Master Guide: The "2-in-1" Aqua Track App

Goal: Create ONE project that works as both a **Website** and an **Android App. Tech Stack:** React + Vite + Capacitor + Tailwind CSS.

Phase 1: The Core Setup (Shared Foundation)

You only do this once. This sets up the "Brain" of your app.

Step 1: Install Tools

1. **Node.js:** Download the **LTS Version** from nodejs.org. This is the engine.

2. **VS Code:** Download from code.visualstudio.com. This is your workspace.

3. **Android Studio:** (Only required if you want the APK file) Download from developer.android.com/studio.

Step 2: Create the Project

1. Open your computer's **Terminal** (or Command Prompt).

2. Run these commands one by one (this sets the project name to "aqua-track"):

```
npm create vite@latest aqua-track -- --template react-ts
cd aqua-track
```

Step 3: Install Dependencies

We need Firebase (data), Lucide (icons), Recharts (graph), and Tailwind (styling).

1. **Run this command inside the** `aqua-track` **folder:**

```
npm install firebase lucide-react recharts
npm install -D tailwindcss postcss autoprefixer
npx tailwindcss init -p
```

Step 4: Configure Styling (Tailwind CSS)

1. Open the project in **VS Code**.

2. Open `tailwind.config.js` (created in Step 3). Delete contents and paste:

```
/** @type {import('tailwindcss').Config} */
export default {
  content: [
    "./index.html",
    "./src/**/*.{js,ts,jsx,tsx}",
  ],
```

```
    theme: {
      extend: {},
    },
    plugins: [],
  }
```

3. Open `src/index.css` . Delete everything and paste:

```
@tailwind base;
@tailwind components;
@tailwind utilities;
```

Step 5: Insert the App Code

1. Navigate to `src/App.tsx` .

2. **Delete everything** and paste the latest `App.tsx` code provided in the chat.

3. **Crucial:** Ensure your `firebaseConfig` keys are pasted correctly at the top of the file.

Phase 2: The Web App (The "Instant" Version)

This gives you a link you can share with anyone immediately.

Option A: Run Locally (Testing)

1. In VS Code terminal: `npm run dev`

2. Open the link (e.g., `http://localhost:5173`) to test it.

Option B: Publish to the Internet (Free)

1. Create an account on **Netlify.com** or **Vercel.com**.

2. In your terminal, run: `npm run build`

    *   *This creates a* `dist` *folder with your finished app.*

3. Drag and drop that `dist` folder onto the Netlify/Vercel dashboard.

4. **Result:** You get a URL (e.g., `https://my-aqua-track.netlify.app`).

    *   **Pro Tip:** Open this link on your phone -> Tap Options -> **"Add to Home Screen"**. It looks and feels just like an app!

Phase 3: The Mobile App (The APK Version)

This wraps your website inside a real Android app container using a tool called "Capacitor".

Step 1: Install the App Wrapper

Run these commands in your terminal:

```
npm install @capacitor/core @capacitor/cli @capacitor/android
npx cap init
```

- *Prompts:* Press Enter for Name and ID defaults.

Step 2: Build the App

You must convert your React code into standard HTML/CSS before wrapping it.

```
npm run build
```

Step 3: Add Android Platform

```
npx cap add android
```

Step 4: Generate the APK

1. Open the Android project:

   ```
   npx cap open android
   ```

2. **Android Studio** will open. Wait for it to load (it takes a while).
3. Go to the top menu: **Build** -> **Build Bundle(s) / APK(s)** -> **Build APK(s)**.
4. Once finished, a popup will appear at the bottom right. Click **"locate"**.
5. **Result:** You will see a file named `app-debug.apk` .
6. Send this file to your phone (via USB, WhatsApp, or Drive) and install it!

Phase 4: How to Update Your App (The Workflow)

Since you have a "2-in-1" system, here is how you update features later:

1. **Edit Code:** Make changes in `App.tsx` .
2. **Update Web:** Run `npm run build` and re-upload the `dist` folder to Netlify.
3. **Update Android:**
   - Run `npm run build` (to update the core).
   - Run `npx cap sync` (to send updates to the Android folder).
   - Run `npx cap open android` and click "Run" or "Build APK" again.

Troubleshooting Common Issues

- **Text Only / No Visuals:** You likely missed Step 4 (Tailwind Configuration).

- **Graph Error:** If the app is blank, ensure you ran `npm install recharts`.

- **White Screen on Android:** Make sure you ran `npm run build` *before* `npx cap sync`. Capacitor creates the app from the *build* folder, not your live code.