CSE 408
Software Development Sessional

AuthentiDocs Architecture Presentation

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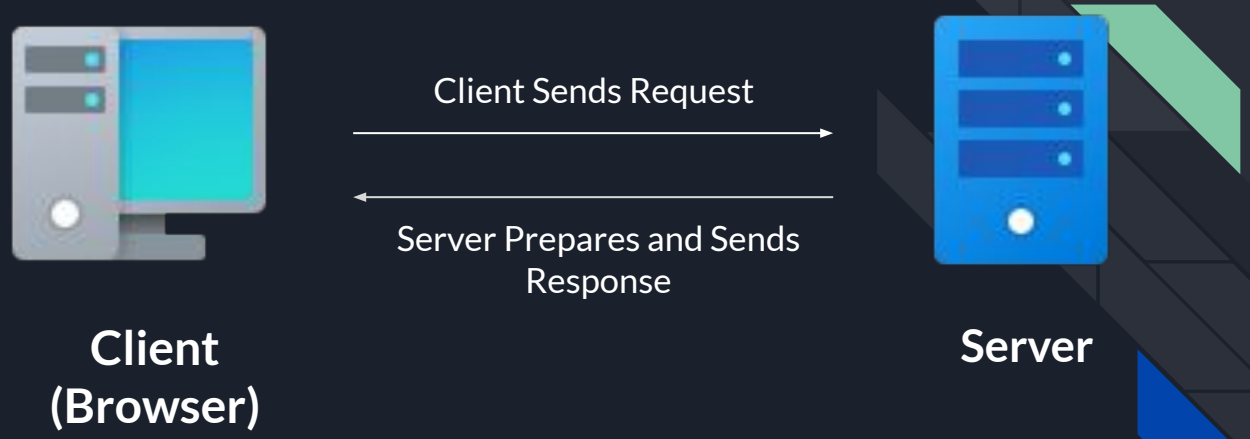
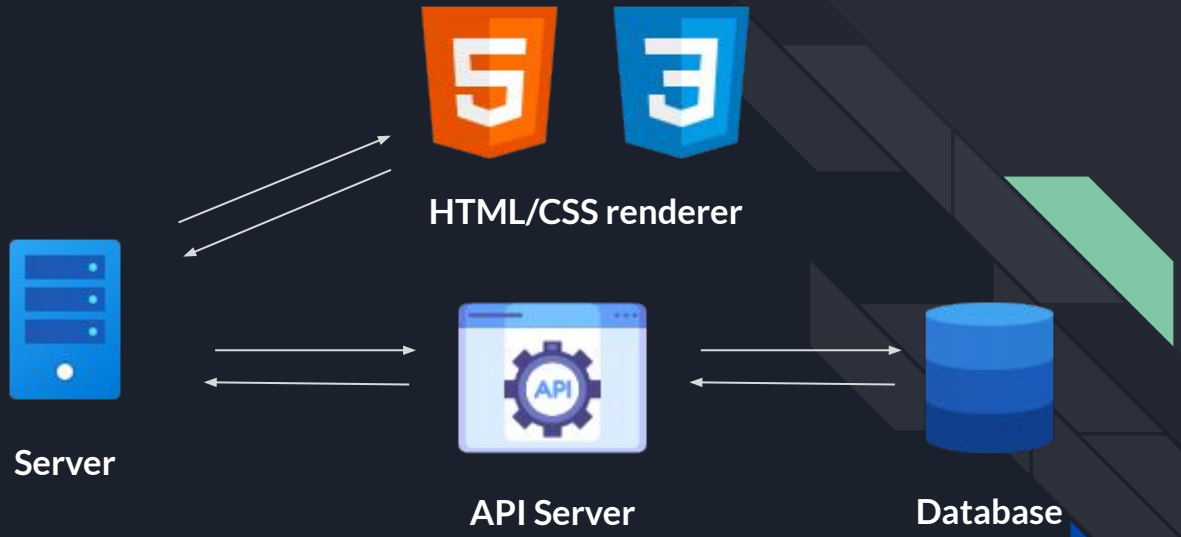
Architecture

Client-Server Architecture



Client-Server Architecture



Client-Server Architecture

- Functionalities organized into services
- Although in our cases, all services hosted by a single os service, except database
- Server hosts the html/css renderer as well as the api server which communicates with the database, which is hosted in another server
- Multiple servers doing the same task can be distributed which can act as load balancer
- All the independent server processes (which may or may not be in different machines) and the database hosts are the points of failure

Technology Stacks

At a glance:

- Backend Toolchain: **SvelteKit**
- Frontend Toolchain: **Svelte**
- Database: **PostgreSQL**
- Database Server: **Supabase**
- Deployed Server: **Vercel**

Why Svelte?

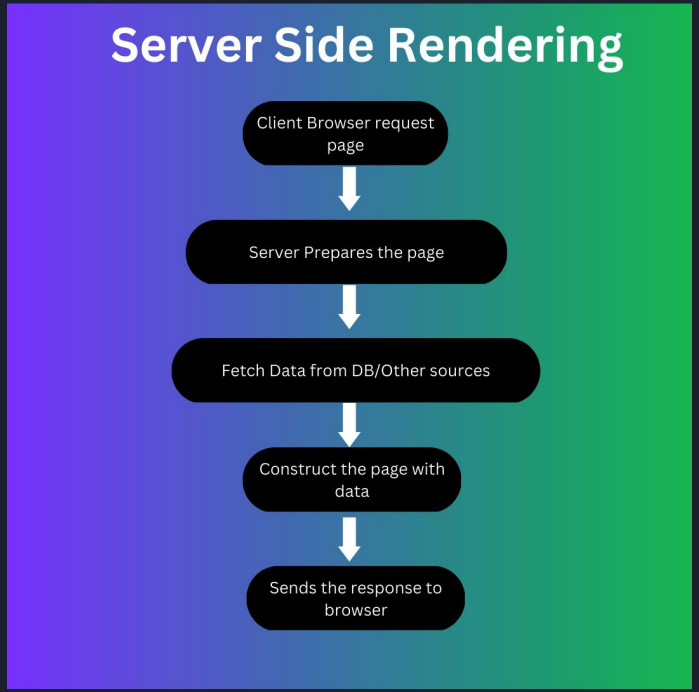
- ***Compiled :*** Svelte shifts as much work as possible out of the browser and into your build step. No more manual optimizations — just faster, more efficient apps.

- ***Compact :*** Write breathtakingly concise components using languages you already know — HTML, CSS and JavaScript. Oh, and your application bundles will be tiny as well

- ***Complete :*** Built-in scoped styling, state management, motion primitives, form bindings and more — don't waste time trawling npm for the bare essentials. It's all here.

What is Svelte & SSR?

SvelteKit is a framework for building apps using Svelte. You can use SvelteKit to build a variety of apps that can vary from being a Single page application (SPA) or Server Side Rendered (SSR) application and more. Svelte supports both Server Side Rendering and Client Side Rendering. But we are mostly interested in the interactive SSR of Svelte.



How SvelteKit Helps:

SvelteKit streamlines things by handling of complexity of the server and client on its own, allowing you to focus squarely on developing the app.

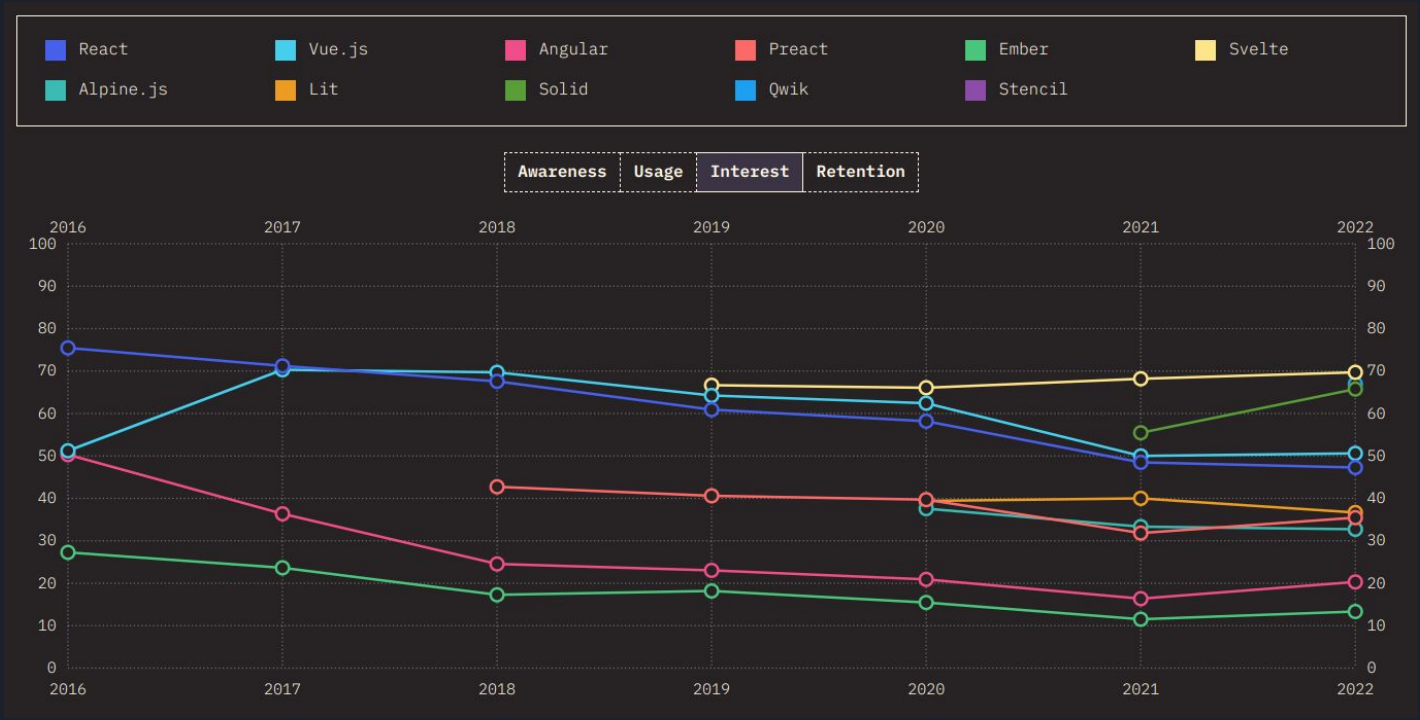
- Each route can have a page.server.ts file that's used to run code in the server and return data seamlessly to your client code.
- If you use TypeScript, SvelteKit auto-generates types that are shared between the client and server.
- SvelteKit provides an option to select your rendering approach based on the route. You can choose SSR for some routes and CSR for others, like maybe your admin page routes.
- SvelteKit also supports routing based on a file system, making it much easier to define new routes than having to hand-roll them yourself.

React vs Svelte:

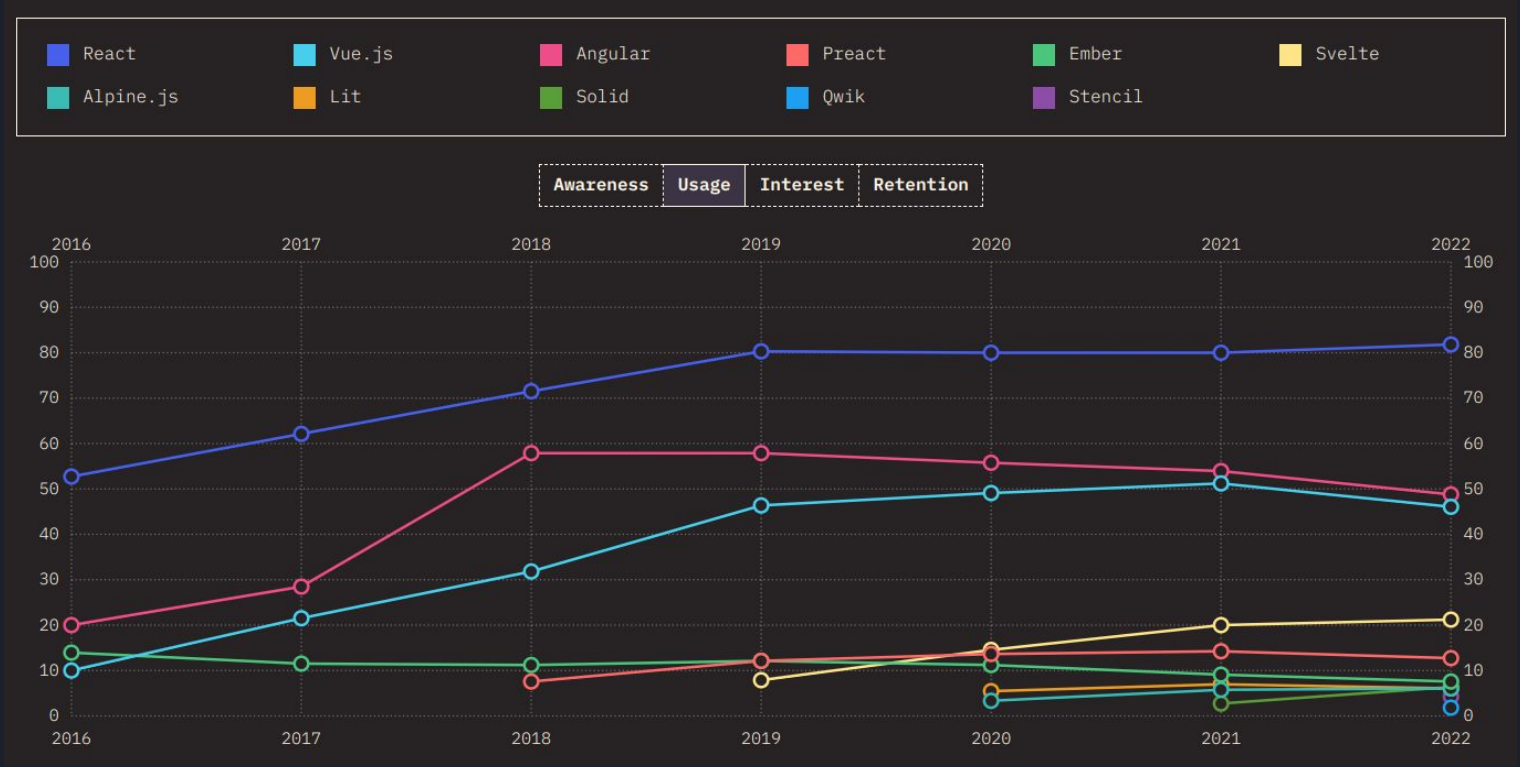
Svelte is faster than React due its implementation of DOM.

- React maintains and traverses a virtual DOM tree which is maintained and updated is javascript.At any change the changed elements are traversed till its parents which is slow as done using javascript.
- On the other hand Svelte orders the browser to replace the DOM at any change. The browser are built and maintained using lower level language and are in general faster. So,leaving thing in the browser’s hand speeds things up

Svelte Community Interest:



Svelte Usage:



Database (PostgreSQL):

- We will use PostgreSQL for our database.
- PostgreSQL, also known as Postgres, is a free and open-source relational database management system emphasizing extensibility and SQL compliance.
- It is used as the primary data store or data warehouse for many web, mobile, geospatial, and analytics applications.

Database Server(Supabase):

- Supabase is an very useful tool for building secure and high-performance Postgres backends with minimal configuration.
- It provides developers with a wide array of functionalities similar to Firebase, such as authentication, real-time database, and storage.
- However, as an open-source alternative, Supabase grants you greater flexibility and control over your data and applications.

Deployment Server(Vercel):

- Vercel offers a fast and easy way to deploy web projects, with automatic scaling and support for modern web technologies like serverless functions. It also offers a global CDN and automatic HTTPS, making it easy to deliver web content to users around the world while ensuring security and reliability.
- Vercel also has a user-friendly interface and integrations with popular development tools like GitHub, GitLab, and Bitbucket, making it easy to set up and manage your projects. Additionally, Vercel offers a generous free plan with plenty of features, making it a great choice for small projects and personal use

Vercel Advantages:

- Fast and easy deployment
- User-friendly interface
- Easy integration with your backend
- No extra CD servers needed
- Real-time collaboration and preview features
- Useful features (edge functions, analytics, AI integrations)

API DOC Link:

https://authentidocs.vercel.app/docs/api

Thank You for your patience.Feel free to convey any query.