

Coding Task

Use this [Data source](#) to feed data in mongo

A. Question

Design a REST API endpoint that provides autocomplete suggestions for highly populated cities

Request Description:

GET /suggestions

Query Parameters:

q, eg, search term, which can be complete or partial

coordinate, [latitude,longitude] , to filter for longitude and latitude

radius, to filter by radius in km

sort, either by **name** or **distance** [ascending]

B. Sample responses

These are just examples to provide guidance (add a calculated field called distance)

Example 1: Near match

Request

GET /suggestions?q=Londo&latitude=43.70011&longitude=-79.4163&radius=5&sort=distance

Response

```
{
  "suggestions": [
    {
      "name": "London, ON, Canada",
      "latitude": "42.98339",
      "longitude": "-81.23304",
      "distance": 0.9
    },
    {
      "name": "London, OH, USA",
      "latitude": "39.88645",
      "longitude": "-83.44825",
      "distance": 1
    }
  ]
}
```

```
},
{
  "name": "London, KY, USA",
  "latitude": "37.12898",
  "longitude": "-84.08326",
  "distance": 1.5
},
{
  "name": "Londontowne, MD, USA",
  "latitude": "38.93345",
  "longitude": "-76.54941",
  "distance": 2
}
]
}
```

Example 2: No match

Request

GET /suggestions?q=SomeRandomCityInTheMiddleOfNowhere

Response

```
{
  "suggestions": []
}
```

C. Tech Requirements

1. Nodejs
2. Typescript
3. MongoDB
4. Docker and docker-compose (optional)
5. Tests: Chai and Mocha (Or Jest)
6. Code linter

D. Submission requirements

1. Design and implement your solution as you would do for real production code
2. Clean and well-structured solution
3. Use Mongo mock and add integration test cases
4. Commit early and often. We want to be able to check your progress
5. Please complete your working solution within 7 days of receiving this challenge, and be sure to notify us when it is ready for review.

6. Please submit your code in any way you like: Github or bitbucket with instructions on how to run the code and any assumptions you made.
7. **Bonus (Feel free to add this feature in your code/test to stand out):** Add rate-limit feature in API, eg, for the given IP address, to only allow 5 calls per minute