🎨 **Visual Diagram – src/ Architecture**

**main.tsx** → App.tsx → Components

├── AuthEmail.tsx

├── EmbeddedWalletControls.tsx

├── SignMessage.tsx

└── History.tsx

lib/

├── history.ts ↔ SignMessage.tsx + History.tsx

└── history.test.ts (tests)

## 📌 File Roles & Importance

### **Entry Point**

* main.tsx
  + Bootstraps React app.
  + Wraps app with providers (Dynamic SDK context).
  + Renders <App />.

### **Core Layout**

* App.tsx
  + Central UI container.
  + Defines the main page flow:
    1. Authenticate (AuthEmail.tsx)
    2. Create Embedded Wallet (EmbeddedWalletControls.tsx)
    3. Sign & Verify Messages (SignMessage.tsx)
    4. View Signed Message History (History.tsx).

### **Components**

* AuthEmail.tsx
  + Handles email OTP login using Dynamic Headless SDK.
  + Entry point for user authentication.
* EmbeddedWalletControls.tsx
  + Lets user create an embedded wallet (headless).
  + Displays the wallet address.
  + Controls button states (ready/creating).
* SignMessage.tsx
  + Form for inputting a custom message.
  + Signs message with primary wallet (Dynamic SDK).
  + Calls backend /verify-signature API.
  + Saves signed messages into localStorage (via history.ts).
* History.tsx
  + Reads signed message history from localStorage.
  + Displays timestamp, message, signature, validity, signer.
  + Auto-updates on new entries.

### **Lib**

* lib/history.ts
  + Utility functions for local storage persistence:
    - loadHistory() → fetch signed messages.
    - saveHistory() → persist new messages.
  + Ensures user history survives page reloads.
* lib/history.test.ts
  + Basic test suite for history functions.
  + Ensures local storage helpers work correctly.

### **Styles**

* App.css, index.css, styles.css
  + Global + component-specific styles.
  + Manages consistent UI look and feel.

### **Config/Env**

* vite-env.d.ts
  + Type definitions for Vite environment variables.

## 🗂️ UI Flow Summary

1. App starts at main.tsx.
2. Loads App.tsx → mounts core UI.
3. User authenticates → AuthEmail.tsx.
4. Embedded wallet is provisioned → EmbeddedWalletControls.tsx.
5. User signs a message → SignMessage.tsx.
6. Result verified via backend → stored in history.ts.
7. History displayed → History.tsx.