



Weather App (Taks 1: FE-2024-12-i)

Weather App is a high-performance, offline-capable Progressive Web App (PWA) that provides real-time weather data for cities worldwide. Built with **React**, **TypeScript**, **React Query**, **Vite**, and **Workbox**, it offers a seamless user experience with fast loading times, offline support, and a modern design.



Features

- **Real-time Weather Data** – Fetches up-to-date weather information for any city.
 - **Search & Autocomplete** – Search for cities with a smooth and responsive autocomplete feature.
 - **Favorites & Notes** – Save your favorite cities and add personal notes for each.
 - **Offline Support** – View previously searched and favorited cities' weather data without an internet connection.
 - **Geolocation Support** – Detects the user's location to provide instant weather updates.
 - **Performance Optimized** – Uses React app performance optimization techniques (`React.memo`, `useMemo`, `React.lazy`, lazy-loading data using `Intersection Observer API`, and more), and Vite for blazing-fast performance.
 - **PWA Ready** – Installable on mobile and desktop powered by React Query cache persistence and `Workbox` service workers.
 - **Unit Tested** – Thorough `Jest` & `@testing-library/react` unit tests to ensure reliability.
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Tech Stack

- **Frontend:** React + TypeScript + Vite
 - **State Management:** React Hooks
 - **Networking:** Fetch API + `@tanstack/react-query`
 - **Caching & Offline Mode:** `Workbox` + LocalStorage
 - **Routing:** React Router
 - **Styling:** Tailwind CSS
 - **Testing:** Jest + `@testing-library/react`
 - **Deployment:** Netlify
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Development

Prerequisites

Ensure you have the following installed on your system:

- **Node.js**
- **npm**



Step 1: Extract the ZIP Archive

1. **Extract** the ZIP file:

- On Windows: Right-click the ZIP file and select **Extract All...**

- On macOS/Linux: Use the terminal:

```
unzip weather-app.zip -d weather-app
```

2. Open the extracted folder in a terminal:

```
cd weather-app
```

● Step 2: Install Dependencies

Run the following command to install all necessary dependencies:

- `npm install`

⚡ step 3: Run the App

Start the Development Server to launch the app in development mode:

- `npm run dev` This starts a local Vite-powered development server. Open <http://localhost:5173> in your browser.

🧪 Running Tests

To run the unit tests:

- `npm run test-unit`

🏗 Build for Production

To generate an optimized production build:

- `npm run build` This creates a `dist/` folder containing minified, ready-to-deploy assets.
- Preview Production Build - `npm run preview` This serves the built app at <http://localhost:4173>

📥 Installing the PWA

You can access the web app by simply entering

🔗 prismatic-eclair-33cbd8.netlify.app in your browser.

However, if you wish to install it as a **desktop or mobile app**, follow the steps below:

📱 Installing as an App on Your Device

💻 On Chrome (Desktop)

- 1 Open **Google Chrome** and enter:
🔗 prismatic-eclair-33cbd8.netlify.app

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- 2 Click the **install icon**  at the top-right of the address bar.
 - 3 Click the "**Install**" button in the pop-up that appears.
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On Chrome (Mobile)

- 1 Open **Google Chrome** and enter:
 prismatic-eclair-33cbd8.netlify.app
 - 2 Open the browser menu (:) in the top-right corner.
 - 3 Click "**Add to Home Screen**" .
 - 4 Select "**Install**". The app is now on your **home screen!**
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On Safari (Desktop)

- 1 Open **Safari** and enter:
 prismatic-eclair-33cbd8.netlify.app
 - 2 Click the **Share** icon  at the top-right of the browser.
 - 3 Select "**Add to Dock**" .
 - 4 The app is now installed on your **dock/home screen!**
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Launching the PWA

Once installed, you can **access the app** in the following ways:

From Homescreen (macOS)

- 1 Click on the **Launchpad** icon.
- 2 Locate and **click the app** to open it.

From Chrome Apps

- 1 Type **chrome://apps** in the Chrome address bar and press **Enter**.
 - 2 Locate the **Weather App**  and **click on it**.
-

Uninstalling the PWA

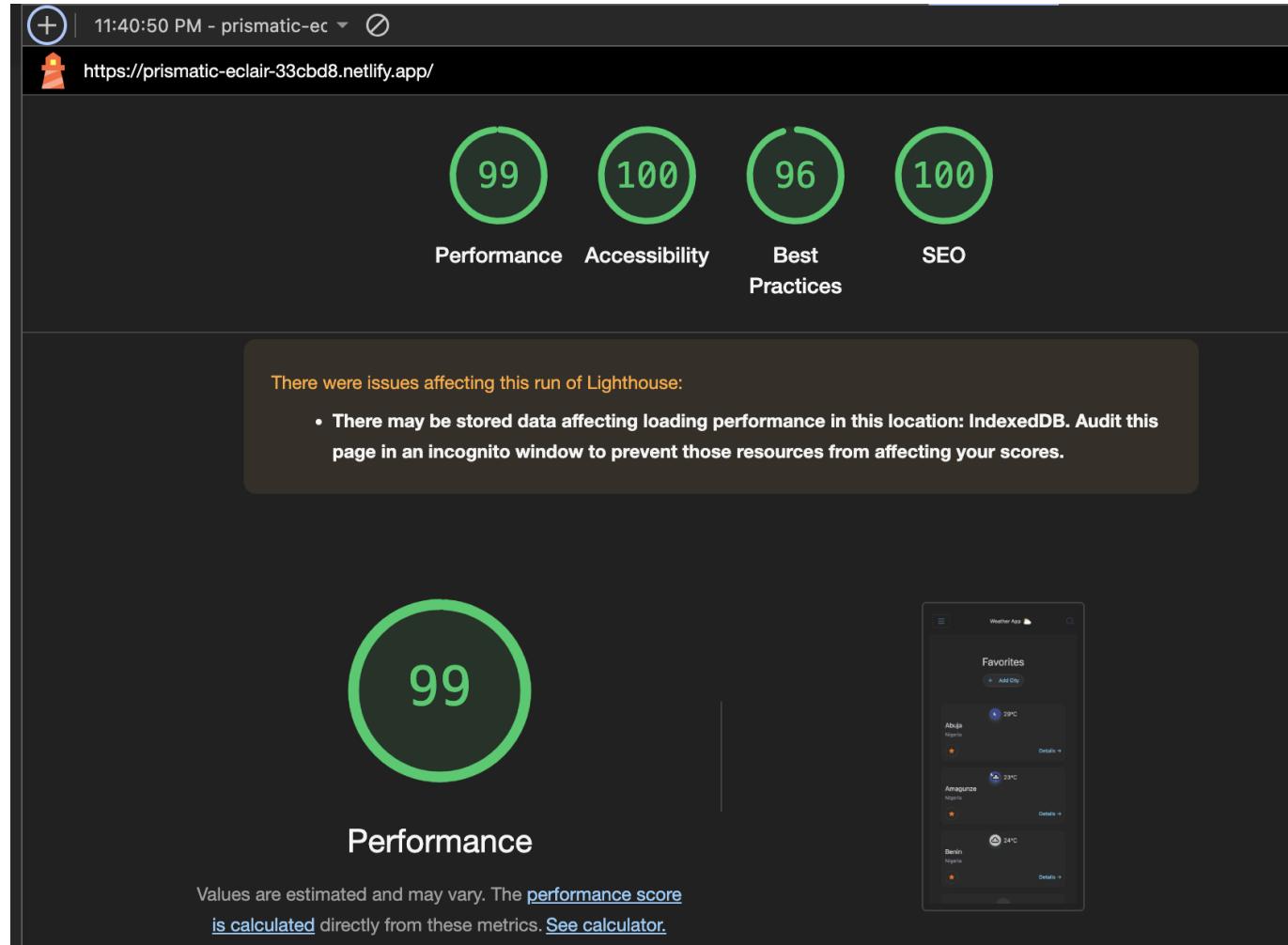
From Chrome

- 1 Type **chrome://apps** in the Chrome address bar and press **Enter**.
- 2 Locate the **Weather App**  and **right-click (Control-Click on Mac)** to open the **context menu**.
- 3 Click "**Uninstall**" .

From Safari (Mac)

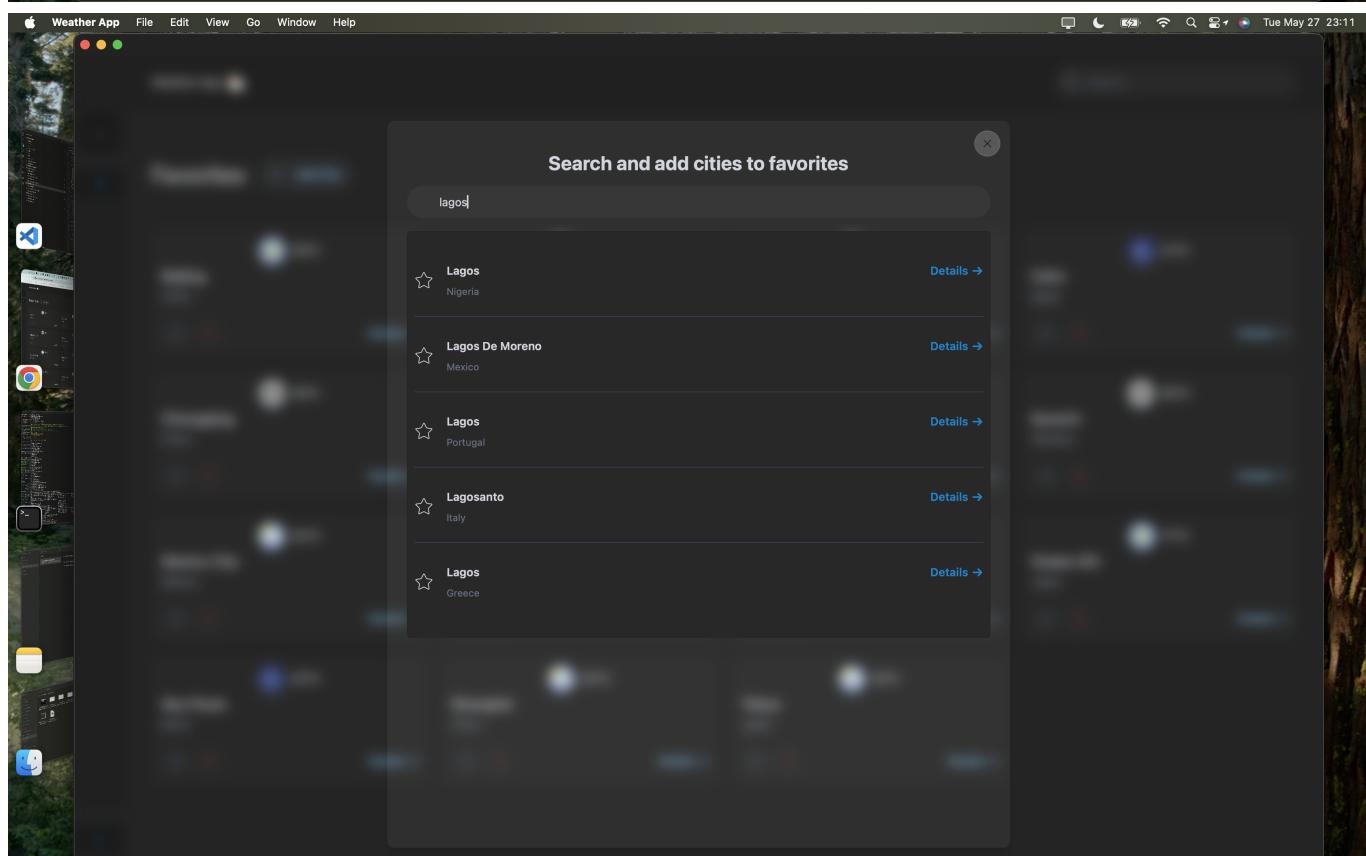
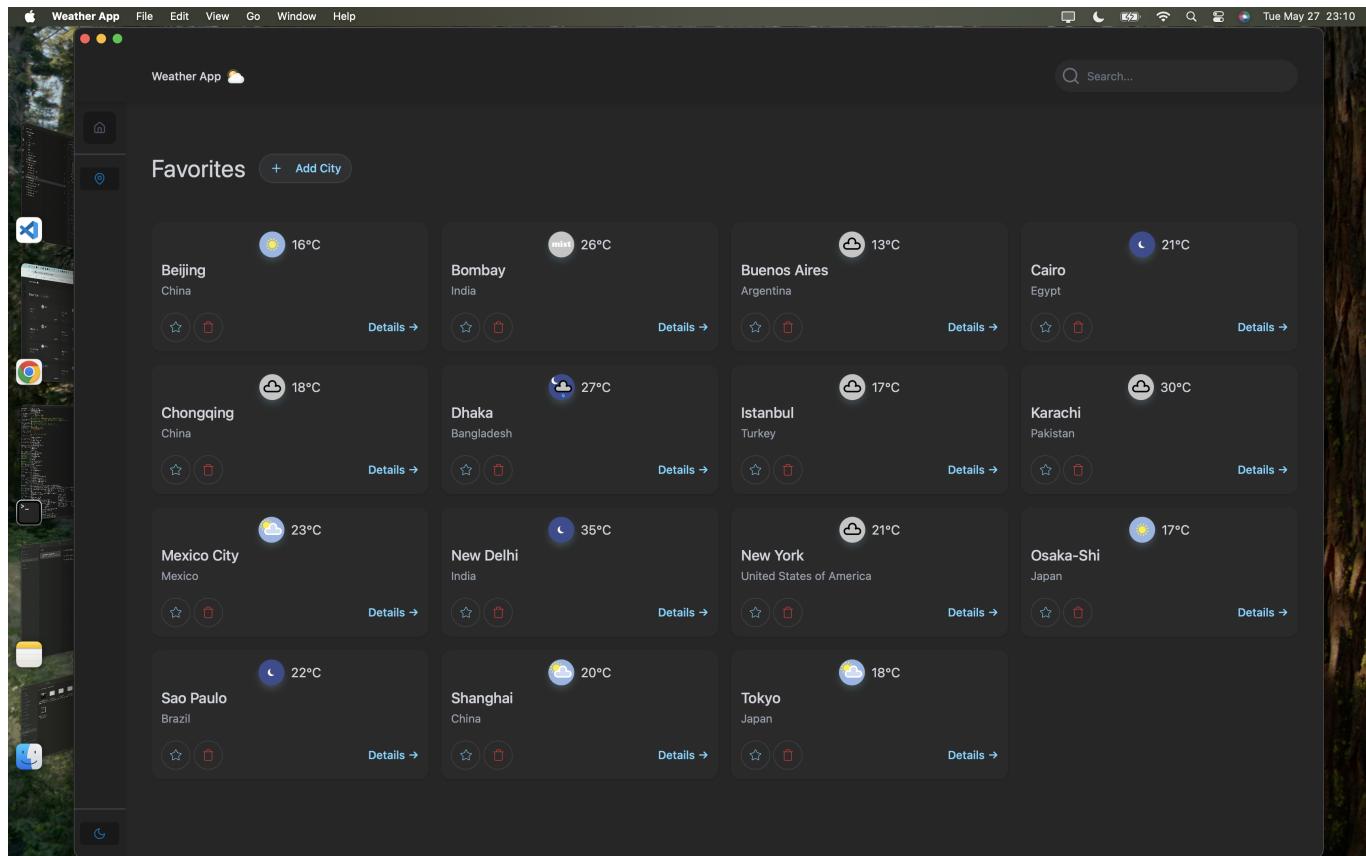
- 1 **Long-press** the **App Icon** on your home screen.
 - 2 Tap "**Remove**" .
-

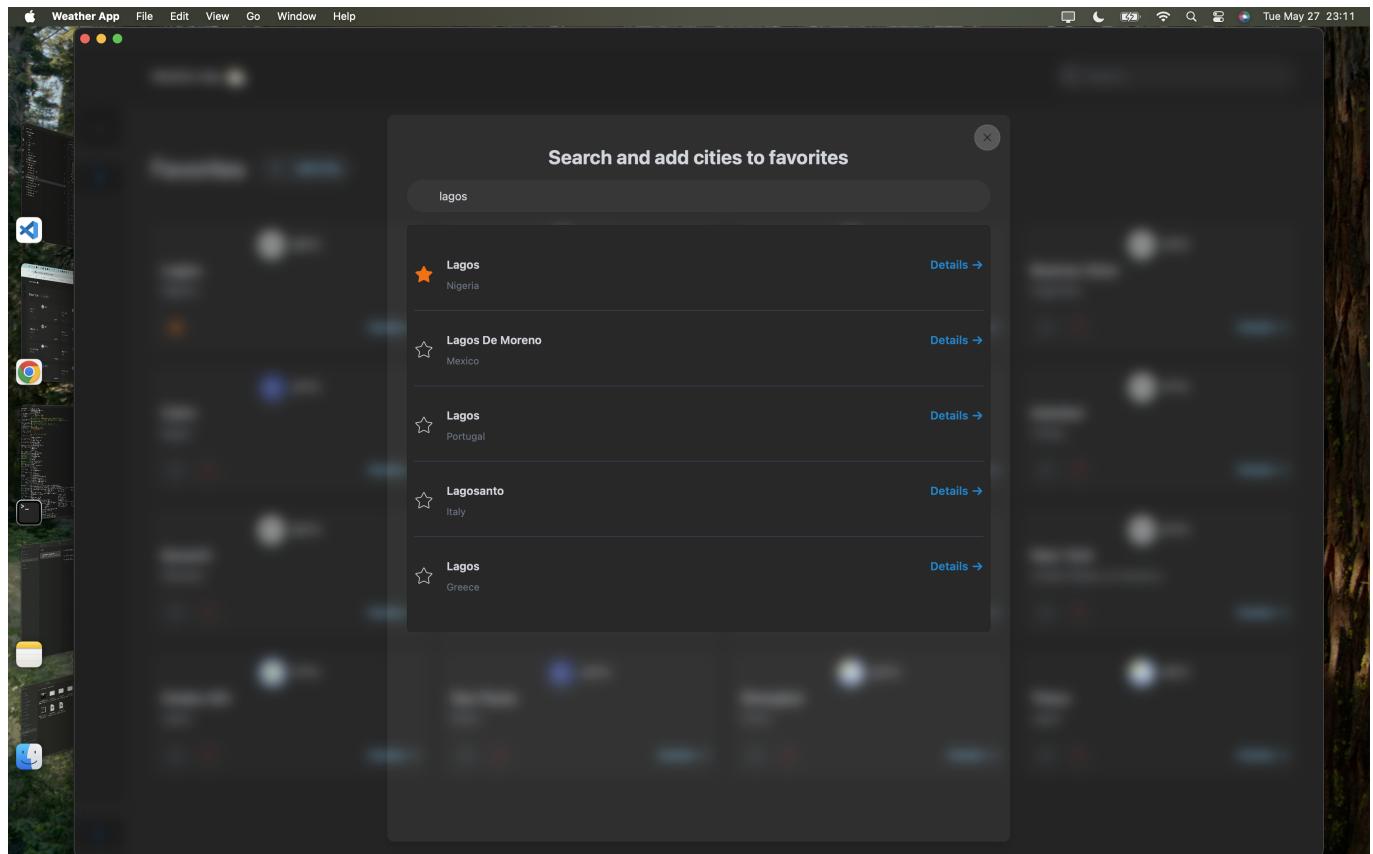
Lighthouse Report



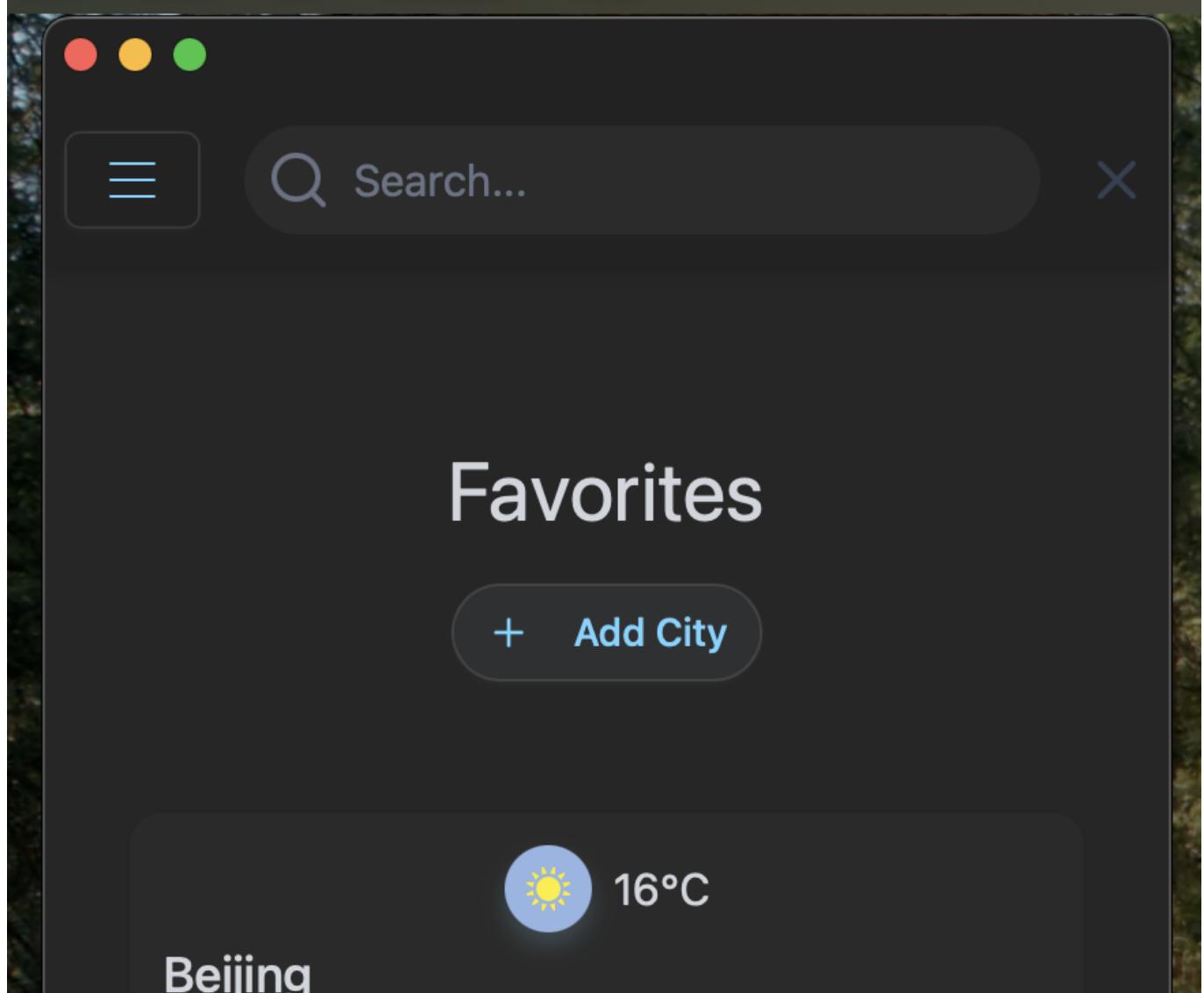
- Best practices is only less than 100% because the app requests location on page load.

Screenshots





Edit View Go Window Help



China



[Details →](#)

mist

26°C

Bombay

India



[Details →](#)



13°C

Buenos Aires

Argentina



[Details →](#)



21°C

Cairo

Egypt



[Details →](#)



18°C

