Collabryx Frontend Blueprint & Implementation Guide

1. High-Level Architecture

Framework: Next.js 14+ (App Router)
UI Library: shadcn/ui (Radix Primitives + Tailwind CSS)
Styling: Tailwind CSS
Icons: Lucide React
Routing Strategy: Route Groups ((public), (auth)) to separate layouts.

2. Global Layout & Directory Structure

The application is divided into two distinct worlds: the **Public Marketing Side** and the **Authenticated App Side**.

Directory Tree

```
app/
├── layout.tsx             # Root Layout (Providers: Theme, Toast, QueryClient)
├── globals.css            # Global Tailwind styles
├── (public)/              # Marketing & Auth Pages
│   ├── layout.tsx         # Navbar + Footer Layout
│   ├── page.tsx           # Landing Page (/)
│   ├── login/page.tsx     # Login Form (/login)
│   └── register/page.tsx  # Register Form (/register)
└── (auth)/                # Protected App Pages
    ├── layout.tsx         # App Shell (Sidebar + Topbar)
    ├── onboarding/page.tsx  # User Setup Wizard (/onboarding)
    ├── dashboard/page.tsx   # Main Feed (/dashboard)
    ├── matches/page.tsx     # Semantic Match Finder (/matches)
    ├── assistant/page.tsx   # AI Mentor Chat (/assistant)
    ├── messages/
    │   ├── page.tsx         # Empty State (/messages)
    │   └── [id]/page.tsx    # Active Chat Room (/messages/123)
    └── profile/
        └── [id]/page.tsx    # User Profile View (/profile/123)
```

3. Page-by-Page Blueprint

A. Landing Page

Route: /
Goal: Convert visitors into users.
Layout: Full-width, large typography, "Hero" section.

- **Key Sections:**
    1. **Hero:** Large Headline ("Connect with Purpose"), Subtext, and two CTA buttons ("Get Started", "Learn More").
    2. **Features Grid:** 3-column layout highlighting "AI Matching", "Mentorship", and "Networking".
    3. **Social Proof:** Simple ticker of "Trusted by students from..."
- **Shadcn Components:**
    - Button (Variants: default for primary CTA, outline for secondary)
    - Card (For feature highlights)
    - NavigationMenu (For the top header)
- **Responsiveness:**
    - **Desktop:** 3-column feature grid.
    - **Mobile:** Stacked 1-column layout. Hamburger menu for navigation.

B. Authentication Pages (Login / Register)

Routes: /login, /register
Goal: Clean, distraction-free entry.
Layout: Centered Flexbox container. A single "Card" floating in the middle of the screen.

- **Components:**
    - **AuthCard:** A wrapper component containing the form.
    - **SocialAuth:** "Continue with Google/GitHub" buttons.
- **Shadcn Components:**
    - Card, CardHeader, CardTitle, CardContent, CardFooter
    - Form (React Hook Form wrapper)
    - Input (Email/Password)
    - Button (Full width)
    - Separator (For "Or continue with")
    - Label

C. Onboarding Wizard

Route: /onboarding
Goal: Collect initial profile data (Role, Skills, Bio) to generate embeddings.
Layout: Focused layout (No sidebar). Progress bar at the top.

- **Structure:**
    - **Step 1: Identity:** Role selection (Student, Founder, Professional).
    - **Step 2: Skills:** Tag input for skills.
    - **Step 3: Bio:** Textarea for "About Me" (Crucial for AI).
- **Shadcn Components:**
    - Progress (To show % completion)
    - RadioGroup (For role selection)

- Textarea (For Bio)
- Badge (For selected skills display)
- Command (For searching/adding skills)
- Button ("Next", "Back")

D. App Shell (The (auth)/layout.tsx)

Goal: Persistent navigation for the logged-in user.

- **Desktop Layout:**
  - **Sidebar (Left, Fixed, 250px):** Logo, Navigation Links (Dashboard, Matches, Messages, Assistant), User Profile Dropdown at bottom.
  - **Main Content (Right, Fluid):** Renders the {children}.
- **Mobile Layout:**
  - **Topbar:** Logo + Hamburger Button.
  - **Sheet (Drawer):** Hamburger button triggers a Sheet containing the sidebar navigation.
- **Shadcn Components:**
  - Sheet (For mobile sidebar)
  - Avatar (User profile picture)
  - DropdownMenu (Settings/Logout)
  - ScrollArea (For sidebar content)
  - Separator

E. Dashboard (Home)

Route: /dashboard
Goal: Quick overview of activity.
Layout: Masonry or Grid layout.
- **Widgets:**
  1. **Welcome Banner:** "Good morning, [Name]".
  2. **Stats Cards:** "Profile Views", "New Matches".
  3. **Recent Activity:** List of recent connection requests or messages.
- **Shadcn Components:**
  - Card (Used heavily here)
  - Skeleton (Loading states for data)
  - Button (Quick actions like "Find Match")
  - Avatar (In activity feed)

F. Semantic Matches

Route: /matches
Goal: The core AI feature. Browse and connect with potential matches.
Layout: Grid of "Match Cards".
- **Custom Component: MatchCard**
  - **Header:** User Avatar + Name + Role Badge.

- **Body:** Compatibility Score (e.g., "89% Match") rendered as a progress ring or bold text. Top 3 common skills.
        - **Footer:** "Connect" Button + "View Profile" Button.
    - **Shadcn Components:**
        - Card
        - Badge (For skills)
        - Progress (Visualizing match score)
        - Tooltip (Explain why they matched)
        - Button
    - **Responsiveness:**
        - **Desktop:** Grid (grid-cols-1 md:grid-cols-2 lg:grid-cols-3).
        - **Mobile:** Single column stack.

G. Messages / Chat

Routes: /messages (List), /messages/[id] (Room)
Goal: Real-time communication.
Layout: Two-pane layout (Classic Mail/Chat app style).
- **Layout Logic:**
    - **Desktop:** Split view. Left pane = Conversation List (30%). Right pane = Active Chat (70%).
    - **Mobile:**
        - /messages: Shows List only.
        - /messages/[id]: Shows Chat only (Full screen).
- **Components:**
    - **ChatList:** Scrollable list of users + last message preview.
    - **MessageWindow:** Scrollable area for bubbles.
    - **MessageBubble:** Custom component. Blue/Right for "Me", Gray/Left for "Them".
    - **ChatInput:** Text input + Send button.
- **Shadcn Components:**
    - ScrollArea (Crucial for message scrolling)
    - Avatar
    - Input or Textarea (Auto-resizing)
    - Button (Icon button for send)

H. AI Assistant

Route: /assistant
Goal: Mentorship chat interface.
Layout: Similar to /messages/[id] but focused on single-thread AI interaction.
- **Visual difference:**
    - Cleaner, centered interface (like ChatGPT).
    - Suggest "Prompt Starters" (buttons) if the chat is empty.
- **Shadcn Components:**
    - Card (For the "Prompt Starters")

- ScrollArea (For streaming text response)
- Alert (For system notices)

I. User Profile

Route: /profile/[id]
Goal: Detailed view of a user.
Layout: Standard "Profile Header" + "Content Tabs".

- **Structure:**
  - **Header:** Large Banner (optional) + Avatar overlapping. Name, Headline, "Connect" button.
  - **Content:**
    - **About:** Full Bio.
    - **Skills:** Large cloud of badges.
    - **Goals:** List of current objectives.
- **Shadcn Components:**
  - Tabs (To switch between "Overview" and "Experience")
  - Avatar (Large size: h-24 w-24)
  - Badge (Variant: secondary for skills)
  - Separator

4. Routing & Navigation Strategy

Route Groups

We use Route Groups to apply different layouts without affecting the URL structure.

- (public) -> Applies the marketing navbar (Logo + Login button).
- (auth) -> Applies the App Sidebar + Authentication Check (Middleware protection).

Navigation Menu (Sidebar)

The sidebar navigation links should use the usePathname hook to apply an "active" state (e.g., darker background) to the current route.

Links:

1. **Dashboard** -> /dashboard
2. **Matches** -> /matches
3. **Messages** -> /messages
4. **AI Mentor** -> /assistant
5. **My Profile** -> /profile/[my-id]

Mobile Navigation

On mobile devices (< 768px), the Sidebar is **hidden**.

- A "Hamburger" menu appears in the top-right header.

- Clicking it opens a **Shadcn Sheet** (Side Drawer) containing the exact same navigation links as the desktop sidebar.

5. Responsiveness Quality Standards

Desktop Mode (> 1024px):

- **Fluidity:** Content should be centered with a max-width (e.g., max-w-7xl) to prevent stretching on ultrawide monitors.
- **Hover States:** All interactive elements (buttons, cards, list items) must have distinct hover states (hover:bg-accent).
- **Information Density:** Use grids (3-4 columns) to maximize screen real estate usage for Matches and Stats.

Tablet Mode (768px - 1024px):

- **Sidebar:** Consider collapsing the sidebar to "Icons Only" to save space, or keep it full width if space permits.
- **Grids:** Reduce 3 columns to 2 columns.

Mobile Mode (< 768px):

- **Touch Targets:** All buttons must be at least 44px height (Standard Shadcn h-10 or h-11).
- **No Horizontal Scroll:** Ensure w-full and break-words are used to prevent content spilling.
- **Stacked Layouts:** All flex-row containers should switch to flex-col.
- **Navigation:** Exclusively via the Hamburger Sheet.

6. Implementation Checklist (Frontend Only)

1. **Install Shadcn:** npx shadcn-ui@latest init
2. **Add Primitives:**
   npx shadcn-ui@latest add button card input label form separator sheet avatar dropdown-menu scroll-area badge progress tabs textarea navigation-menu dialog alert skeleton

3. **Setup Layouts:** Create the (auth)/layout.tsx with the Sidebar/Sheet logic.
4. **Build Pages:** Create the dummy UI for all routes listed above.