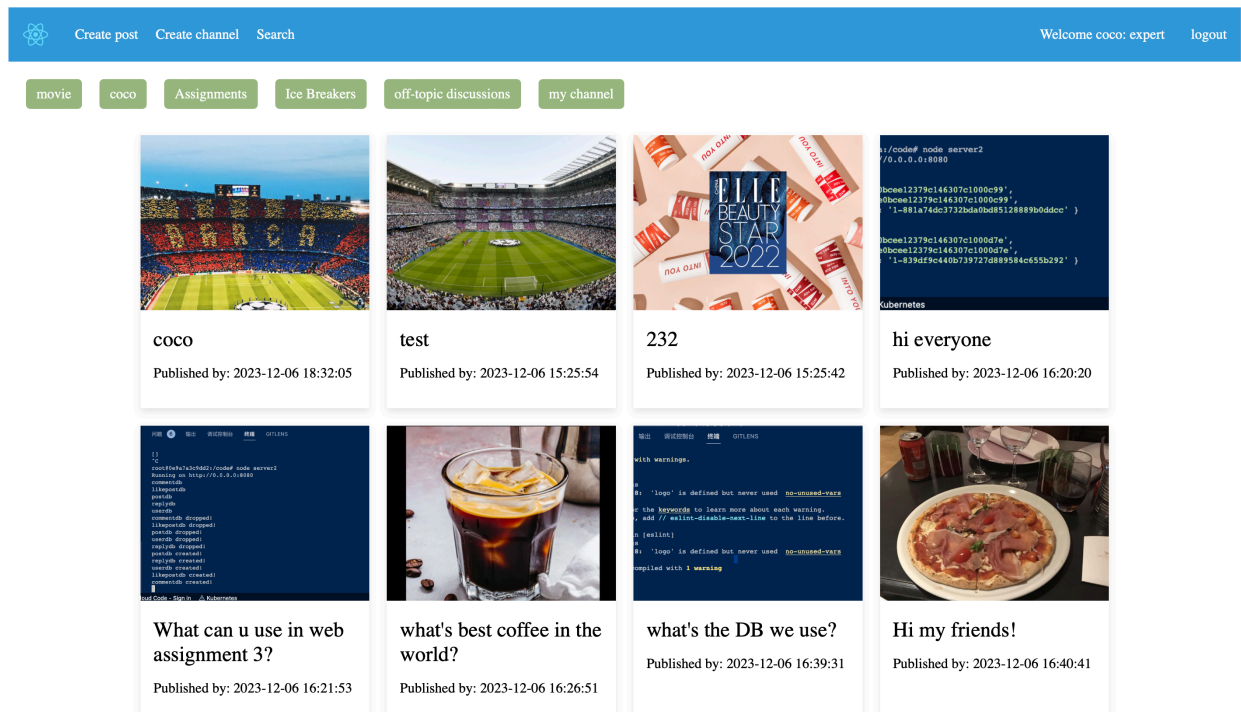I tested with postman on the api, and with npm loadtest package (after login)

In server/, test with different settings
Part of scripts (add –m POST or –m GET and else with data for different api requests)
loadtest –n 500 –c 200 ––rps 200 http://0.0.0.0:3001/posts/create
loadtest –n 5000 –c 200 ––rps 200 http://0.0.0.0:3001/posts/create
loadtest –n 500 –c 400 ––rps 200 http://0.0.0.0:3001/posts/create

loadtest –n 500 –c 200 ––rps 200 http://0.0.0.0:3001/posts/getAll
loadtest –n 500 –c 200 ––rps 200 http://0.0.0.0:3001/posts/search
loadtest –n 500 –c 200 ––rps 200 http://0.0.0.0:3001/posts/byID
loadtest –n 500 –c 200 ––rps 200 http://0.0.0.0:3001/posts/delete
loadtest –n 500 –c 200 ––rps 200 http://0.0.0.0:3001/posts/like

loadtest –n 500 –c 200 ––rps 200 http://0.0.0.0:3001/users/ …
loadtest –n 500 –c 200 ––rps 200 http://0.0.0.0:3001/channels/   …
loadtest –n 500 –c 200 ––rps 200 http://0.0.0.0:3001/comments/ …

Some results I get :
Can tell that search would take more time which is 17 s (with same number of requests)
than post which takes 47s, and both kinds of request would take longer than a 'like'(9s)

and 'dislike'. This might be that the query to find a post in the table in the database takes longer time than an insert. Searching posts user by user id takes just slightly longer(49s) than searching posts with an id, and it might be because of with a certain user id, it doesn't really narrows down the scope of table for a sql find query, because it need to search in users table for a user first and then go to search in posts table.

```
07 GMT-0600 (北美中部标准时间)] INFO Requests: 250 (50%), requests per second: 26, mean latency: 25943.2 ms
07 GMT-0600 (北美中部标准时间)] INFO Errors: 132, accumulated errors: 237, 94.8% of total requests
12 GMT-0600 (北美中部标准时间)] INFO Requests: 352 (70%), requests per second: 20, mean latency: 25951.5 ms
12 GMT-0600 (北美中部标准时间)] INFO Errors: 102, accumulated errors: 339, 96.3% of total requests
17 GMT-0600 (北美中部标准时间)] INFO Requests: 354 (71%), requests per second: 0, mean latency: 25932.6 ms
17 GMT-0600 (北美中部标准时间)] INFO Errors: 2, accumulated errors: 341, 96.3% of total requests
21 GMT-0600 (北美中部标准时间)] INFO
22 GMT-0600 (北美中部标准时间)] INFO Target URL:          http://0.0.0.0:3001/users/searchUserPost
22 GMT-0600 (北美中部标准时间)] INFO Max requests:        500
22 GMT-0600 (北美中部标准时间)] INFO Concurrency level:   200
22 GMT-0600 (北美中部标准时间)] INFO Agent:               none
22 GMT-0600 (北美中部标准时间)] INFO Requests per second: 200
22 GMT-0600 (北美中部标准时间)] INFO
22 GMT-0600 (北美中部标准时间)] INFO Completed requests:  500
22 GMT-0600 (北美中部标准时间)] INFO Total errors:        460
22 GMT-0600 (北美中部标准时间)] INFO Total time:          49.628385537 s
22 GMT-0600 (北美中部标准时间)] INFO Requests per second: 10
22 GMT-0600 (北美中部标准时间)] INFO Mean latency:        32044.2 ms
22 GMT-0600 (北美中部标准时间)] INFO
22 GMT-0600 (北美中部标准时间)] INFO Percentage of the requests served within a certain time
22 GMT-0600 (北美中部标准时间)] INFO    50%      25941 ms
22 GMT-0600 (北美中部标准时间)] INFO    90%      48774 ms
22 GMT-0600 (北美中部标准时间)] INFO    95%      48790 ms
22 GMT-0600 (北美中部标准时间)] INFO    99%      48998 ms
22 GMT-0600 (北美中部标准时间)] INFO    100%      49077 ms (longest request)
22 GMT-0600 (北美中部标准时间)] INFO
22 GMT-0600 (北美中部标准时间)] INFO    100%      49077 ms (longest request)
22 GMT-0600 (北美中部标准时间)] INFO
```

Also can tell that data size would not seem to matter (without adding picture in contents), and I haven't tested creating posts/comments with a picture.

With more total number of request, the performance is taking slower time per request, for example in create method for post, it takes 2000 requests, and time is195s,

```
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO Target URL:          http://0.0.0.0:3001/posts/create
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO Max requests:        5000
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO Concurrency level:   200
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO Agent:               none
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO Requests per second: 200
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO Completed requests:  5000
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO Total errors:        5000
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO Total time:          195.803335414 s
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO Requests per second: 26
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO Mean latency:        36352.1 ms
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO Percentage of the requests served within a certain time
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO    50%      27051 ms
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO    90%      77221 ms
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO    95%      81656 ms
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO    99%      143514 ms
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO    100%      171821 ms (longest request)
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO    100%      171821 ms (longest request)
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO    404:   1067 errors
[Wed Dec 06 2023 15:32:44 GMT-0600 (北美中部标准时间)] INFO    -1:    3933 errors
```

per request time is 0.097s and when there are 200 requests it took 18.9s, per request time is 0.045s

Ans with more concurrency the performance is better, taking create posts method 7.6s instead of 49.6s.

```
 lukejing@kejingPro project % loadtest -n 500 -c 400 --rps 200 http://0.0.0.0:3001/posts/create
[Wed Dec 06 2023 15:42:51 GMT-0600 (北美中部标准时间)] INFO Requests: 0 (0%), requests per second: 0, mean latency: 0 ms
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Requests: 21 (4%), requests per second: 3, mean latency: 1489.4 ms
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Errors: 21, accumulated errors: 21, 100% of total requests
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Target URL:           http://0.0.0.0:3001/posts/create
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Max requests:         500
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Concurrency level:    400
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Agent:                none
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Requests per second: 200
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Completed requests:   500
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Total errors:         500
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Total time:           7.680796599000001 s
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Requests per second: 65
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Mean latency:         3463.7 ms
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO Percentage of the requests served within a certain time
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO    50%      3281 ms
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO    90%      6315 ms
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO    95%      6675 ms
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO    99%      6913 ms
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO    100%     6963 ms (longest request)
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO    100%     6963 ms (longest request)
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:42:58 GMT-0600 (北美中部标准时间)] INFO    404:    500 errors
```

And some other outcomes from terminal:
 loadtest –n 5000 –c 200 ––rps 200 http://0.0.0.0:3001/posts/create

```
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO Target URL:           http://0.0.0.0:3001/posts/create
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO Max requests:         5000
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO Concurrency level:    200
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO Agent:                none
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO Requests per second: 200
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO Completed requests:   5000
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO Total errors:         5000
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO Total time:           176.039654114 s
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO Requests per second: 28
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO Mean latency:         31568.5 ms
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO Percentage of the requests served within a certain time
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO    50%      27402 ms
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO    90%      66875 ms
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO    95%      84582 ms
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO    99%      126072 ms
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO    100%     160189 ms (longest request)
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO    100%     160189 ms (longest request)
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO    404:    540 errors
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO    408:    148 errors
[Wed Dec 06 2023 15:47:33 GMT-0600 (北美中部标准时间)] INFO    -1:    4312 errors
```

loadtest –n 500 –c 200 ––rps 200 http://0.0.0.0:3001/channels/create

```
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO Target URL:           http://0.0.0.0:3001/channels/create
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO Max requests:         500
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO Concurrency level:    200
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO Agent:                none
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO Requests per second: 200
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO Completed requests:   500
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO Total errors:         500
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO Total time:           29.125881128 s
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO Requests per second: 17
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO Mean latency:         24409.9 ms
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO Percentage of the requests served within a certain time
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO    50%      24320 ms
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO    90%      27940 ms
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO    95%      28392 ms
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO    99%      28720 ms
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO    100%     28806 ms (longest request)
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO    100%     28806 ms (longest request)
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO
[Wed Dec 06 2023 15:48:58 GMT-0600 (北美中部标准时间)] INFO    404:    500 errors
```