

## ECFR Coding interview - Chad Singleton

Running the program locally.

1. Extract zip file.
2. Browser to project folder (EcfrApp)
3. Run: dotnet build
4. Run: dotnet run

## Assignment Feedback

This assignment was my first using AI coding. I chose the Microsoft technology stack as that is what I'm most familiar with and was told the application needed to run on windows.

I used grok for at-large program stubbing, and then switched to co-pilot within Visual Studio Code.

I had my first coding AI hallucination.

```
async function fetchCorrections() {
  try {
    const loading = document.getElementById('loading');
    loading.style.display = 'block';

    const controller = new AbortController();
    const timeoutId = setTimeout(() => controller.abort(), 300000);

    const response = await fetch('/api/ecfr/fetch-corrections', { signal: controller.signal });
    clearTimeout(timeoutId);

    if (!response.ok) throw new Error('Failed to fetch corrections');
    const count = await response.json();
    alert(`Fetched ${count} corrections`);
  } catch (error) {
    console.error('Error:', error);
    alert(`Error fetching corrections: ${error.message}`);
  } finally {
    document.getElementById('loading').style.display = 'none';
  }
}
```

I chose # of corrections by agency as my metric, but was unable to get the accurate count in time for submission. The obstacle there was that the Corrections records did not contain agency slugs like the CfrReferences did.

## Expertise Comments

The expertises used here were:

1. Familiarity to converting swagger to OpenAI format
2. Architecture design choosing database format that can run locally but can be swapped with server-based option as well using Entity Framework.
3. I also added some USWDS standards to the layout to make it more presentable.

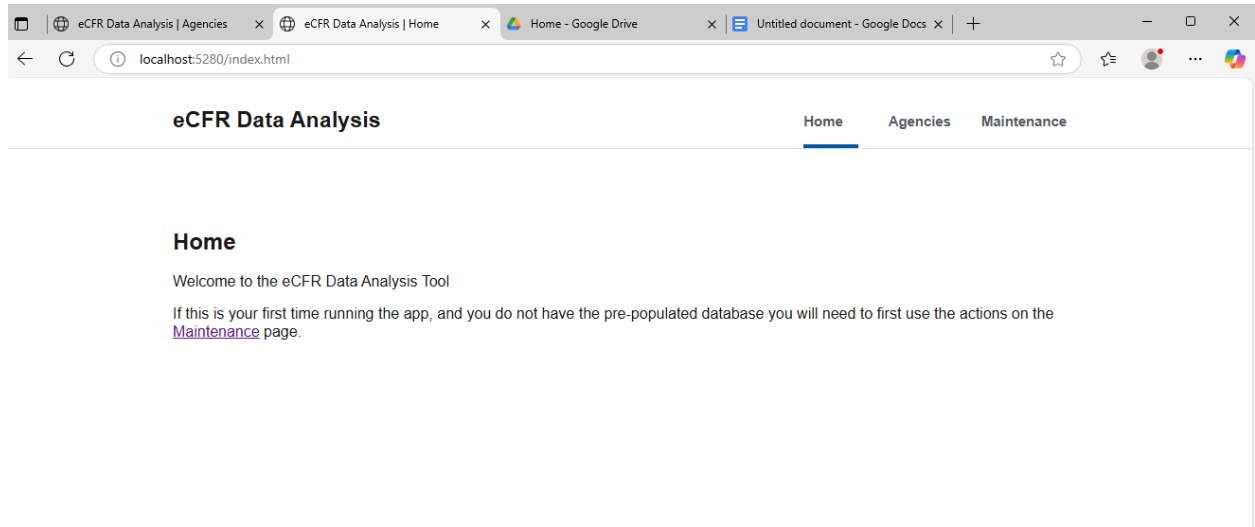
Duration to Complete

This project took me a total of 18 hours

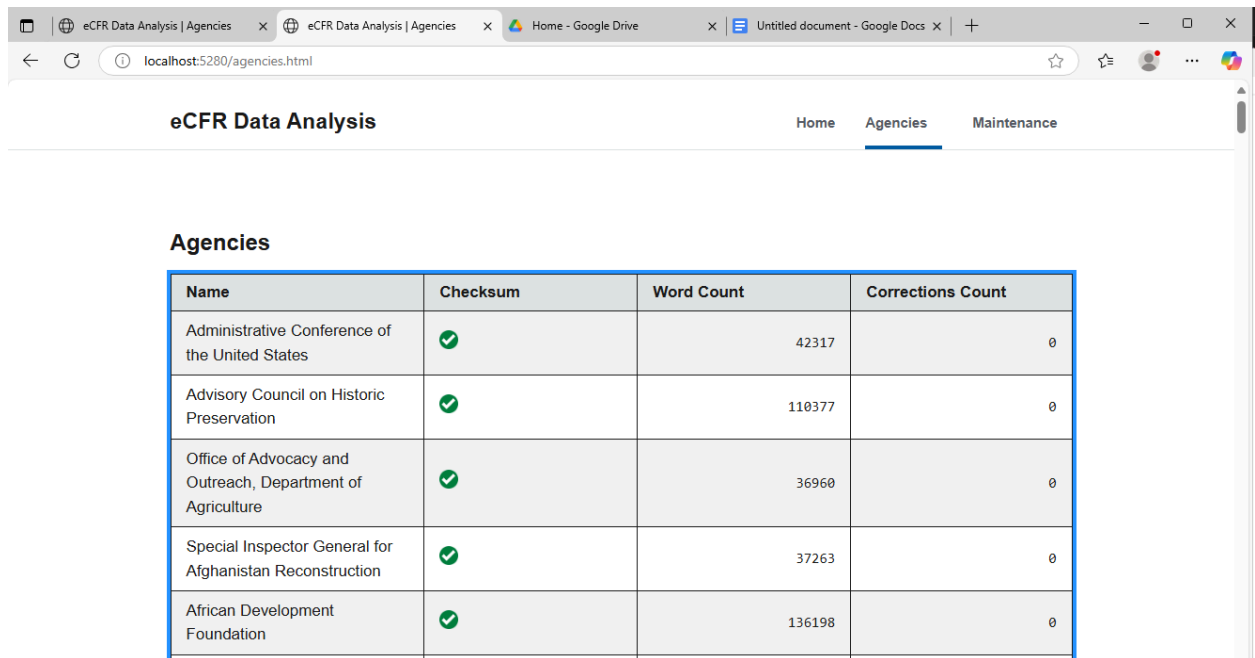
## UI Screenshots

The UI consists of 3 pages:

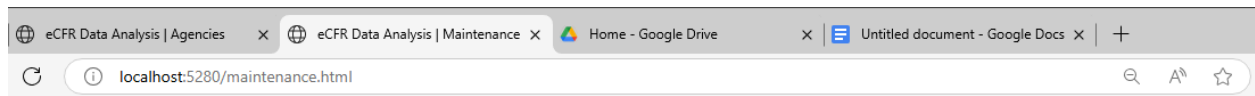
### Home



### Agencies



# Maintenance



## eCFR Data Analysis

Home Agencies **Maintenance**

### 1. Fetch Agencies

Retrieve and store agency data from eCFR API.

**Fetch Agencies**

### 2. Fetch Corrections

Retrieve and store correction data from eCFR API.

**Fetch Corrections**

### 3. Fetch Title Relationships

Retrieve and store title structure information and metadata data from eCFR API. This function is for determining Word Count per Agency.

*Note:* Due to having a large processing time, each title must be retrieved separately.

**Fetch Title Relationships**

### 3.(Admin Use) Fetch All Title Relationships

Retrieve ALL title relationships from the eCFR API.

*Note:* Even with high-speed connection this can take 20 mins.  
For this reason, an option for Retrieving a single title is given above.

**Retrieve ALL Title Relationships**