

# Headless CMS for Designing Connected Content (Jamstack)

**Group 2:**

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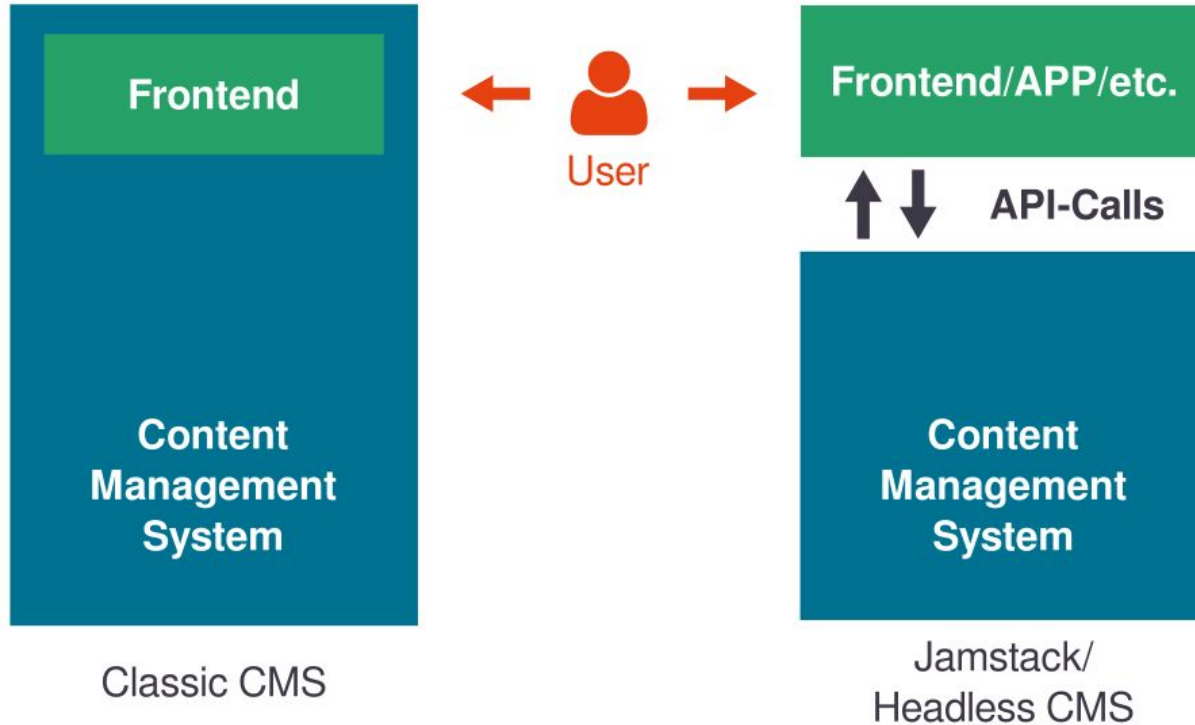
**Information Architecture and Web Usability WS 2024/2025**

26.11.2024

# Survey

- Simple conference website.
- One frontend, multiple backends.
- API comparison.
- CMS comparison.

# Traditional Architecture compared to Jamstack



# What is Jamstack? <sup>1</sup>

- JAM = JavaScript, API, and Markup.
- Decoupling of web layer from business logic.
- Custom logic and 3rd party services are consumed via APIs.
- Improves flexibility, scalability, performance, and maintainability.

<sup>1</sup> Netlify, Inc. (2024). *For fast and secure sites | Jamstack*. Jamstack.org. Retrieved October 26, 2024, from <https://jamstack.org>

# API Comparison

## REST

- Traditional API standard.
- One resource per endpoint.
- Easy to understand.
- Stateless.
- Prone to over- and underfetching.
- Returns JSON objects.

## GraphQL

- Query language for more efficient data retrieval.
- Endpoints can return multiple resources.
- Very flexible.
- Higher setup complexity.
- Returns JSON objects.

# Content Model

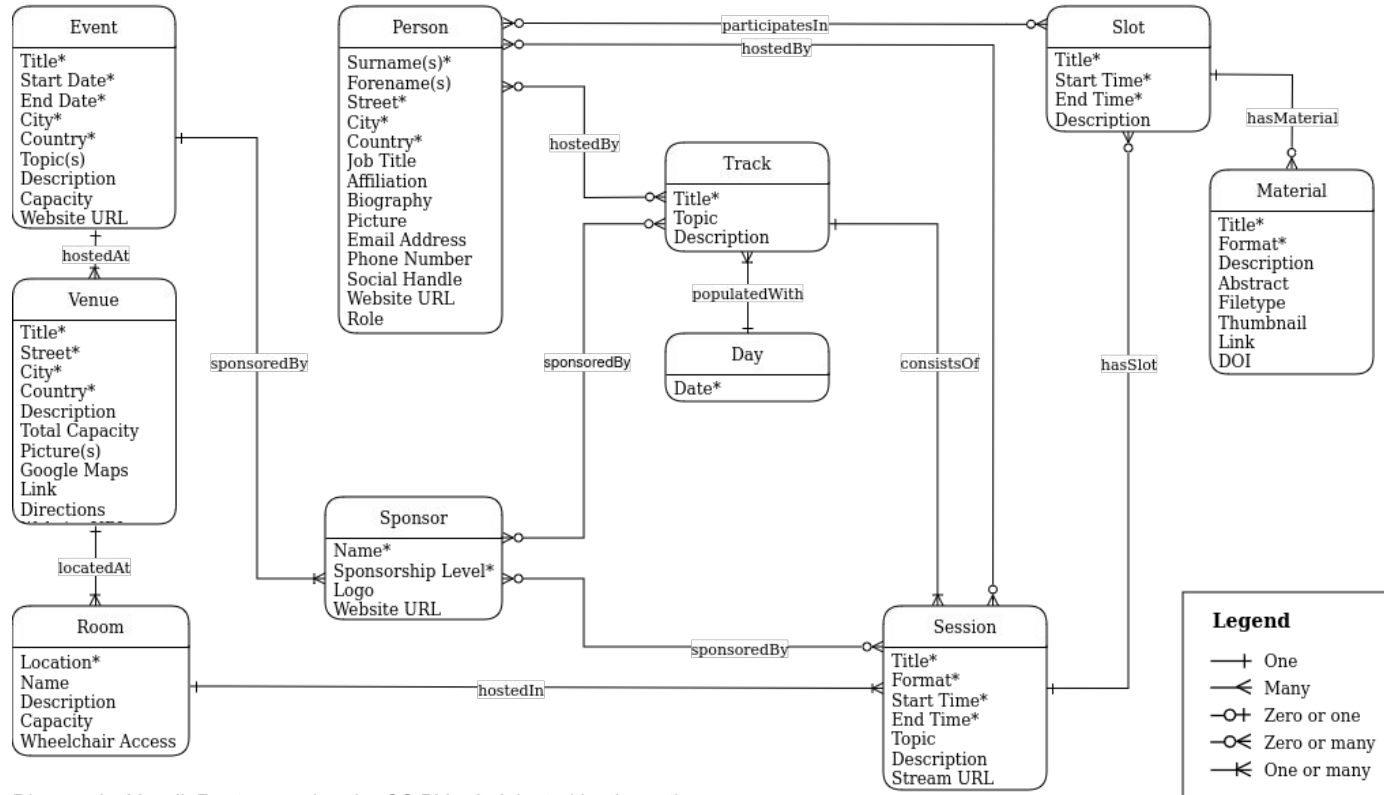


Diagram by Yannik Rauter, used under CC BY 4.0; Adapted by the authors.

# Welcome 🙌

We hope you are making progress on your project! Feel free to read the latest news about Strapi.  
We are giving our best to improve the product based on your feedback.

See more on the blog [↗](#)



Strapi Cloud

Fully-managed cloud hosting for your Strapi project.

# Strapi Live Demo



Documentation

Discover the essential concepts, guides and instructions.

<https://www.youtube.com/watch?v=FkfnN8f52U>



Code examples

Learn by testing real projects developed the community.

## Join the community

Discuss with team members, contributors and developers on different channels.

See our roadmap [↗](#)



Github



Discord



Reddit



Twitter



Forum



Blog



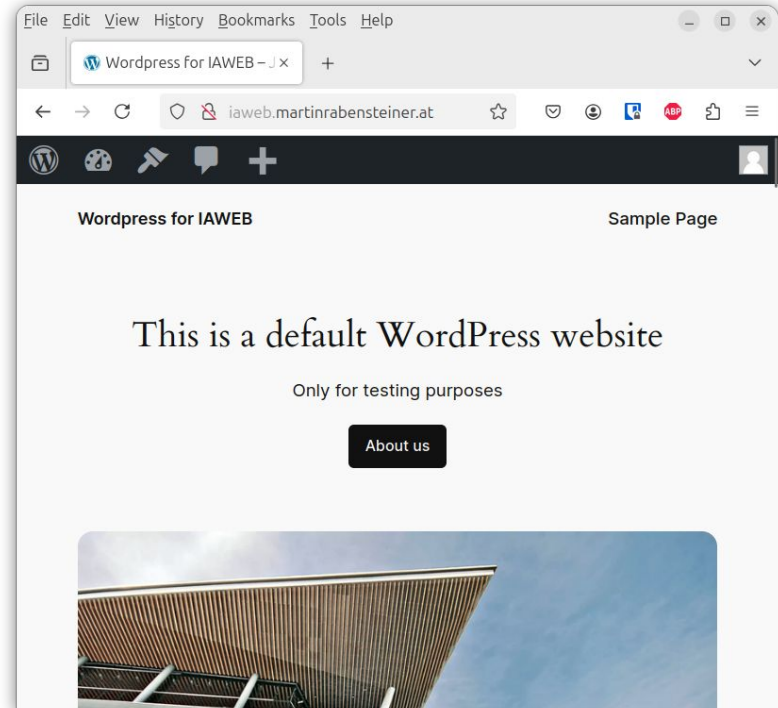
We are hiring!



Get help

# Wordpress

- One of the most popular CMS.
- Comes with an REST API.
- Very plugin-based (possible compatibility issues).
- Cannot disable front-end by default - PHP/CSS or a third-party theme necessary.
- Demo:  
<https://www.youtube.com/watch?v=I3YIYsBxtR4>





# Wordpress - Custom Fields

- Very sparse OOTB custom fields functionality (key - value).
- Programming or plugin needed.
- “Secure Custom Fields” (SCF)
  - <https://de.wordpress.org/plugins/advanced-custom-fields/>
  - Maintained by Wordpress.
  - Used to be “Advanced Custom Fields” (ACF).



# Wordpress - Backend Editing

The screenshot shows the WordPress 'People' management interface. On the left is a dark sidebar with navigation items: Dashboard, Posts, Media, Pages, Comments, Days, Event, Materials, People (highlighted), All People, Add New Person, Rooms, Session, and Slots. The main content area is titled 'People' and includes an 'Add New Person' button. Below the title, it shows 'All (2) | Published (2)'. There are controls for 'Bulk actions' (a dropdown menu) and 'Apply', along with a filter for 'All dates'. A table lists two people:

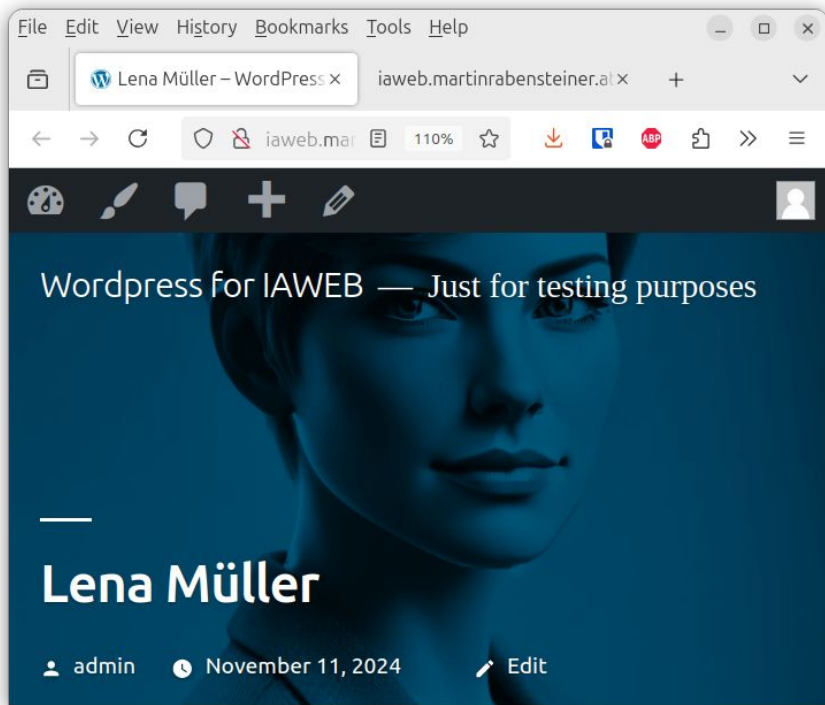
<input type="checkbox"/>	Title
<input type="checkbox"/>	<b>Lena Müller</b> Lorem ipsum dolor sit amet, consetetur sa Stet clita kasd gubergren, no sea takimata aliquyam erat, sed diam voluptua. At vero <a href="#">Edit</a>   <a href="#">Quick Edit</a>   <a href="#">Trash</a>   <a href="#">View</a>
<input type="checkbox"/>	<b>Michael Johnson</b> Lorem ipsum dolor sit amet, consetetur sa Stet clita kasd gubergren, no sea takimata aliquyam erat, sed diam voluptua. At vero <a href="#">Edit</a>   <a href="#">Quick Edit</a>   <a href="#">Trash</a>   <a href="#">View</a>
<input type="checkbox"/>	Title

At the bottom of the table, there are 'Bulk actions' (a dropdown menu) and 'Apply' buttons.

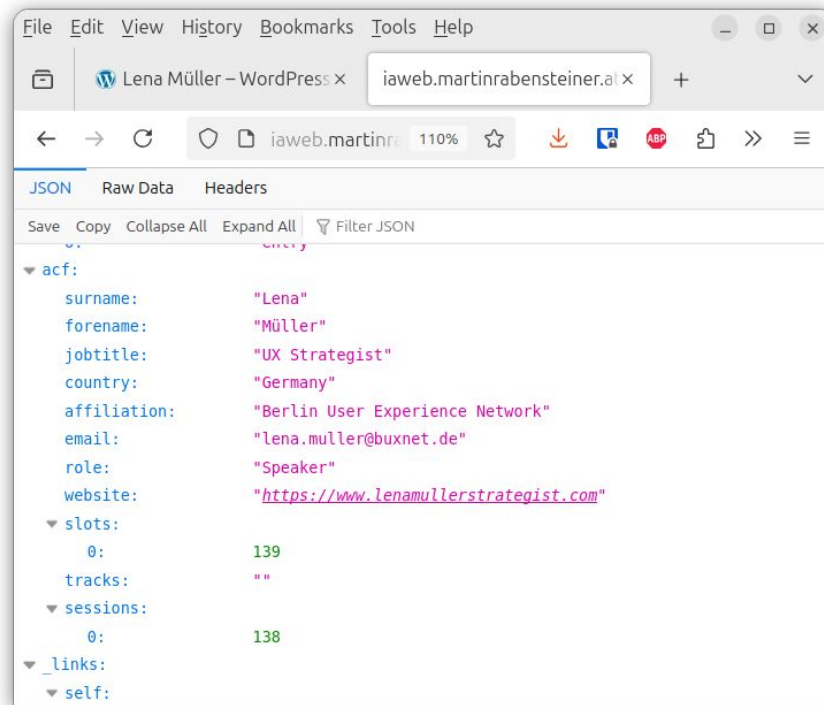
The screenshot shows the profile editing form for a user. It consists of several sections, each with a text input field:

- Affiliation:** Berlin User Experience Network
- Email:** lena.muller@buxnet.de
- Role:** Speaker (dropdown menu)
- Website:** [www.lenamullerstrategist.com](http://www.lenamullerstrategist.com)
- Slots:** Welcome Slot (with a close icon 'x')

# Wordpress - Frontend / API



<http://iaweb.martinrabensteiner.at/person/lena-mueller/>



<http://iaweb.martinrabensteiner.at/wp-json/wp/v2/person/140>

# Front-end

# Front-end Theming

- “UX Las Vegas”
- Conference for UI/UX designers.
- Displays schedule, venues and sponsors.
- Creates dynamic routes based on CMS content.



# Astro - Static Site Generator

- Fast and modern web framework.
- Zero JS by default:
  - Dynamic content via “Islands”.
- Static first approach.
- UI-agnostic

# Static Site Generator (SSG)

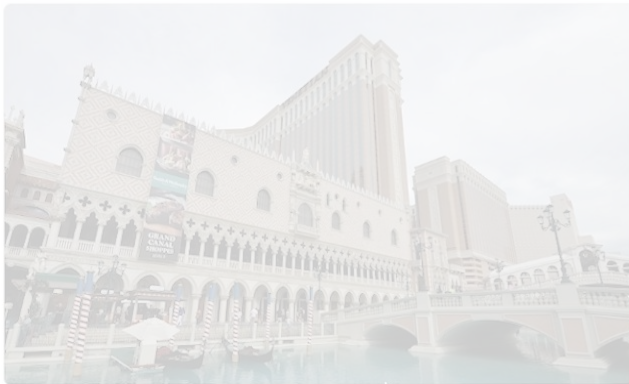
- Sites are pre-rendered at build time.
- Allows for very fast loading times.
- Cannot display dynamic content.
- Possible Solution: Server-Side Rendering

# Server-Side Rendering (SSR)

- Renders pages on-demand.
- Allows for dynamic and user-specific content.
- CMS could be switched on demand:
  - High effort due to API incompatibilities.
- Does not take advantage of Astro's USP.



## Venues



### The Venetian Resort

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3355 S Las Vegas Blvd, Las Vegas, United States of America

[Image licensing here](#)

# Frontend Live Demo



### The Wynn

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3131 Las Vegas Blvd S, Las Vegas, United States of America

[Image licensing here](#)



### Caesars Palace

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# Results and Recommendations

# Survey Results - CMS

## Strapi

- Modern.
- Easy to understand.
- Easy to work with.
- No plugins needed.

## Wordpress

- Well known.
- Large community.
- Plugins or programming skills needed for custom fields.
- Plugin needed for frontend deactivation.
- Still feasible.

# Survey Results - API

## REST

- Easier for small projects.
- Not as scalable.
- Built-in in most systems.

## GraphQL

- Unnecessarily complex for small projects.
- No fetching overhead.
- Faster for a large amount of data.

# Survey Results - Astro

## Pros:

- Dynamic Content using “Islands”.
- Framework independent components.
- Dynamic route generation.
- Good documentation.

## Cons:

- Not best choice for user-centric websites.
- Highly dynamic applications would lose most SSG advantages.

# Recommendations

- Strapi
  - Easier to set up.
- REST API
  - Faster for small projects.
- Astro
  - Simple and fast SSG.

**Questions?**