

App Development Protocol

1. Core Technology Stack

We prioritize speed, simplicity, and low overhead. We do not use bloated frameworks where native solutions work.

- **Frontend Framework:** React (via Vite)

Why: Fast build times, minimal configuration, high performance.

- **Styling Engine:** Tailwind CSS

Standard: Utility-first. No external CSS files. Dark Mode support by default.

- **Backend & Auth:** Firebase (Firestore + Authentication)

Rationale: Serverless architecture for real-time data and secure auth without infrastructure maintenance.

- **Icons:** Lucide React

Style: Lightweight, vector-based, consistent.

2. Development Workflow (The "Interactive Handshake")

To ensure code integrity and prevent errors during AI-assisted development, we strictly adhere to this process.

Phase 1: The Sync (Start of Session)

- **Requirement:** Before requesting changes, the developer must provide the current state of the application's core logic.
- **Action:** Upload `src/lib/utils.jsx` (or equivalent logic file) and `src/App.jsx`.
- **Goal:** Ground the session in the actual codebase, preventing "hallucinated" code based on outdated context.

Phase 2: Execution (The Micro-Chunk Protocol)

- **Trigger:** Any file generation exceeding 50 lines of code.
- **Protocol:** We use a **Turn-Based Delivery System** to prevent buffer truncation.
 1. Turn 1: AI generates [Part 1 of X] and stops.
 2. User Action: User reviews, pastes the code, and types "Next".
 3. Turn 2: AI generates [Part 2 of X].
 4. *Repeat until complete.*

Phase 3: Completion (The Build Check)

- **Requirement:** The session is not closed until the build passes.
- **Action:** User runs `npm run build`.
- **Rule:** If the build fails, the immediate priority is fixing the break. No new features are added until the build is green.

3. Coding Standards (Non-Negotiable)

A. Formatting

- **Indentation: Hard Tabs (`\t`).**

Rule: Do not use spaces. Simplicity and consistency are paramount.

B. Defensive UI Engineering

- **Overflow Protection:** All Cards/Modals with `rounded-xl` must have `overflow-hidden`.
- **Text Safety:**
 - Variable text columns must use `white-space nowrap` AND `truncate`.
 - Never rely on auto-sizing for user-generated content.
- **Mobile Integrity:** If a feature breaks on mobile, it is considered broken. Horizontal scrolling on the page body is prohibited.

C. The "Anti-Regression" Policy

- **Principle:** Speed is nothing without control.
- **Rule:** Never break an existing feature to implement a new one.
- **Logic:** Features must be atomic. UI, Logic, and Data must ship together in a working state.

4. Environment Setup

- **IDE:** VS Code (Primary editor).
- **Terminal:** CMD or PowerShell (For build/deploy commands).
- **Deployment:** Build locally (`npm run build`), then deploy via FTP or hosting service.