

Fullstack Development

UI Libraries

Why?

"Normally-expected" UI design and UI functionality take a lot of work to make.

Dropdown

- [DIY](#)
- [Library](#)
- [WAI-ARIA Standard](#)

We want to

- Spend more time on business logic, not UI design and UI logic.
- Establish common framework for collaboration.
- Have maintainable and extensible system.

Types

Library Type	CSS/Theme	Functionality
"Style"	✓	✗
"Component"	✓	✓
"Headless-Component"	✗	✓
"Anti-Component"	✓	✓

Consideration

- Ease of use
 - How much code do I need to write?
- Customizability
 - How much can I change down the line?
- Inclusiveness
 - Do I need to install extra things?
- Look and feel
 - Does it make my app look generic?

Most importantly

Does it support a dark mode?

Disclaimer

- The choices of UI libraries can be opionated.
- At the end of the day, you must choose your own path.
- Anything marked with 🦀 is my opinion. You don't have to take it.

"Style" libraries



"Style" library

- *No library*
- Styled-Components
- Tailwind CSS
- Classless

No library

- `global.css`
 - Good for `font-family`, `background-color`, CSS variables, CSS reset.
- CSS Module
 - Allow same class names without conflict.
- Inline CSS
 - Can be used as a one-time fix.

No library

- Good
 - Pure CSS ()
- Bad
 -  Separation between style and content
- Dark mode
 - OK, but can potentially be time consuming.
 - Need to implement own hook.

Styled Component

Styling your way with speed, strong typing, and flexibility.

- Styled components are a CSS-in-JS tool that bridges the gap between components and styling.
- Installation note
 - For NextJS, follow the [instructions](#).

Styled Component

- Good
 - CSS-in-JS
 - Full customizability from pure CSS
- Bad
 - 🦀 CSS-in-JS in separate file (anyway)
 - 🦀 Hard to maintain.

Tailwind CSS

Rapidly build modern websites without ever leaving your HTML

- A utility-first CSS framework
 - Provides several of opinionated, single-purpose utility classes that you can use directly inside your markup.
- [Tailwind founder's keynote](#)

Tailwind CSS

- Good
 - Styling in markup
 - 🦀 Less customizability than pure CSS
 - 🦀 Maintainable: *(3 months from now, I can come back and quickly adjust style.)*
- Bad
 - Need to learn syntax
 - Ugly markup
 - Fix: Use VSCode extension or wrap markup in components.

Classless

- These libraries generally do not define classes.
- Instead, they automatically style raw HTML structure
 - Based on HTML tag semantics.
- Examples
 - [PicoCSS](#)
 - [More examples](#)

Classless

- Good
 - Effortless
- Bad
 - Less customizable.
- Dark mode
 - Not supported 😡 (some libraries)

"Component" library

- Bootstrap React
- Mantine
- Others
 - Material UI
 - Chakra UI
 - Ant Design

Bootstrap React

■ The most popular front-end framework, rebuilt for React.

Bootstrap React

- Good
 - Lots of premade components
 - Provided CSS bootstrap classes
- Bad
 - Hard to customize
 - 🦀 Bootstrap classes are verbose.
 - 🦀 Look "Bootstrap"

Mantine

Build fully functional accessible web applications faster than ever –
Mantine includes more than 100 customizable components and 50 hooks
to cover you in any situation

Wow...

- Color generator
 - Try changing color in `App.tsx`.
- Color-scheme hook
 - The only library that provides such hook.
- Mantine UI

Mantine

- Good
 - Comprehensive lists of components (seriously)
 - Comes with useful hooks
 - 🦀 No CSS class
 - You can use other CSS style libraries (e.g. `Tailwind CSS`)
- Bad
 - 🦀 some frictions when trying to deeply customize.
- Dark mode
 - Ready

"Headless-Component" libraries

"Headless-Component" libraries

- Radix UI
- Headless UI

Radix UI

Unstyled, accessible components for building high-quality design systems and web apps in React.

Radix UI

- Good
 - Fully customization (design)
 - Excellent functionality
- Bad
 - Too much code for simple stuffs

"Anti-Component" libraries

"Anti-Component" libraries

This is NOT a component library. It's a collection of re-usable components that you can copy and paste into your apps.

- `Flowbite`
- `shadcn/ui`

Flowbite

Build websites even faster with components on top of Tailwind CSS

- Good
 - Highly customizable
 - 🦀 Use Tailwind
 - Lot of components
- Bad
 - Need to learn Tailwind
 - Not as many components as `Mantine`

shadcn/ui

Re-usable components built using Radix UI and Tailwind CSS.

shadcn/ui

- Good
 - Organized code structure
 - Powerful CLI
 - 🦀 Integrate with `React Hook Form` and `Tanstack Table`
- Bad
 - Lots of boilerplates
 - Complicated

Pick

- Quick app
 - PicoCSS
- Interactive apps
 - Mantine
 - shadcn/ui
- Brochure apps
 - Tailwind CSS

What is your pick?