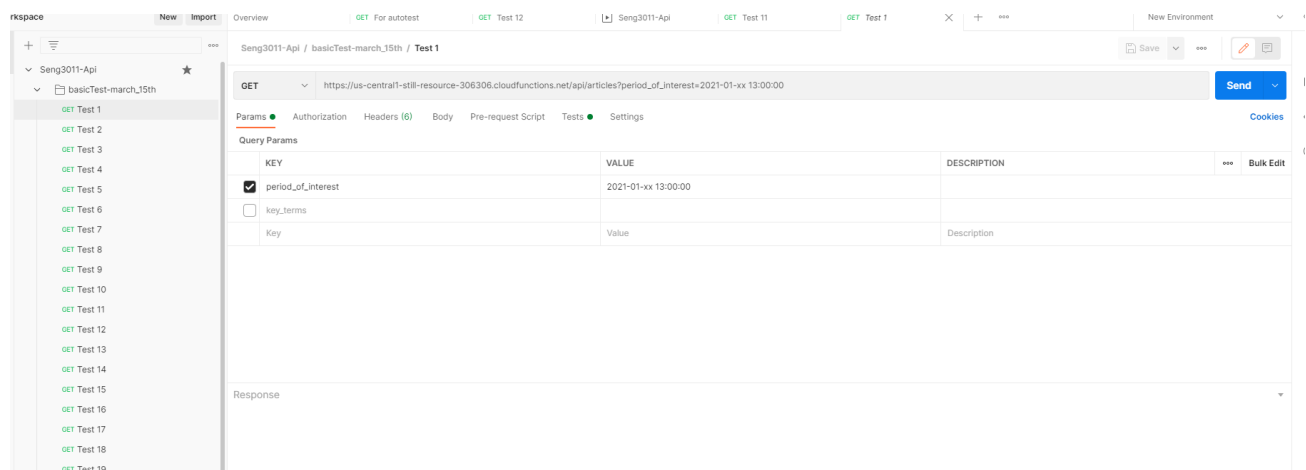


1 Unit tests for API

1.1 Test Brief

Our unit tests are mainly implemented through postman. Postman is a test software that can test automatically. It allows us to define URL, request mode and query params freely. At the same time, it provides script functionality for automatic tests, as well as multi clock view return data. We can view the return value of our API from page and file, so as to simply query the expected output of JSON. With it, we can simply create one or more requests and specify the corresponding test set in the corresponding test. At the same time, it provides run-time detection, so that we can detect the efficiency of our program.

It also supports the command line run mode based on Postman and Newman, which makes it easier for us to run automated tests to test our programs.



1.2 Test Input

Test ID	Test reason	Test analysis
1	Basic test-corresponding to a single timestamp	Success
2	Corresponding to two timestamps	Fail
3	Corresponds to 1 precise time	Fail
4	Corresponding to 2 precise time	Success

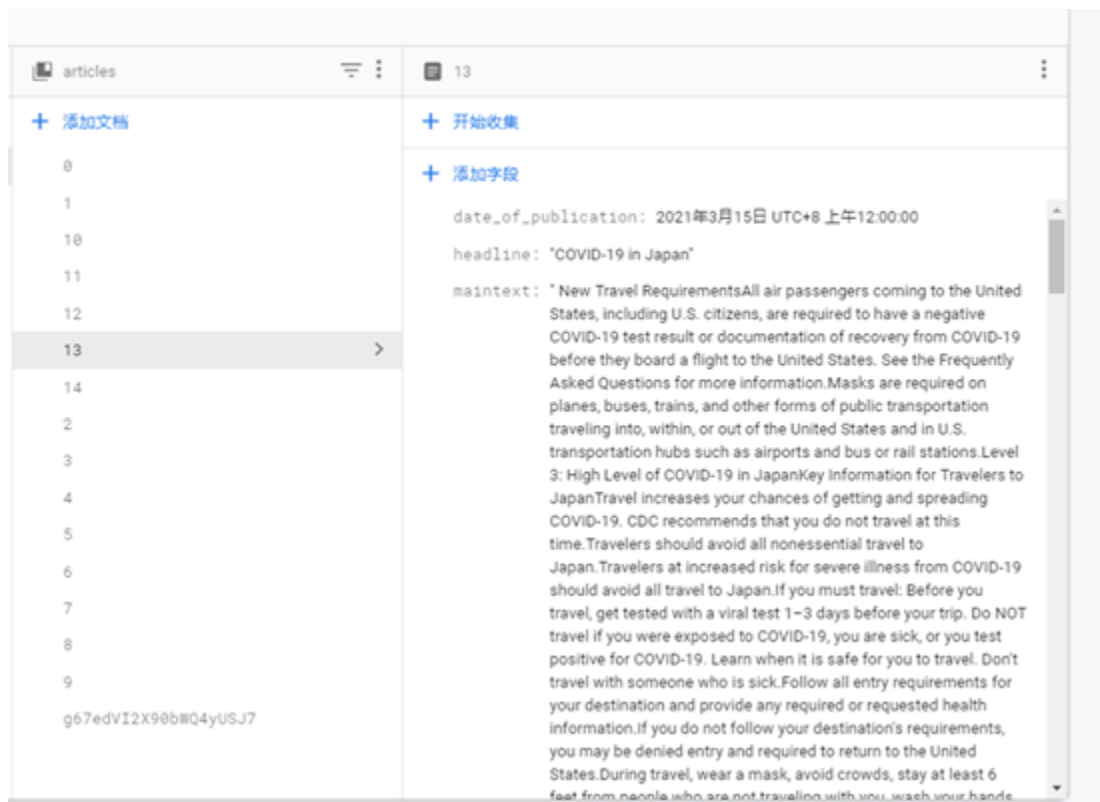
5	Corresponding to 2 precise times (standard)	Success
6	Corresponding to 2 precise times (reverse order)	Success but no information, an error should be reported
7	Corresponds to 2 precise times, but the time is wrong	Return 200,but need 400
8	Corresponds to 2 precise times, the first time is wrong	Success
9	Corresponds to 2 precise times, the second time is wrong	Success
10	Corresponds to 2 precise times, ignoring hours	Success
11	Check Extremely close time	Success
12	Check Same time	Success
13	Add the normal Test -cov of key_term	Success
14	Abnormal Test-cov with key_term added	Success
15	Add the normal Test wuhan of key_term	Success
16	Add key_term's normal Test Fever of unknown Origin	Success
17	Normal Test fever with key_term added	Success

18	Add key_term abnormality Test silence wench	Maybe it should return an error response that no information was found, but 200 was returned, need 400
19	Can the test recognize similar diseases -covid-19	It seems that there is no such function

The data of Unit test in Phase_1/TestScripts

2 Test for Scraper

We test whether our scraper runs successfully by giving the specified web page. First, we find a web page whose information has been manually determined (the amount of information that can be captured is less than 20, so we can simply check it), and then we execute our scraper. When we run our program, it will automatically upload articles and corresponding reports to the cloud server, namely firestore, and then we will screen the data by calling the functions inside and manually, and finally determine whether our data is correct.



Unit tests for Webscraper

- Given this HTML, it should input This into the firestore database

3.Integration tests

- I want this report from here So I call the CDC to run and scrape the file as well as I then call the API to return me the right data

4.load testing

- Give it a lot of queries at once

<https://k6.io/blog/load-testing-with-postman-collections>

We choose to use the K6 library and stoplight for load testing. The specific operation skills are listed in the above link. We design multiple test points and test them with a wide range of multiple requests to simulate the stability of our API in different situations and the fluctuation of certain performance. As a result, the Google cloud server that hosts the API has a very large load, and it can still maintain a low latency at the level of more requests.

5.security testing

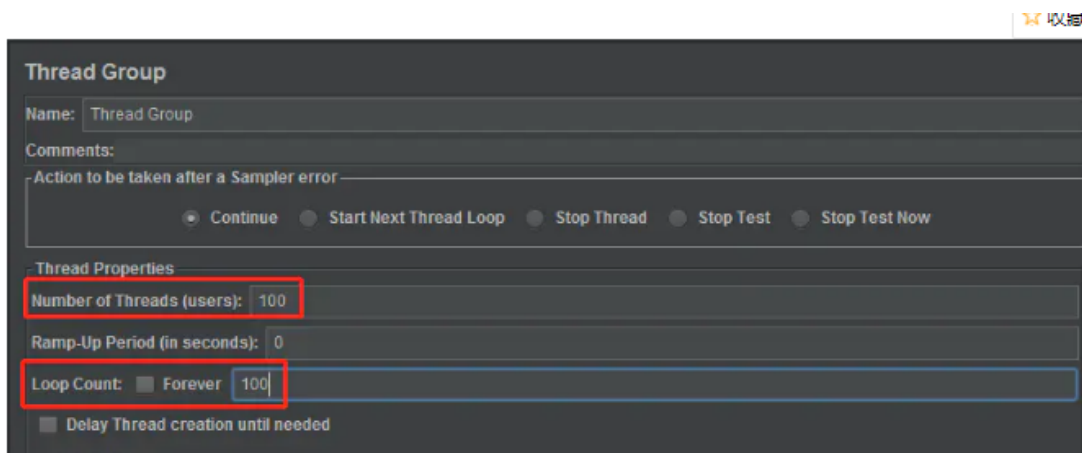
- Test Cors policy
- See if you can access without authentication (we have none of this set up yet)

6.Performance testing

- Basically we can send a lot of tests at a certain interval and average out the times

<https://anna-dolnyk.medium.com/performance-testing-with-postman-715fa0d717e3>

We use JMeter to test in this aspect. We give up postman because we have not found that postman can support multi-threaded testing. This can not reasonably simulate the situation that a large number of users send information to our server. To be sure, five people using postman at the same time may also be able to simulate part of the situation. But JMeter has a better performance in performance testing. We generate random information, and then make multiple information requests to our API through JMeter's multithreading request, and check the API delay, so as to get the result



7.Later

- Regression tests for website using jest and snapshots
- Git LFS

Name of test, POI, Key terms, Location, Response