

Task: Implement a Dockerized RESTful Temperature Prediction Service

Objective: Create a Dockerized REST service that reads temperature data from a CSV file, trains a machine learning model, and exposes it for predicting temperatures based on input date and city. You do not need to complete the entire task within the time limit—just focus on key components.

Optional: Train multiple models of different types and expose the best one.

You have 1 hour to complete this task. Your implementation will subsequently be discussed in a 30-minute, follow-up interview.

Requirements:

- **REST API:** The service should expose a public POST endpoint `/predict_temperature`. The service should take a date & city parameter and return a JSON response. The expected response format is:

```
{
  "temperature": "<temperature value>"
}
```

- **experiments:** the service should store training metrics in the 'experiments' folder in the root directory of the project for high-level evaluation.

Implementation:

- **data:** The service should load data from the data folder. A file named `temperatures.csv` will be placed inside the folder. This file is **not provided**, but you can assume it has the following structure:

| Region | Country | City | Month | Day | Year | Temperature |
|----------|----------|----------|-------|-------|-------|-------------|
| <string> | <string> | <string> | <int> | <int> | <int> | <float> |

- **training:** Upon startup, the service should read the CSV data and train one machine learning model. *Optionally train multiple models and compare their performance.*
- **libraries & tools:** The choice of language, libraries, and tools is completely up to the candidate, with the exception of:
 - **OpenAI API** must be used for embedding. (and the optional LLM response)
 - **Docker** must be used for containerization.
 - **GitHub** must be used for version control.

Deliverables:

- A public GitHub repository containing the solution.
- The repository should include clear instructions on how to build and run the project using Docker.

Please ensure that your repository is public and share the link by the end of the task.