web frameworks for implementing single-page applications (SPAs) frequently encourage the following steps:

- The browser downloads somewhat large amounts of JavaScript code.
- User interaction triggers sending an HTTP request to a server endpoint.
- The endpoint queries a database.
- Data from the database is converted to JSON.
- The endpoint returns a JSON response.
- JavaScript running in the browser parses the JSON into a JavaScript object.
- The framework generates HTML from the JavaScript object and inserts it into the DOM.

Htmx is a client-side JavaScript library that simplifies this process. The name is short for “HyperText Markup eXtensions”.

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## Glossary web application terms

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If you've forgotten some of these acronyms, here's a quick reminder:



- *HTTP* — Hypertext Transfer Protocol, the protocol used to send requests from a web browser to a server
- *JSON* — JavaScript Object Notation, a data format based on JavaScript objects
- *DOM* — Document Object Model, a tree of JavaScript objects that represent the structure of a document in a format such as HTML

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With `htmx`, endpoints convert data to HTML (or plain text) rather than JSON, and that is returned to the browser. JavaScript in the browser no longer needs to parse JSON and generate HTML from it. It merely needs to insert the HTML into the DOM. A full page refresh is not necessary.

The `htmx` library is quite small – less than 17KB minified and compressed. Pages load faster due to downloading less JavaScript code than when using typical SPA frameworks. You can see these improvements with app metrics such as “First Contentful Paint” and “Time to Interactive”. `Htmx` applications also provide faster server interactions, because time spent generating and parsing JSON is eliminated.

The fact that `htmx` endpoints generate HTML, means that `htmx` moves a large portion of web development from the client to the server.

`Htmx` keeps most of the application state on the server. State that is only of concern to the user interface, such as hiding and showing content, can remain on the client. But client-only state is typically a small portion of the overall state.

## Required Knowledge

Now that you understand some of the benefits of using `htmx`, let's discuss what you need to know to use it.

It is useful to have some knowledge of the following:

- a code editor such as VS Code or Vim
- HTML for specifying what will be rendered in the browser
- CSS for styling what is rendered

- some programming language for implementing HTTP endpoints
- HTTP basics such as verbs, requests, and responses
- command-line basics such as changing the working directory and starting a local server

If you are not already a full-stack developer, using htmx will provide motivation to move in that direction. Front-end web developers will become comfortable with implementing server endpoints. Back-end developers will become comfortable with HTML and CSS.