**Rewriting frontend debug primer**

The user mentioned losing the frontend debug primer that was previously in the canvas and wants it written in the chat instead. I'll prepare the content, ensuring that it's clear and factual, focused on frontend debugging. It’ll mirror the structure of the prior version, with sections 1-10, similar to the original frontend primer. I’ll make sure to exclude citations and adjust the tone to be more neutral, specifically focusing on frontend details this time.

Thought for 37 seconds

## Konnaxion — Front‑End Debug Primer (Next.js 14)  
(compiled 6 May 2025)

### 1. Stack & Core Libraries

| Aspect | Choice | Notes |
| --- | --- | --- |
| Framework | **Next.js 14** (App Router) | Streaming (React 18) everywhere; optional Turbopack in dev |
| Language | **TypeScript** (strict, noUncheckedIndexedAccess) | Legacy src/ still has a few .jsx files—migrate progressively |
| Styling | **Ant Design 5 tokens**, **TailwindCSS**, **styled‑components** | Tailwind for utility spacing, Ant tokens for theming, styled‑components for scoped overrides |
| State/Data | **TanStack React‑Query 5**, **Axios** | Axios instance in lib/api.ts; interceptors attach Auth0 token |
| Auth | **@auth0/auth0‑spa‑js** + nookies cookies | Silent‑refresh every 9 min; logout broadcasts via localStorage |
| Analytics | Vercel Web‑Vitals + optional OpenTelemetry patch | Enable NEXT\_PUBLIC\_OTEL=true to activate |

### 2. Folder Topology

app/ ← AppRouter pages

├─ layout.tsx ← Root server layout

├─ ClientProviders.tsx

├─ StyledComponentsRegistry.tsx

components/

└─ layout/ ← Header, Sider, Drawer, Main

context/ ← ThemeContext, AuthContext

routes/ ← Route config per functional suite

lib/ ← api.ts, fetch helpers

public/ ← static assets

styles/ ← tailwind.css, global.css

tests/ ← jest & playwright

Path aliases are defined in tsconfig.json (@/components/\*, @/ekoh/\*). A VS Code restart is required after editing them.

### 3. Application Layout Pipeline

1. **RootLayout** (server) injects Tailwind and wraps children with StyledComponentsRegistry (avoids FOUC) and ClientProviders.
2. **ClientProviders** nests:
   * ThemeProvider (dark/light),
   * Ant Design ConfigProvider (token overrides),
   * MainLayout.
3. **MainLayout** (client‐side) orchestrates:
   * **FixedSider** on ≥ md screens or **DrawerComponent** on mobile,
   * **HeaderComponent** (breadcrumb, account menu, broadcast‑logout),
   * **MenuComponent** listing suite‑specific routes,
   * <Content> wrapper where active page is rendered.

If any of these client components omit 'use client' when they call usePathname() or useSearchParams(), hydration warnings or blank pages appear.

### 4. Routing & Suite Switching

* URL query parameter ?sidebar= determines the **functional suite** (ekoh, ethikos, keenkonnect, konnected, kreative).
* On mount, MainLayout dynamically imports **five** route config files with import() and stores them in state.
* Each file **must** export default Route[]; a missing default export collapses the layout (white screen, console error "routes is not a function").
* Breadcrumbs are generated recursively from the matched Route objects.

### 5. Theming & Design Tokens

* ThemeContext exposes theme (Ant tokens) and setTheme.
* A global dark‑mode toggle adds class="dark" for Tailwind and flips Ant algorithm from defaultAlgorithm to darkAlgorithm.
* Tailwind colors reference CSS variables, e.g. text-[rgb(var(--fg-primary)/<alpha-value>)].
* **SSR**: StyledComponentsRegistry wraps the tree with ServerStyleSheet to gather styles; omitting it causes flash of unstyled content.

### 6. State Management & Data Fetching

| Concern | Implementation | Hidden Gotcha |
| --- | --- | --- |
| Queries | React‑Query QueryClient in ClientProviders | Devtools must **not** run in production or they inflate bundle 12 kB |
| Axios | Instance in lib/api.ts (base URL NEXT\_PUBLIC\_API\_BASE) | Interceptors read cookies via nookies; remember to destroy them on logout |
| Auth0 | <Auth0Provider> wrapped around legacy \_app.tsx (for old pages) | Silent refresh interval < cookie max‑age or token may become stale |

### 7. Build & Tooling

* **next.config.js**
  + reactStrictMode: true
  + Experimental turbo: { loaders: { '.png': '@svgr/webpack' } }
  + Custom rewrites /healthz → /api/health.
* **tailwind.config.js**
  + darkMode: 'class'
  + content includes both app/\*\*/\*.{ts,tsx} and src/\*\*/\*.{js,jsx}.
* **eslint.config.mjs** (flat)
  + Combines @typescript-eslint, eslint-plugin-import, next/core-web-vitals.
* **jest.config.js** + **playwright.config.ts** for unit and E2E tests.
* Bundle analysis: ANALYZE=true pnpm build generates stats.html.

### 8. Known Pitfalls & Debug Checklist

1. **Hydration mismatch**: every file that calls Next client hooks needs 'use client'.
2. **Dynamic routes import**: missing default export → blank page; verify each routes/\*.ts.
3. **Sidebar param drift**: rapid navigation can desync local state; pass key={suite} to MenuComponent.
4. **Bundle bloat**: multiple polyfills (core‑js), duplicate component libraries; run analyzer and tree‑shake.
5. **Broadcast logout**: localStorage.setItem('auth0.is.authenticated', 'false') must use identical key across sub‑domains.
6. **Styled‑components SSR**: forgetting server‑side sheet injection causes style flicker only on hard refresh (hard to notice).
7. **Tailwind purge**: if content array misses a folder, production build ships > 500 kB unused CSS.
8. **Path aliases**: stale TS server can report “cannot find module”; restart TS in editor before blaming imports.

### 9. Essential Scripts

| Command | Purpose |
| --- | --- |
| pnpm dev | Starts dev server at http://localhost:3000. |
| pnpm lint | Runs ESLint flat config. |
| pnpm test | Executes Jest unit tests. |
| pnpm test:e2e | Launches Playwright against local server. |
| ANALYZE=true pnpm build | Production build **plus** bundle size report. |

### 10. Roadmap (Front‑End)

| Version | Planned Change | Expected Impact |
| --- | --- | --- |
| 1.1 | Replace Axios with Fetch API + next‑safe‑fetch | Shrinks bundle ~17 kB, simpler interceptors |
| 1.2 | Drop moment for dayjs (already indirect dep) | Saves ~60 kB gzipped |
| 1.3 | Switch to next/font for Inter/Roboto | Eliminates FOUT, removes Google Fonts call |

#### How to Use This Primer  
The focus is on **layout orchestration, dynamic routing, theming consistency, and build optimisation**—the areas that most frequently generate runtime errors or performance regressions. Feeding these details to an AI agent should yield more accurate advice when you hit white screens, hydration errors, or bloated bundles.

Uncertainties: exact minor versions (React‑Query, Ant D) may differ if the lockfile updated after 6 May 2025; verify with pnpm list before pinning down reproduction cases.