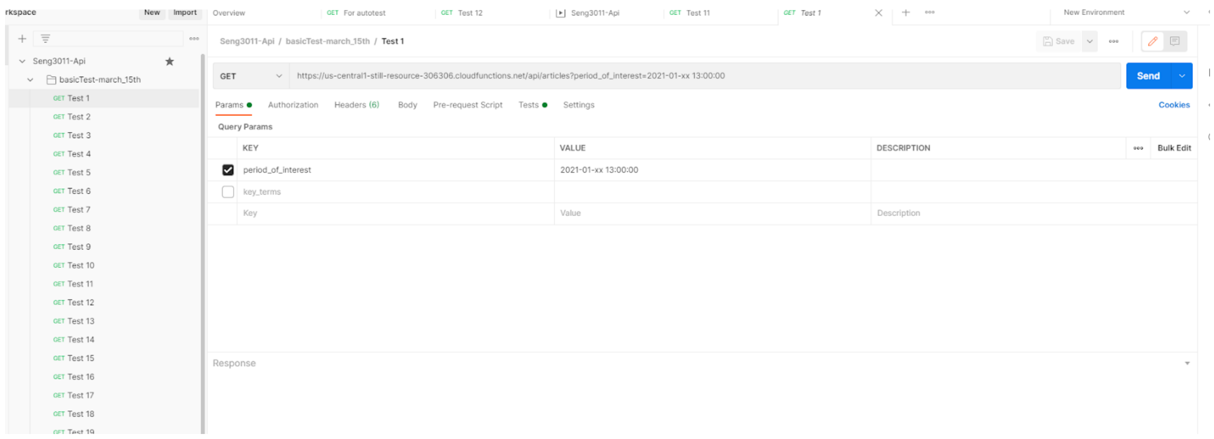
1 Unit tests for API

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.



Seng3011-Api / basicTest-march_15th / Test 1

GET https://us-central1-still-resource-306306.cloudfunctions.net/api/articles?period_of_interest=2021-01-xx 13:00:00

Query Params

	KEY	VALUE	DESCRIPTION
☑	period_of_interest	2021-01-xx 13:00:00	
☐	key_terms		
	Key	Value	Description

1.2 Test Input

Test ID	Test reason	Test analysis
1	Basic test-corresponding to a single timestamp	Success
2	Corresponding to two timestamps	Success
3	Corresponds to 1 precise time	Success
4	Corresponding to 2 precise time	Success
5	Corresponding to 2 precise times (standard)	Success

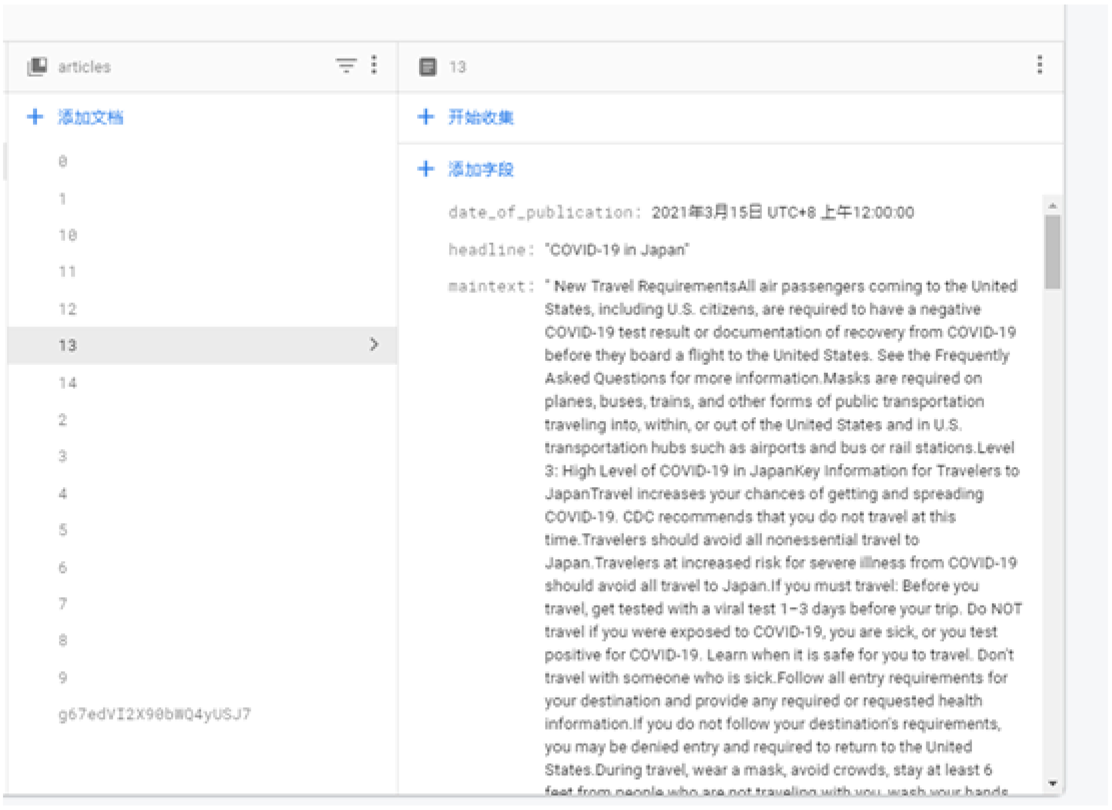
6	Corresponding to 2 precise times (reverse order)	Success it return empty
7	Corresponds to 2 precise times, but the time is wrong	Return 200,but need 400,it will be fix later
8	Corresponds to 2 precise times, the first time is wrong	Success
9	Corresponds to 2 precise times, the second time is wrong	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	Success,it returns empty
19	Can the test recognize similar diseases -covid-19	Success,It seems that there is no such function

20	Test multiple keys_terms	Success

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.



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g67edVI2X90bWQ4yUSJ7
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date_of_publication: 2021年3月15日 UTC+8 上午12:00:00

headline: "COVID-19 in Japan"

maintext: " New Travel RequirementsAll air passengers coming to the United States, including U.S. citizens, are required to have a negative COVID-19 test result or documentation of recovery from COVID-19 before they board a flight to the United States. See the Frequently Asked Questions for more information.Masks are required on planes, buses, trains, and other forms of public transportation traveling into, within, or out of the United States and in U.S. transportation hubs such as airports and bus or rail stations.Level 3: High Level of COVID-19 in JapanKey Information for Travelers to JapanTravel increases your chances of getting and spreading COVID-19. CDC recommends that you do not travel at this time.Travelers should avoid all nonessential travel to Japan.Travelers at increased risk for severe illness from COVID-19 should avoid all travel to Japan.If you must travel: Before you travel, get tested with a viral test 1–3 days before your trip. Do NOT travel if you were exposed to COVID-19, you are sick, or you test positive for COVID-19. Learn when it is safe for you to travel. Don't travel with someone who is sick.Follow all entry requirements for your destination and provide any required or requested health information.If you do not follow your destination's requirements, you may be denied entry and required to return to the United States.During travel, wear a mask, avoid crowds, stay at least 6 feet from people who are not traveling with you, wash your hands

Test ID	Test reason	Test analysis
1	Standard CDC web page	Success

2	Standard CDC webpage with accurate event time	Success,Returned the correct time
3	Standard CDC webpage with accurate event time in the future	Success,The default value is returned

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
- Test completed in unit test

4.load testing

We choose to use the 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.

Test ID	Test reason	Number of requests	Speed	test analysis
1	Random time period	50	less 200ms	Success
2	Random time period	100	less 200ms	Success
3	Random time period	500	less 200ms	Success

4	Random time period with random key	50	less 200ms	Success
5	Random time period with random key	100	less 200ms	Success
6	Random time period with random key	500	less 200ms	Success

5.security testing

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

6.Performance testing

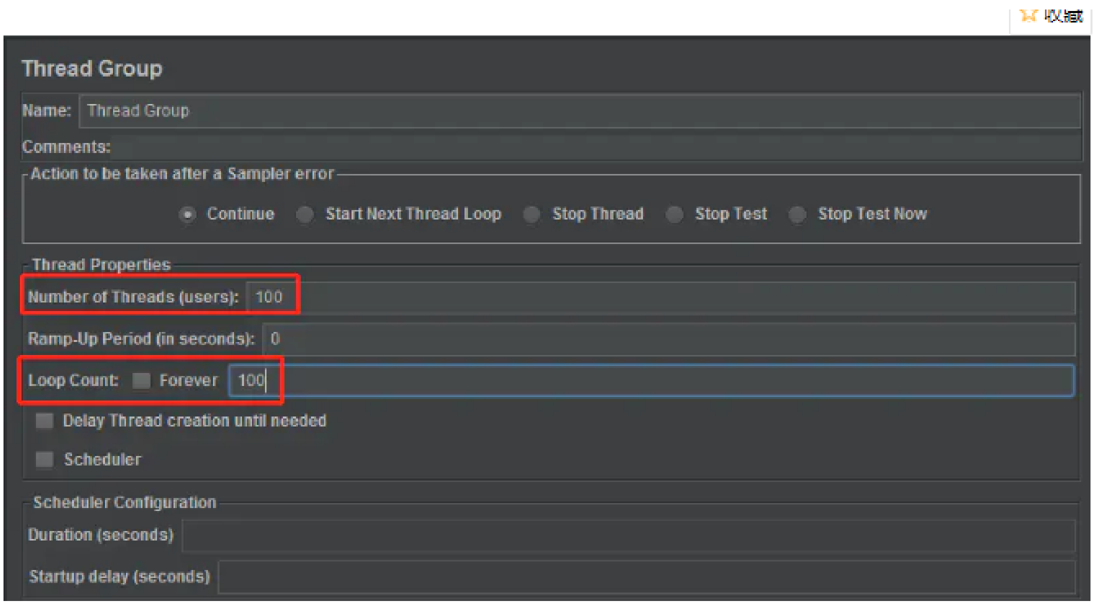
- Basically we can send a lot of tests at a certain interval and average out the times

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

Test ID	Test reason	Number of Users	Number of requests	Average return time	test analysis
1	Random time period	50	10	less 200ms	Success

2	Random time period	100	10	less 200ms	Success
3	Random time period	300	10	less 200ms	Success
4	Random time period with random key	50	10	less 200ms	Success
5	Random time period with random key	100	10	less 200ms	Success
6	Random time period with random key	300	10	less 200ms	Success



Thread Group

Name: Thread Group

Comments:

Action to be taken after a Sampler error

[✓ Continue] Start Next Thread Loop Stop Thread Stop Test Stop Test Now

Thread Properties

Number of Threads (users): 100

Ramp-Up Period (in seconds): 0

Loop Count: Forever 100

Delay Thread creation until needed

Scheduler

Scheduler Configuration

Duration (seconds)

Startup delay (seconds)

7.Later

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

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