Task handling exercise

Overview

We have a need in our company to calculate a lot of numbers and perform lots of calculations. In order to do that we've build a server application that can do that. Unfortunately, this server has limited resources and can only perform 5 tasks in parallel. Trying to send more than 5 tasks will result in failure.

You are going to implement a client program that interacts with that server and is able to perform lots of tasks in the fastest possible way.
Your input is a file containing lots of numbers that needs calculation and you should output all the results into a file.

Notes:

- The client program (The one that you write) should run efficiently.
- The calculations server has limited resources - take that into consideration.
- The input file should be read as a stream (Assume that the file contains millions of numbers).
- Each calculation that the server performs takes 2-8 seconds - output order doesnt matter.
- Output should contain both input number and result.
- You are allowed to use any additional library or infrastructure.

API

The server runs on the following IP: 35.195.195.133.

The server exposes 2 routes:

Start Calculation

Method: POST
Route: `/`
Body: `{ data: <number> }`
Response: `{ request_id: <identifier> }`

For the case where more than 5 tasks are sent, status 403 will be returned with appropriate message

Example:

```
curl -X POST 'http://35.195.195.133:9005' \
--header 'Content-Type: application/json' -d '{"data": 5}'
```

Get result

Method: GET
Route: `/`
query: `{ request_id: <identifier> }`
Response: `{ result: <number> }`

Status 400 will be returned with appropriate message in case result is not yet available or missing

Example:

```
curl http://35.195.195.133:9005?request_id=53b637dc-7521-4770-88dd-d8dcf45b6923
```

Example of input file

```
1120
1699
730
1743
1483
1213
1367
698
278
225
1645
758
1110
969
1047
1143
127
974
306
112
1692
1291
669
337
439
410
1572
1141
1673
1967
316
1829
1341
1560
```

```
103
631
1351
543
260
507
19
851
143
1208
1787
853
1755
1736
59
1762
```