

Said Wali Ayyan Contribution:

Selection of Framework:

Next Js:

Next.js is a React framework for building full-stack web applications. You use React Components to build user interfaces, and Next.js for additional features and optimizations.

Under the hood, Next.js also abstracts and automatically configures tooling needed for React, like bundling, compiling, and more. This allows you to focus on building your application instead of spending time with configuration.

Whether you're an individual developer or part of a larger team, Next.js can help you build interactive, dynamic, and fast React applications.

Evolution of Next.js Architecture:

1. Version 1.0.0 (Released: October 25, 2016):

- **Major Features:**

- **Server-side rendering:**

Pages are generated on the server before being sent to the client, making them load faster and improving SEO (search engine optimization).

- **Static site generation:**

Allows for creating static pages ahead of time that can be served very quickly.

- **Automatic code splitting:**

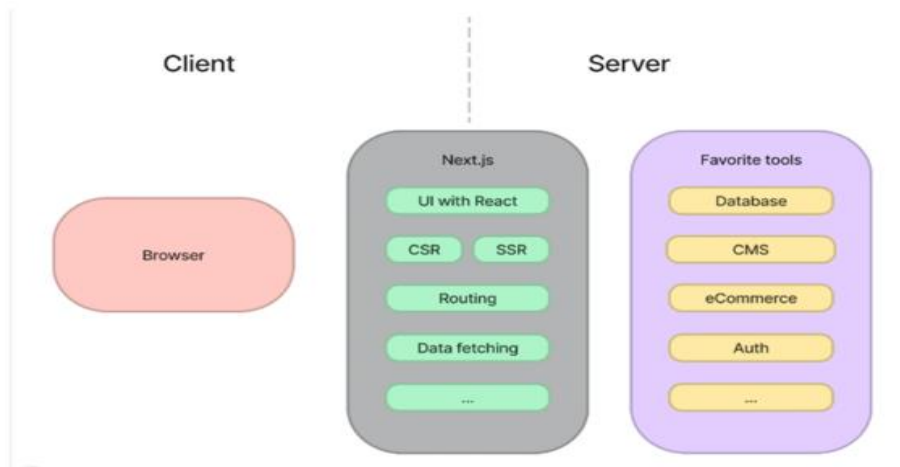
Only the necessary JavaScript for each page is loaded, speeding up the website.

- **Hot module replacement:**

Developers can update their code without reloading the page, making development faster and smoother.

- **Release Notes:** The first version brought core features for building fast and SEO-friendly websites using server-side rendering.

- **Architecture Diagram:**



2. Version 2.0.0 (Released: March 27, 2017):

- **Major Features:**

- **Improved performance:**

The framework got faster and more efficient in handling requests and rendering pages.

- **Dynamic imports:**

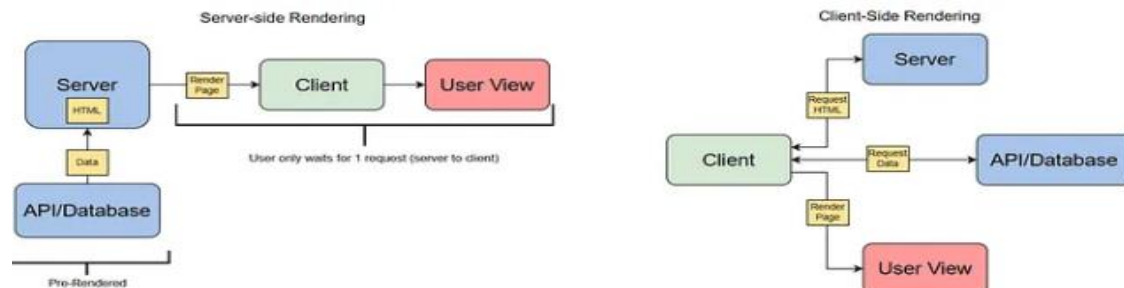
Allows JavaScript files to be loaded only when needed, making the page load faster.

- **Custom server support:**

Developers can now set up a custom server if the built-in one doesn't meet their needs.

- **Release Notes:** This update improved performance and allowed more flexibility with dynamic imports.

- **Architecture Diagram:**



3. Version 3.0.0 (Released: August 27, 2017)

- **Major Features:**

- **Static export support:**

Static HTML files could now be generated and deployed without the need for a server.

- **Custom webpack configuration:**

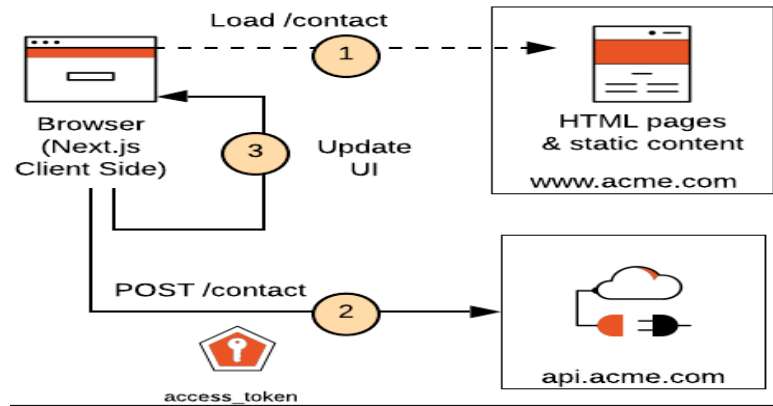
Developers could now customize Webpack (used for bundling JavaScript and other assets) according to their needs.

- **Improved error handling:**

Errors in the application were displayed more clearly and handled better.

- **Release Notes:** Focused on improving static site generation and gave developers more control over Webpack configurations.

- **Architecture Diagram:**



4. Version 4.0.0 (Released: October 1, 2017):

- **Major Features:**
 - **Improved build performance:** The process of building the app became faster and more efficient.
 - **Better support for CSS-in-JS:** Allows CSS (styling) to be written directly in JavaScript files, which simplifies styling management.
 - **Enhanced routing capabilities:** The framework got better at handling page navigation and URLs.
- **Release Notes:** This update focused on improving performance and simplifying the use of CSS-in-JS.

5. Version 5.0.0 (Released: March 21, 2018)

- **Major Features:**
 - **Plugin system:** This feature allowed developers to extend Next.js with custom plugins for more functionality.
 - **Enhanced static export:** Made it even easier to generate and deploy static sites.
 - **Improved error reporting:** Error messages became more helpful and detailed.
- **Release Notes:** Introduced a plugin system to extend Next.js features and enhanced static export.

6. Version 6.0.0 (Released: June 27, 2018)

- **Major Features:**
 - **Improved static site generation:** The framework's ability to generate static pages became even more powerful.
 - **Better support for TypeScript:** TypeScript (a typed version of JavaScript) was better supported, making it easier to build reliable apps.
 - **Enhanced routing and data fetching:** Improved handling of routes (URLs) and data fetching made Next.js apps faster.
- **Release Notes:** Focused on better static site generation and support for TypeScript.

7. Version 7.0.0 (Released: October 1, 2018)

- **Major Features:**
 - **Improved build performance:** Further optimizations to make the building process faster.
 - **Better support for CSS-in-JS:** Continued improvement in managing styles written in JavaScript.
 - **Enhanced routing capabilities:** Even better control over how pages and URLs are handled.
- **Release Notes:** Focused on making Next.js even faster and easier to use with CSS-in-JS.

8. Version 8.0.0 (Released: February 21, 2019)

- **Major Features:**
 - **Serverless deployment support:** Enabled easier deployment of Next.js apps to serverless platforms, which scale automatically based on demand.
 - **Improved static site generation:** Static site generation was enhanced for faster and more efficient builds.
 - **Enhanced routing and data fetching:** Further improvements in handling routes and fetching data.
- **Release Notes:** Introduced serverless support and improved static generation.

9. Version 9.0.0 (Released: July 10, 2019):

- **Major Features:**
 - **API routes:** Allowed developers to create backend API endpoints directly within their Next.js app, simplifying full-stack development.
 - **Improved static site generation:** Continued improvements to the static site generation process.
 - **Enhanced routing and data fetching:** More power for handling dynamic content and routing.
- **Release Notes:** Introduced API routes, making Next.js a full-stack solution.

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10. Version 10.0.0 (Released: October 27, 2020):

- **Major Features:**
 - **Built-in Image Component and Automatic Image Optimization:** Optimized images automatically, improving performance and SEO.
 - **Internationalized Routing:** Made it easier to create multilingual websites by handling different languages in routes.
 - **Next.js Analytics:** Provided built-in analytics to monitor the performance of the app.
 - **Next.js Commerce:** Introduced a ready-made e-commerce template for building online stores.
 - **React 17 Support:** Compatibility with React 17, ensuring smoother upgrades.
- **Release Notes:** Introduced powerful features like automatic image optimization and internationalized routing.

11. Version 11.0.0 (Released: June 15, 2021):

- **Major Features:**
 - **Improved performance:** Enhanced the overall performance of Next.js applications.
 - **Conformance system:** Helped developers follow best practices to improve code quality.
 - **Script component:** Allowed developers to load external scripts efficiently.
 - **React 18 support:** Ensured compatibility with React 18, which includes features like concurrent rendering.
- **Release Notes:** Focused on performance improvements and introduced features to help developers write better code.

12. Version 12.0.0 (Released: October 26, 2021):

- **Major Features:**
 - **Rust compiler:** Introduced a faster Rust-based compiler for better performance.
 - **Middleware (beta):** Allowed developers to run code before a request is completed, enabling more powerful features like authentication.
 - **React Server Components (alpha):** Experimental feature for rendering components on the server.
- **Release Notes:** Introduced cutting-edge features like a Rust compiler and middleware.

13. Version 13.0.0 (Released: October 25, 2022):

- **Major Features:**
 - **Turbopack (alpha):** A new bundler for faster development and build times.
 - **App directory (beta):** Allowed better organization of files and easier management of the app's structure.
 - **Improved data fetching:** Made fetching data for pages faster and more efficient.

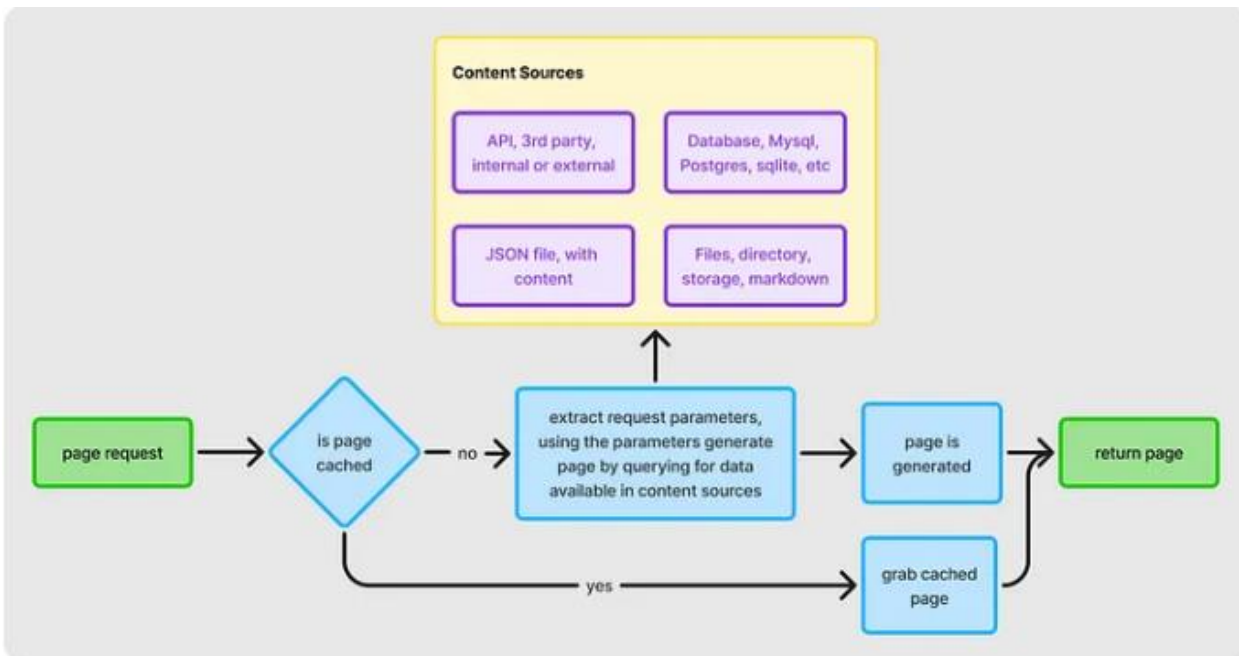
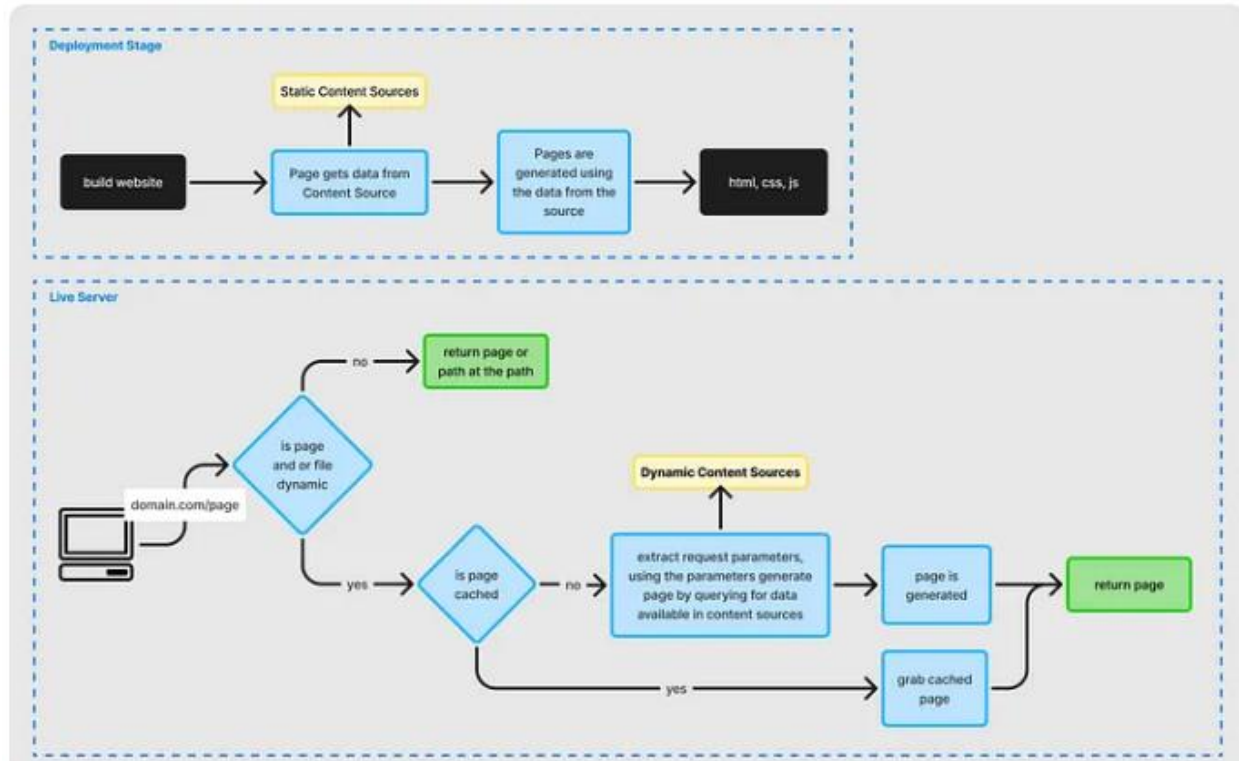
- **Release Notes:** Introduced Turbopack and improved data fetching.

14. Version 14.0.0 (Released: October 25, 2023):

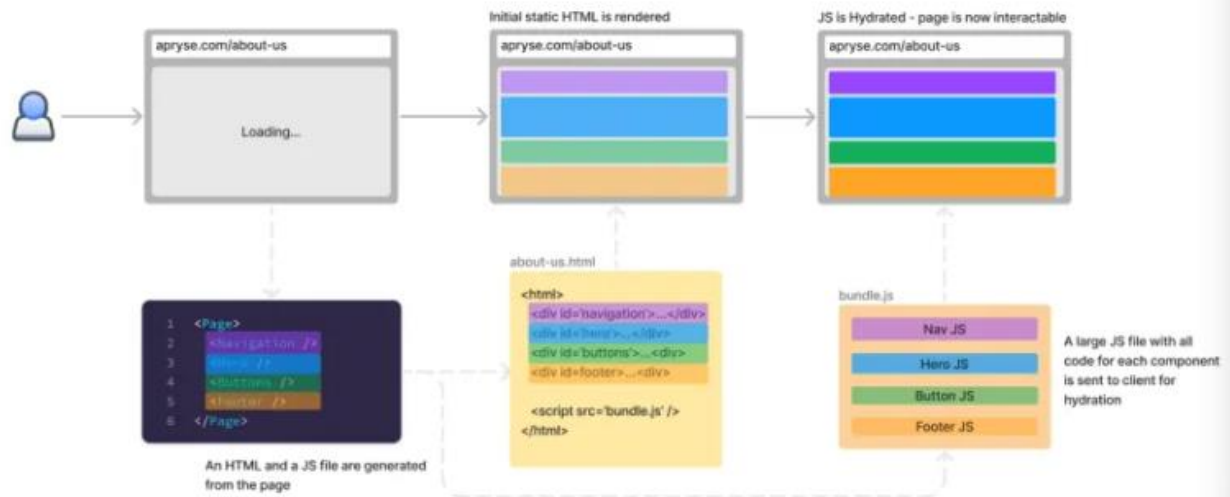
- **Major Features:**
 - **Enhanced Turbopack:** Further improvements to Turbopack for even faster builds.
 - **Improved server components:** Optimized server-side rendering of components.
 - **Better TypeScript support:** Continued improvements for TypeScript developers.
- **Release Notes:** Focused on improving performance and server components.

15. Version 15.0.0 (Released: October 25, 2024):

- **Major Features:**
 - **Improved performance:** Further optimizations to make the app even faster.
 - **Better support for CSS-in-JS:** More features to manage CSS written in JavaScript.
 - **Enhanced routing capabilities:** Improved handling of navigation and page management.
- **Release Notes:** Continued improvements in performance and styling management.



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