

Senior backend - Home exercise

Description

For this exercise, you need to design and implement a RESTful API which exposes two resources:

- **/traces**
- **/statistics**

Resources description

/traces

This endpoint will receive, via HTTP POST, an IP address in the format 100.100.100.100, and return the following information associated with that IP address:

- Country which issued the IP and its ISO code
- Coordinates for its location (latitude and longitude)
- An array of currencies for that country with:
 - ISO code (USD, CAD, ARS)
 - Symbol (\$, £)
 - Conversion rate from currency to USD
- Distance between United States and country of origin (in Kilometers)

Example request

```
POST --> /traces
body: {"ip":"167.62.158.169"}
```

Example response

```
{
  "ip": "190.191.237.90",
  "name": "Argentina",
  "code": "AR",
  "lat": -34.6022,
  "lon": -58.3845,
  "currencies": [
    {
      "iso": "ARS",
      "symbol": "$",
      "conversion_rate": 0.023
    },
    {
      "iso": "USD",
      "symbol": "$",
      "conversion_rate": 1
    }
  ],
  "distance_to_usa": 8395.28
}
```

/statistics

A resource which, on an HTTP GET, returns:

- Longest distance from requested traces
- Most traced country

Example request

```
GET --> /statistics
```

Example response

```
{
  "longest_distance": {
    "country": "United States",
    "value": 0
  },
  "most_traced": {
    "country": "United States",
    "value": 1
  }
}
```

Requirements

- Upload your solution to a versioning tool (GitHub, Bitbucket, GitLab)
- Document how your API is to be used

Optional:

- Deploy the solution to a free cloud platform (Google App Engine, AWS, etc)

Recommendations

1. Leverage using the following free APIs to complete the exercise:
 - a. IP Geolocation: <https://ip-api.com>
 - b. Currency conversions: <https://fixer.io/>
2. Bear in mind that expected throughput may vary from 1k to 5M requests per minute, code your solution to be deployed in a high-concurrency environment.
3. Assume reasonable answers to all the questions you may have, and document them clearly in the readme file.