# Code Fusion AI

## Python Developer Assignment

### May 4, 2025

## 1 Overview

This assignment involves fetching data from an external API, formatting the data, and making it available via RESTful APIs. The data will be displayed on a simple, secured web page where users can find information about different countries. The solution should use Django for backend development.

## 2 Assignment Phases

### 2.1 Phase 1: Data Fetching and Storage

- Start a new Django project and create a Django app.

- Fetch data from `https://restcountries.com/v3.1/all`.

- Design and implement Django models to store the fetched data.

- Write a script to fetch and store the data in the database.

- Commit your work after implementing each step.

### 2.2 Phase 2: RESTful API Development

Develop RESTful APIs for country-related information:

- List all countries.

- Retrieve details of a specific country.

- Create a new country entry.

- Update an existing country's details.

- Delete an existing country.

- List same regional countries of a specific country.

- List countries that speak the same language based on a given language.

- Search for a country by its name (supports partial search).

- Commit your work after implementing each API endpoint.

## 2.3   Phase 3: Web Interface

Design a simple HTML template to display country information:

- Display a table with country details: name, cca2, capital, population, timezone, and flag.

- Include a search field for searching a country by name.

- Implement a "Details" button to show same regional countries and spoken languages.

- Use Bootstrap or Bulma for styling.

- Use Django template rendering or REST API consumption for data display.

- Commit your work after implementing the web interface.

## 2.4   Phase 4: Authentication and Security

Secure the application with authentication:

- Restrict API access to authenticated users.

- Use Django's default authentication system (`django.contrib.auth.models.User`).

- Implement a login page for registered users to access the country list page.

- Commit your work after implementing authentication.

# 3   Deliverables

Push your code to a public Git repository (GitHub, GitLab, or Bitbucket) with clear setup instructions.

# 4   Special Instructions

- Use Python/Django as the primary development framework.

- Include necessary third-party library dependencies in the repository.

- Provide a README file with setup instructions, including:
  - Installation steps.
  - Required dependencies and versions.
  - Database setup and configuration.
  - Running the application.

- Commit frequently to document your development process.