Django and htmx

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🍀 Four part talk

1. A brief history of HTML
2. How to use htmx
3. django-htmx
4. htmx versus React &c.

Part One

🕰️ A brief history of HTML 💾

HTML step 1

📄 Documents

```
<!doctype html>
<html>
  <head>
    <title>My web page</title>
  </head>
  <body>
    <h1>Adam's web site</h1>
    <p>👋 <strong>Welcome</strong> to my web site</p>
  </body>
</html>
```

Look nice, but static.

HTML step 2

🔗 Hyperlinks

```
<p>
  For more information see
  <a href=https://djangoproject.com>the Django website</a>
</p>
```

We can go places!

Puts the "hyper" in "HyperText Markup Language".

Contents

See also

Tim Berners-Lee

Biography

Sir Tim Berners-Lee invented the World Wide Web in 1989.

He is the co-founder and CTO of Inrupt.com, a tech start-up which uses, promotes and helps develop the open source Solid platform. Solid aims to give people control and agency over their data, questioning many assumptions about how the web has to work. Solid technically is is new level of standard at the web layer, which adds things never put into the original spec, such as global single sign-on, universal access control, and a universal data API so that any app can store data in any storage place. Socially Solid is a movement away from much of the issues with the current WWW, and toward a world in which users are in control, and empowered by large amounts of data, private, shared, and public.

Sir Tim is the Director of the World Wide Web Consortium (W3C), a Web standards organization founded in 1994 which develops interoperable technologies (specifications, guidelines, software, and tools) to lead the Web to its full potential. He is a Director of the World Wide Web Foundation which was launched in 2009 to coordinate efforts to further the potential of the Web to benefit humanity.

A graduate of Oxford University, Sir Tim invented the Web while at CERN, the European Particle Physics Laboratory, in 1989. He wrote the first web client and server in 1990. His specifications of URIs, HTTP and HTML were refined as Web technology spread.

He is the 3Com Founders Professor of Engineering in the School of Engineering with a joint appointment in the Department of Electrical Engineering and Computer Science at the Laboratory for Computer Science and Artificial Intelligence (CSAIL) at the Massachusetts Institute of Technology (MIT) where he co-leads the Decentralized Information Group (DIG).

The Decentralized Information Group, works on the Solid Project to give people control of their own data and to re-decentralize the Web. He is the co-founder and CTO of inrupt, the company launched to ensure the success of the Solid platform and its open source community, and to build the ecosystem that supports it.

HTML step 3

📝 Forms

```html
<form method=get action=search>
  <input name=query placeholder="Search for...">
  <button type=submit>Go</button>
</form>
```

We can go to more places, and change things!

...but forms are limited. 😪

- Limited triggers
- Require interaction
- Fixed HTTP verbs

HTML step 4

🖼️ Frames

```
<iframe src=/article/123/content/></iframe>
<iframe src=/article/123/comments/></iframe>
```

We can reload just part of the page at a time!

Links and forms can target frames

Products Home

Pitcairn Honey

Honey Soap

Honey & Propolis Soap

Propolis Tincture

Visit also:
The Pitcairn Office

Pitcairn Island Pure Honey

"With all the natural sweetness of tropical fruits and flowers"

Pitcairn Island Pure honey is packaged in 250g jars. The price per jar is NZ$20.00 (minimum order 2 jars). There is a charge of NZ$3.00 packaging per order + postage as listed below

In May 1998, the UK Government aid agency, the Department for International Development, funded an apiculture programme for Pitcairn which included training for Pitcairn's bee keepers and a detailed analysis of the disease status of Pitcairn bees and honey. As a result, Pitcairn is now able to export honey products to New Zealand and beyond.

Pitcairn has one of the most disease free bee populations of anywhere in the world and the honey produced is of an exceptionally high quality. The apicultural scientist conducting the project, also found that Pitcairn bees were a particularly placid variety and within a short time, was able to work with them wearing minimal protection. It would therefore seem that the export of live Queen bees is another potential earner for the Pitcairn Islanders. The numbers of hives on the island is now around 60, with potential for perhaps 5 times that amount.

The rich and intense fruitiness of Pitcairn's honey is attributed to the nectar from the Mango, Lata, Passion Flower, Guava and Roseapple flowers found in abundance on Pitcairn.

New! Subscribe to our free mailing list to receive the latest news about honey products, shipping from the island, latest dates for ordering etc.

Name:

Email:

my74n3

Enter the code above here :

Can't read the image? click here to refresh

Join!

…but frames suck. 😪

- Fixed size rectangles
- Extra resource consumption
- Changes restricted to individual frames

htmx: HTML extended

```html
<h3>Latest tweets</h3>
<ul id=latest-tweets>
  <li>use django - @adamchainz</li>
</ul>
<button hx-get=/latest-tweets/ hx-target=#latest-tweets>
  Update
</button>
```

We can use *any* event to load content from *any* URL into *any* element!

</> htmx

high power tools for HTML

introduction

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 (~10k min.gz'd), dependency-free, extendable & IE11 compatible

motivation

- Why should only `<a>` and `<form>` be able to make HTTP requests?
- Why should only `click` & `submit` events trigger them?

History of htmx

- Started April 2020, Version 1.0.0 November
- Rewrite of intercooler.js (2013)
- Alternatives: Unpoly, Hotwire

Part Two

🤠 How to use htmx 🤷

We need:

- Web framework: Django, Flask, or really anything
- htmx script tag

That's it!

htmx setup

Add to any page:

```
<script src="{% static 'js/htmx.min.js' %}" defer></script>
```

Most projects need no more scripts.

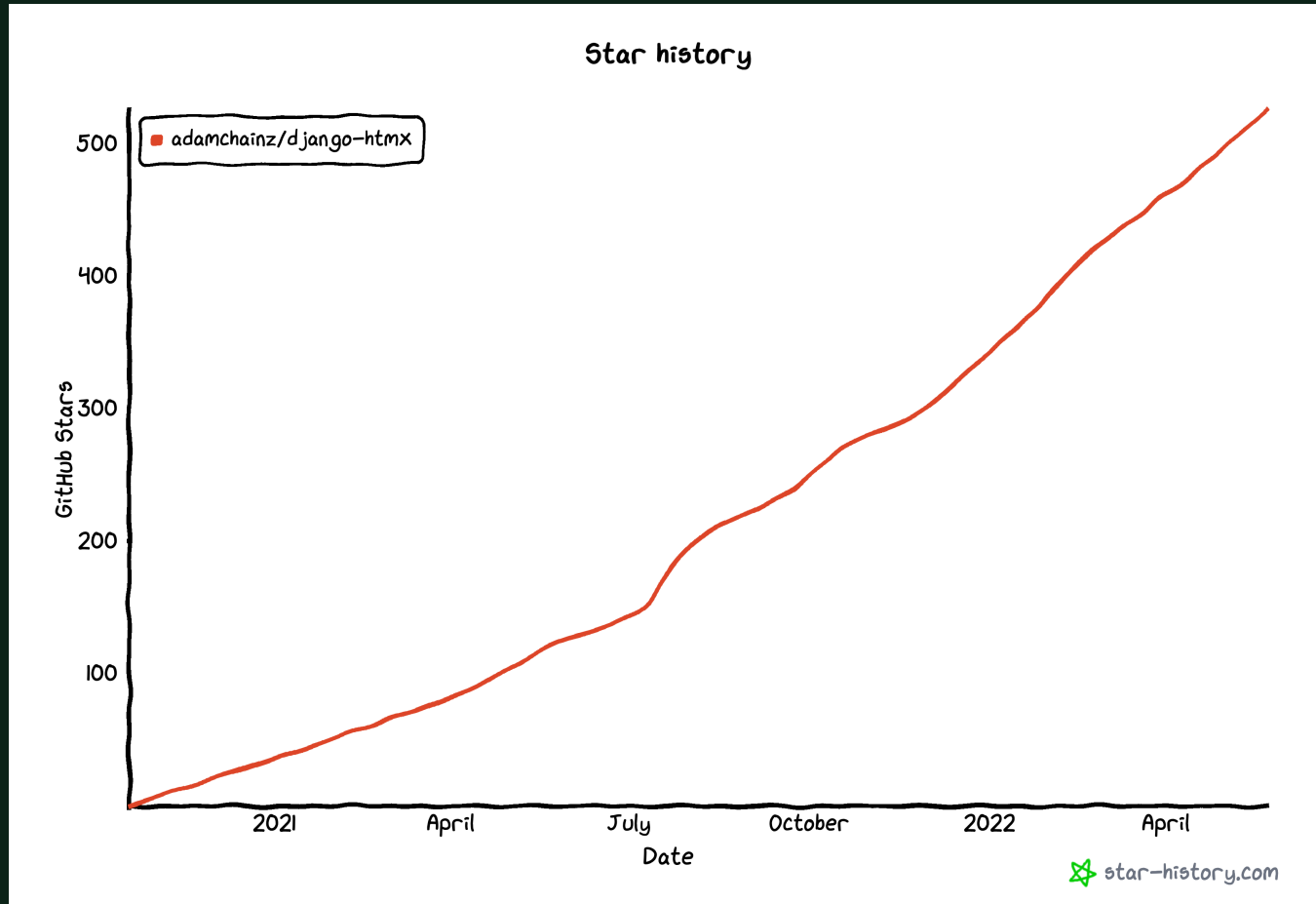Can be used alongside any other scripts/frameworks.

Examples

Many at htmx.org/examples

1. Click to Load
2. Cascading Selects
3. Active Search

Part Three

🦄 django-htmx 🏷️

Extensions for using Django with htmx

HtmxMiddleware

Detect requests from htmx:

```python
def my_view(request):
    if request.htmx:
        template_name = "partial.html"
    else:
        template_name = "complete.html"
    return render(template_name, ...)
```

HtmxMiddleware

React to the triggering element's ID:

```python
def perform_search(request):
    if request.htmx.trigger == "quick-search":
        ...
    else:
        ...
```

Extension Script

See Django's error pages for htmx requests:

```
<script src="{% static 'js/htmx.min.js' %}" defer></script>
{% django_htmx_script %}
```

ZeroDivisionError at /error-demo/trigger/

division by zero

Request Method:	GET
Request URL:	http://localhost:8001/error-demo/trigger/
Django Version:	4.0.3
Exception Type:	ZeroDivisionError
Exception Value:	`division by zero`
Exception Location:	/Users/chainz/Documents/Projects/django-htmx/example/example/core/views.py, line 65, in error_demo_trigger
Python Executable:	/Users/chainz/Documents/Projects/django-htmx/example/venv/bin/python
Python Version:	3.10.4
Python Path:	`['/Users/chainz/Documents/Projects/django-htmx/example',`
	`'/Users/chainz/.pyenv/versions/3.10.4/lib/python310.zip',`
	`'/Users/chainz/.pyenv/versions/3.10.4/lib/python3.10',`
	`'/Users/chainz/.pyenv/versions/3.10.4/lib/python3.10/lib-dynload',`
	`'/Users/chainz/Documents/Projects/django-htmx/example/venv/lib/python3.10/site-packages',`
	`'/Users/chainz/Documents/Projects/django-htmx/src']`
Server time:	Mon, 23 May 2022 16:09:08 -0500

Traceback   [Switch to copy-and-paste view](#)

/Users/chainz/Documents/Projects/django-htmx/example/venv/lib/python3.10/site-packages/django/core/handlers/exception.py, line 55, in inner

```
55.                    response = get_response(request)                    …
```

▶ Local vars

/Users/chainz/Documents/Projects/django-htmx/example/venv/lib/python3.10/site-packages/django/core/handlers
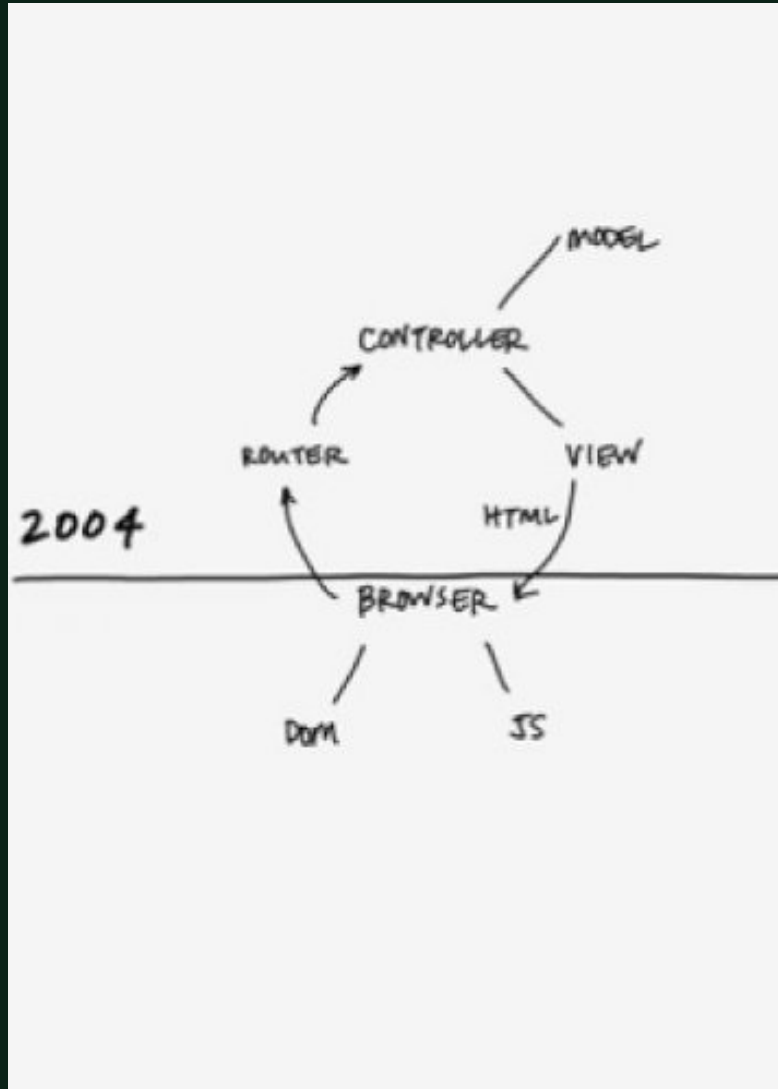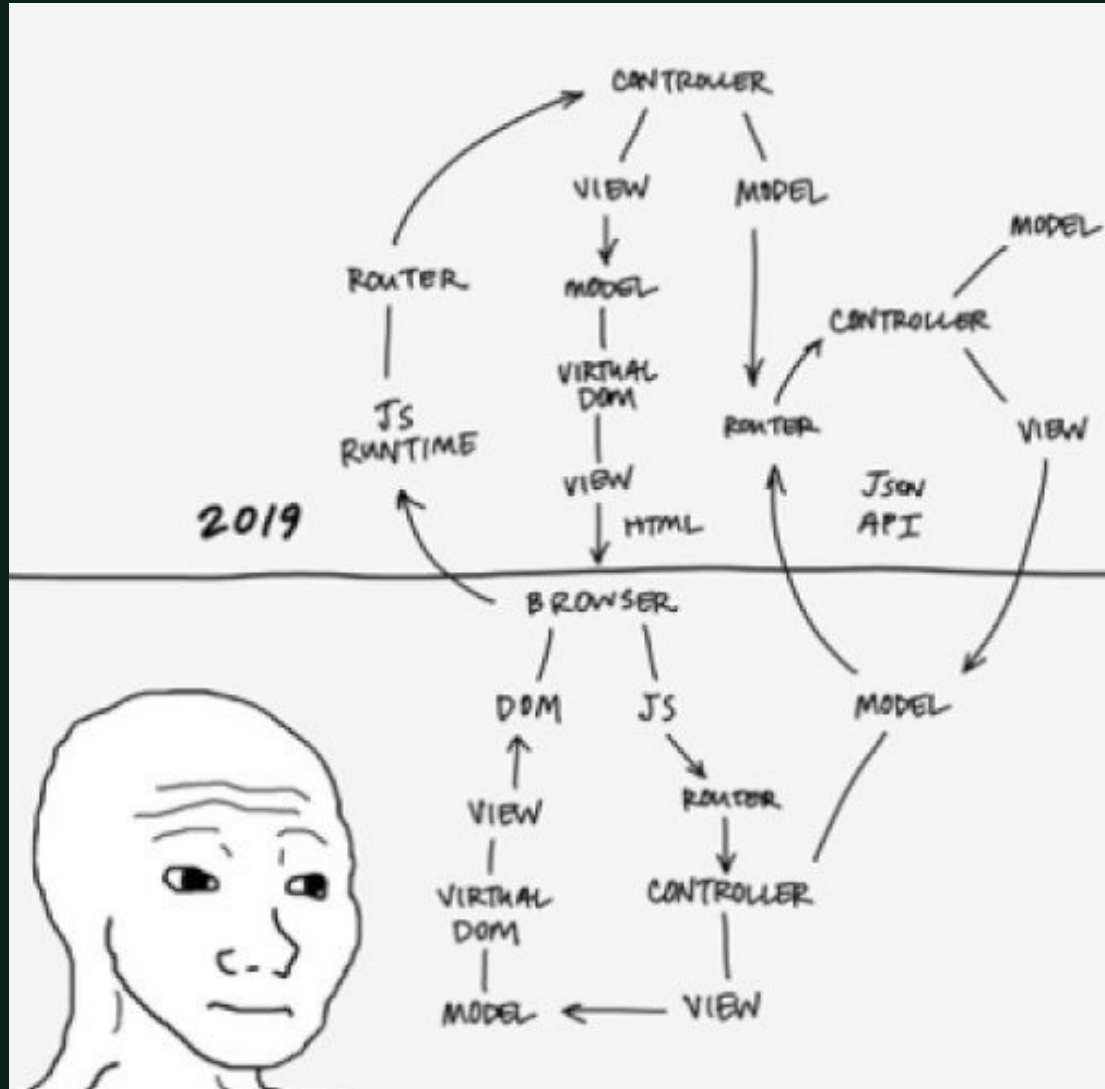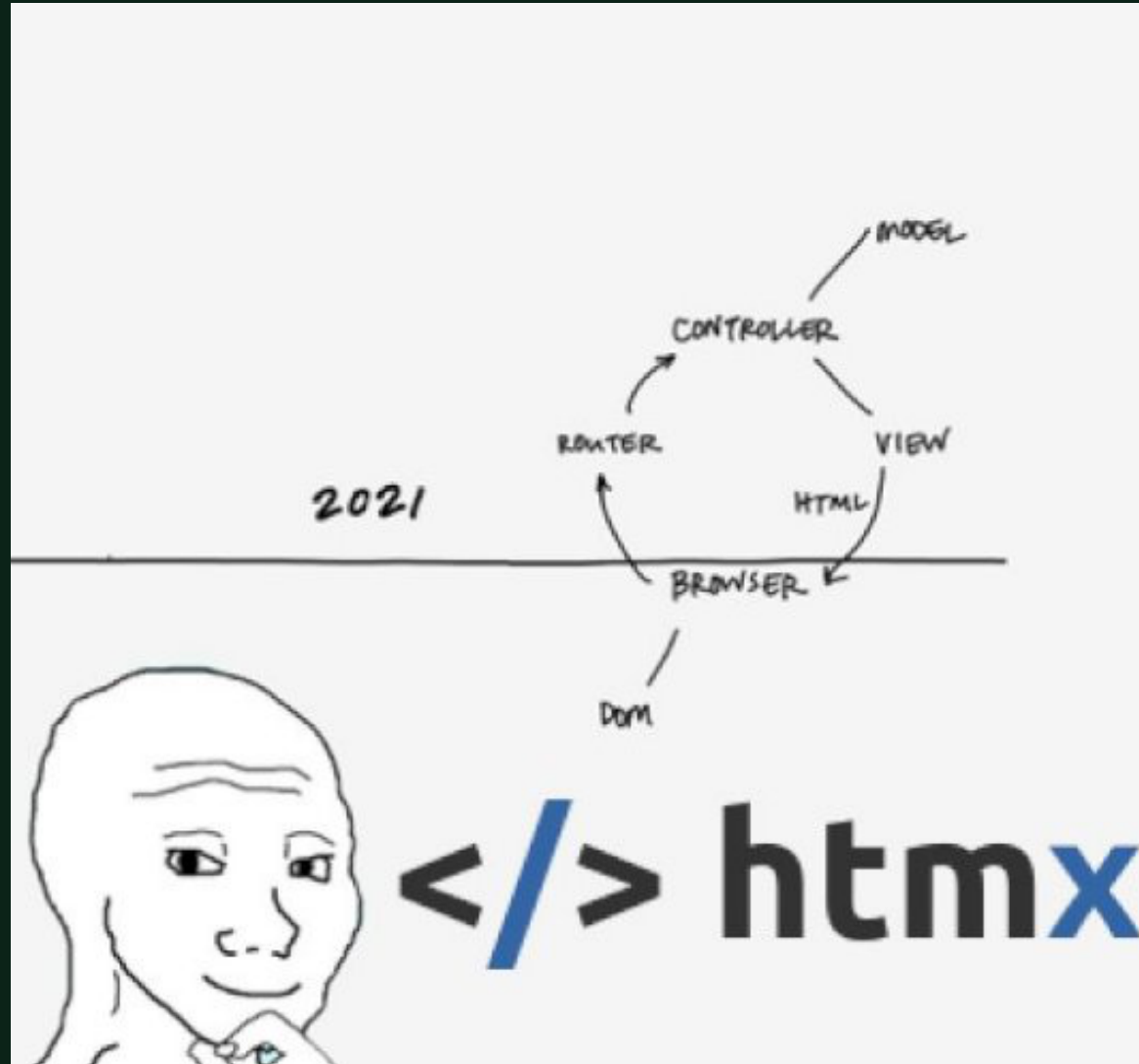
Part Four

⚖️ htmx versus React &c. ⚛️

Traditional HTML model

React &c. model

htmx Model

htmx &c.	React &c.
Websites	"Applications"
Small teams	Huge teams
Any language	JavaScript
Additive	Prescriptive

Thank you! 🤗

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- github.com/adamchainz/talk-django-and-htmx