

# Week 3: Advance Frontend (Next.js + TailwindCSS)

## Objective:

Train interns to build modern, production-grade frontends using:

- Next.js fundamentals (App Router / Pages / Routing / Layouts / Image optimization / SSR vs CSR basics)
  - TailwindCSS (utility-first design + responsive components + reusable design system)
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## Topics (Week-3)

### Next.js Fundamentals

- File-based routing
- `app/` directory structure (Next 15+)
- Layouts & nested layouts
- Page navigation (`Link`, `useRouter`)
- Static vs client components ("use client")
- Image optimization (`next/image`)
- Fonts optimization (`next/font`)
- Metadata & SEO tags (`<Head />` or `metadata` config)

### TailwindCSS Fundamentals + Design System

- Utility-first styling
- Responsive design (`sm`, `md`, `lg`, `xl`)
- Flexbox + Grid using Tailwind
- Spacing system (`p-x`, `m-x`, `gap-x`)
- Typography system
- Custom theme config in `tailwind.config.js`
- Component composition mindset (atoms → molecules → sections → pages)

### Component Architecture + UI Thinking (in Next.js + Tailwind)

- Reusable component system

Folder structure:

```
/components  
/app  
/styles
```

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## ✓ Week-3 Exercises (Hands-on Deliverables)

Area	Exercise
Tailwind Setup	Convert Figma/screenshot into Tailwind components
Component System Design	Build Button, Card, Modal, Avatar, Badge
Next.js Routing	Multi-page project with shared layout
UI Challenge	Replicate a SaaS landing page
Reusable Component Library	Create <code>ui/</code> library folder with export index
SEO	Metadata config + Image optimization

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## DAY 1 — TailwindCSS + UI System Basics

◆ **Topics:**

- Install Tailwind in Next.js
- Utility classes, spacing, colors, fonts
- Custom theme configuration

◆ **Exercise:**

Build a **Dashboard Layout skeleton** (header + sidebar)

**Image for reference** (Create header and Sidebar only) -

<https://assets.startbootstrap.com/img/meta/products/twitter/twitter-image-sb-admin.png>

◆ **Output:**

- `/app/layout.jsx`
  - `/components/ui/Navbar.jsx`
  - `/components/ui/Sidebar.jsx`
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## DAY 2 — Tailwind Advanced + Component Library

◆ **Topics:**

- Flex + Grid with Tailwind
- Components mindset (atomic design)
- Reusable components with props

◆ **Exercise:**

Build a component library in:

`/components/ui/`

- `Button.jsx`
- `Input.jsx`
- `Card.jsx`
- `Badge.jsx`

- Modal.jsx

**Image for reference** ( Build the full layout using reusable components, reusing the Day-1 UI component sidebar and header ) -

<https://assets.startbootstrap.com/img/meta/products/twitter-image-sb-admin.png>

◆ **Output:**

- `/components/ui/*`
  - `UI-COMPONENT-DOCS.md` (Usage examples)
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## DAY 3 — Next.js Routing + Layout System

◆ **Topics:**

- Next.js routing (`app/page.js`, `/about/page.js`, `/dashboard/page.js`)
- Nested layouts
- Shared navigation across pages
- Difference: **Client Component vs Server Component**

◆ **Exercise:**

Build a multi-page structure:

/ (landing page)

/about

/dashboard

/dashboard/profile

**Image for reference** - ( Use the day 2 complete UI and create static page to achieve routing and layout system )

<https://assets.startbootstrap.com/img/meta/products/twitter-image-sb-admin.png>

◆ **Output:**

- Folder structure working with nested layouts
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## DAY 4 — Dynamic UI + Image Optimization

### ◆ Topics:

- next/image (optimized image rendering)
- Responsive images + optimization
- Typography & SEO improvements
- Animations using Tailwind + Framer Motion (optional)

### ◆ Exercise:

Build a **responsive landing page** (like SaaS product page)

Sections:

- Hero section
- Features grid
- Testimonials (cards)
- Footer

**Image for reference -** ( Use the code completed up to Day 3 and make it responsive with Tailwind classes. Also, implement on-page SEO tags. )

<https://assets.startbootstrap.com/img/meta/products/twitter/twitter-image-sb-admin.png>

### ◆ Output:

- `/app/page.jsx`
  - `screenshots/landing-page.png`
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## DAY 5 — Capstone Mini Project (No backend)

### ◆ Project:

Build a **Full Multi-Page UI** in Next.js + Tailwind, no backend.

Pages:

```
/login          (static form)
/dashboard      (cards and widgets UI)
/dashboard/users (table listing mocked data)
/dashboard/profile
```

**Design references :**

**Login Page -**

[https://img.freepik.com/free-vector/simple-white-login-form\\_1017-7984.jpg](https://img.freepik.com/free-vector/simple-white-login-form_1017-7984.jpg)

**Dashboard** - Use the day 4 exercise for dashboard page.

**Users Listing -**

<https://demos.themeselection.com/jetship-laravel-starter-kit/documentation/image/guide/user-table.png>

**Profile page -**

<https://www.gravitykit.com/wp-content/uploads/2023/10/CleanShot-2025-06-26-at-12.53.16@2x-1024x503.png.webp>

**Mandatory:**

- Component reuse from [/components/ui](#)
- Clean routing structure
- Mobile responsive UI

◆ **Output:**

- Project repo: [week3-next-tailwind-frontend](#)
- README.md must include:
  - Screenshots
  - Folder structure
  - Components list
  - Lessons learned