



## Technical Installation Manual

Our Smart Student Handbook is a cutting-edge AI-driven note-taking platform designed to help students organize, collaborate, and enhance their learning with smart recommendations and cloud-based accessibility.

### 1) Audience & Scope

This manual is for developers setting up the project for local development on Windows, macOS, or Linux. It covers installing prerequisites, cloning the repo, configuring environment variables, booting the web app, and running Firebase tools (Auth, Realtime Database, Storage, and Functions). Deployment is out of scope.

### 2) System Requirements

#### OS

- Windows 10/11, macOS 12+, or Ubuntu 22.04+ (or equivalent).

#### Software

- Node.js  $\geq 18.x$  (LTS recommended)
- npm (bundled with Node 18)
- Git
- Firebase CLI (npm i -g firebase-tools)

#### Verify versions:

node -v

npm -v

git --version

firebase --version

### 3) Tech Stack Overview

- Next.js 15, React, TypeScript (recommended), Tailwind CSS, ShadCN UI
- Firebase: Auth, Realtime Database, Storage, Cloud Functions
- Tooling: ESLint/Prettier (recommended), Jest/Vitest (optional)

### 4) Repository Setup

#### 4.1 Clone the repository

```
git clone <COS201-SE-2025/Smart-Student-Handbook>.git  
cd <COS201-SE-2025/Smart-Student-Handbook/firebase-basic>
```

#### 4.2 Install dependencies

```
npm install
```

### 5) Environment Configuration

Create a file named `.env.local` at the repo root for variables consumed by the Next.js app.

(Have your own keys)

```
NEXT_PUBLIC_FIREBASE_API_KEY=  
NEXT_PUBLIC_FIREBASE_AUTH_DOMAIN=  
NEXT_PUBLIC_FIREBASE_DATABASE_URL=  
NEXT_PUBLIC_FIREBASE_PROJECT_ID=  
NEXT_PUBLIC_FIREBASE_STORAGE_BUCKET=  
NEXT_PUBLIC_FIREBASE_MESSAGING_SENDER_ID=  
NEXT_PUBLIC_FIREBASE_APP_ID=  
NEXT_PUBLIC_GEMINI_API_KEY =  
CONNECTION_STRING =
```

### 7) Running the App

#### 7.1 Development server

```
npm run dev -> http://localhost:3000
```

#### 7.2 Build & preview (production build locally)

```
npm run build  
npm run start
```

## 9) File Structure

```
repo-root/
├─ app/                # Next.js app router
│  ├─ layout.tsx
│  ├─ page.tsx
│  └─ faqs/
│     ├─ page.tsx      # server component (exports metadata)
│     └─ FAQClient.tsx # client component (hooks/UI)
├─ components/
├─ src/
│  └─ lib/
│     └─ firebase.ts   # client SDK init (reads NEXT_PUBLIC_*)
├─ functions/          # Cloud Functions (Node 18 runtime)
│  └─ src/
│     └─ package.json
├─ public/
├─ styles/
├─ .env.local          # local env vars (not committed)
├─ firebase.json       # emulator & deploy config
├─ firestore.rules / storage.rules / database.rules.json
├─ package.json
└─ tsconfig.json
```