Technology Documentation

Server Technologies

Django

As a high-level Python web framework, Django emphasizes rapid development and clean design, making it an excellent choice for building scalable applications. With built-in features like authentication, an ORM, and an admin panel, it streamlines backend development and reduces reliance on third-party dependencies. When combined with HTMX and AlpineJS, Django enables dynamic content rendering with minimal JavaScript overhead. Additionally, several team members are already familiar with Django.

PostgreSQL

PostgreSQL is a powerful open-source relational database known for its reliability, extensibility, and ability to handle complex queries efficiently. It integrates seamlessly with Django's ORM, ensuring efficient data management. When used alongside Nginx and Gunicorn, PostgreSQL enables the system to manage high-concurrency workloads while maintaining data consistency. Additionally, several team members are already familiar with PostgreSQL.

Nginx

As a high-performance web server, Nginx optimizes request handling, load balancing, and traffic management. It efficiently serves static files and improves security when placed in front of Gunicorn. When integrated with PostgreSQL, Nginx ensures seamless and scalable deployments, enabling high-traffic applications to run efficiently under heavy loads. Additionally, several team members are already familiar with Nginx.

Gunicorn

Gunicorn is a Python WSGI server that runs Django applications efficiently in production. It handles multiple requests asynchronously and works well with Nginx to improve performance and reliability. While Gunicorn serves Django's application logic, Nginx manages static assets and handles request routing. Additionally, several team members are already familiar with Gunicorn.

Frontend Technologies

AlpineJS

Unlike larger JavaScript frameworks that introduce significant complexity, AlpineJS provides a lightweight and reactive layer that enhances interactivity with minimal dependencies. When paired with HTMX, it enables declarative UI logic and reduces the need for excessive JavaScript.

HTMX

HTMX allows for dynamic content updates via AJAX, WebSockets, and SSE without relying on heavy JavaScript frameworks. It pairs well with Django templates to create seamless and interactive pages. HTMX also integrates well with AlpineJS, enabling efficient event handling with minimal scripting.

Bootstrap

Bootstrap is a widely used front-end framework that simplifies responsive web design. It provides a robust and customizable styling approach, reducing the need for extensive custom CSS while ensuring consistency across projects. Bootstrap integrates seamlessly with Django templates, HTMX, and AlpineJS, offering a structured way to design modern interfaces efficiently. Additionally, several team members are already familiar with Bootstrap.

Authentication

AllAuth

Beyond simple authentication, Django AllAuth provides a comprehensive solution for user account management. When combined with Django and PostgreSQL, AllAuth delivers a robust authentication system that integrates seamlessly with modern web applications. I've also made a sample main about page and personal about page. They're pretty basic, but I feel like they still get the job done. We can use the main about page as a fallback in case we don't come up with something better by tomorrow.