

Front-End File Explanations

This document describes the purpose and key functionality of every file under `src/frontend`.

index.html

The single-page shell that loads all CSS, JavaScript and renders three main views (Dashboard, History, Profile) through hidden/visible sections. It also links Chart.js, Bootstrap/Tailwind (if added) and contains placeholders (`<canvas>`, forms, tables) that the JS files populate at runtime.

css/styles.css

Custom styles that complement any framework.

- Defines colour palette variables, button states and form tweaks.
- Adds layout specifics (e.g., `.sidebar`, `.card`, `.hero`).
- Media queries ensure mobile responsiveness.

js/api.js

Wraps all HTTP calls to the Express backend.

- `getAuthHeader()` injects the JWT from `localStorage`.
- CRUD helpers (`fetchGlucose`, `addGlucose`, `login`, `register`) use `fetch` and return raw JSON to callers.
- Centralises error handling: a `handleResponse` function throws on non-2xx so UI code stays clean.

js/app.js

Acts as entry point after DOM ready.

- Determines which page is active via URL path and initialises the matching module (`dashboard/history/profile`).
- Registers global event listeners (logout, nav clicks, theme toggle).
- Provides small utility functions like `showToast(message, type)`.

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Handles sign-in/sign-up UI.

- Attaches submit handlers to login/register forms.
- On success, stores token + user data in `localStorage` then redirects to `/dashboard`.
- Includes `requireAuth()` guard to prevent unauthorised view access.

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Core glucose entry & visualisation logic.

- `loadStats()` pulls latest readings to compute average, min, max and updates KPI cards.
- `renderChart()` draws the time-series line chart with Chart.js and the annotation plugin for target range shading.
- `handleGlucoseEntry()` posts new value, refreshes chart and, if out-of-range, triggers **VoiceModule.speak** plus optional SMS/e-mail depending on user prefs.

js/history.js

Renders paginated table of past glucose readings.

- Calls `api.fetchGlucose({page, limit})` then builds rows dynamically.
- Allows deletion/edit via icons—sends PUT/DELETE then updates table.
- Offers CSV export by converting the current table into comma-separated lines and triggering a download.

js/profile.js

User settings management.

- Loads current profile (name, age, target range, guardian contact).
- Saves updates via `api.updateUser()` and shows a success toast.
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Lightweight wrapper around the Web Speech API.

- `VoiceModule.speak(text)` selects an English voice, cancels any ongoing utterance, and speaks the supplied message.
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This document describes the purpose and key functionality of every file under `src/frontend`.

index.html

The single-page shell that loads all CSS, JavaScript and renders three main views (Dashboard, History, Profile) through hidden/visible sections. It also links Chart.js, Bootstrap/Tailwind (if added) and contains placeholders (<canvas>, forms, tables) that the JS files populate at runtime.

css/styles.css

- Custom styles that complement any framework.
- Defines colour palette variables, button states and form tweaks.
 - Adds layout specifics (e.g., .sidebar, .card, .hero).
 - Media queries ensure mobile responsiveness.

js/api.js

Wraps all HTTP calls to the Express backend.

- `getAuthHeader()` injects the JWT from `localStorage`.
- CRUD helpers(`fetchGlucose`, `addGlucose`, `login`, `register`) use `fetch` and return raw JSON to callers.
- Centralises error handling: a `handleResponse` function throws on non-2xx so UI code stays clean.

js/app.js

Acts as entry point after DOM ready.

- Determines which page is active via URL path and initialises the matching module (`dashboard/history/profile`).
- Registers global event listeners (`logout`, `nav clicks`, `theme toggle`).
- Provides small utility functions like `showToast(message, type)`.

js/auth.js

Handles sign-in/sign-up UI.

- Attaches submit handlers to `login/register` forms.
- On success, stores token + user data in `localStorage` then redirects to `/dashboard`.
- Includes `requireAuth()` guard to prevent unauthorised view access.

js/dashboard.js

Core glucose entry & visualisation logic.

- `loadStats()` pulls latest readings to compute average, min, max and updates KPI cards.
- `renderChart()` draws the time-series line chart with `Chart.js` and the annotation plugin for target range shading.
- `handleGlucoseEntry()` posts new value, refreshes chart and, if out-of-range, triggers **VoiceModule.speak** plus optional SMS/e-mail depending on user prefs.

js/history.js

Renders paginated table of past glucose readings.

- Calls `api.fetchGlucose({page, limit})` then builds rows dynamically.
- Allows deletion/edit via icons—sends PUT/DELETE then updates table.
- Offers CSV export by converting the current table into comma-separated lines and triggering a download.

js/profile.js

User settings management.

- Loads current profile (`name`, `age`, `target range`, `guardian contact`).
- Saves updates via `api.updateUser()` and shows a success toast.
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