

# 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 takes a lot of work.

# 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
  - Almost no effort.

**"Component" library**

# "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



# 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.

# **"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.

- `shadcn/ui`
- `Flowbite`

# shadcn/ui

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



# shadcn/ui

- Good
  - Deeply customizable
  - 🦀 Use Tailwind
  - Lot of components
  - 🦀 Integrate with `React Hook Form` and `Tanstack Table`
- Bad
  - Need to learn Tailwind
  - Not as many components as `Mantine`



- Interactive apps

- Mantine

- shadcn/ui

- Brochure apps

- Tailwind CSS

**What is your pick?**