

Assessment Submission: eCFR Deregulation Dashboard

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1. Feedback on the Assignment & Expertise Fit

I really enjoyed this assessment. Developing a small full stack website that takes data from an eCFR website with API, store it into our local PostgreSQL database and finally creating a frontend for users to digest that information.

My background in full-stack development allowed me to approach this methodically. Rather than building a frontend-only app that would crash the browser with massive fetch requests, I implemented a robust Node.js/PostgreSQL backend ingestion engine. The tech stack I went with was the following: PostgreSQL, Express JS, React, Node JS (PERN).

A few notes:

- The eCFR API does not publish data on weekends or federal holidays. I had to put in a logic to make sure we fetch on workdays to avoid crashing the script. Finally, to stay strictly under the 1,200-line code limit, I used simple React and express js on top of Node JS.

2. Duration

This assessment took me about **6-7 hours** to complete.

3. Application Access & Setup Instructions

Because this application processes real data and requires a backend database, it is intended to be run locally as I did. Please follow these steps to initialize the application on your machine:

Prerequisites: Ensure you have PostgreSQL and Node.js installed.

Step 1: Database Configuration

1. Open the `ecfr-backend` folder.
2. Inside the `.env` file, update the `DB_PASSWORD` to match your local PostgreSQL password.

Step 2: Backend & Database Initialization

1. Open a terminal and navigate to `ecfr-backend`.
2. Run `npm install`.
3. Run `node setup.js`. *This setup js creates ecfr_db database inside postgres and creates tables that we later need for frontend fetching*
4. Run `node services/ecfrService.js`. This will iterate agency by agency using the GET from eCFR API to download the parts, title into our local PostgreSQL. Please be aware this can take a long time to run as it is fetching data for all agencies.
5. Finally, run `node server.js` to start the backend API

Step 3: Frontend Initialization

1. Open a second terminal window and navigate to `ecfr-frontend`.
2. Run `npm install`.
3. Run `npm run dev`.
4. Open your browser and navigate to the local link provided (usually <http://localhost:5173>).

4. Application Screenshots



