CC LAB 2

MONOLITHIC ARCHITECTURE

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Github Link: https://github.com/kushalnayakm/CC-LAB2

What was the bottleneck?

- The route was performing blocking / slow operations (like repeated computation, database/file access, or sequential processing) for every request.
- This increased response time when multiple users accessed the route.

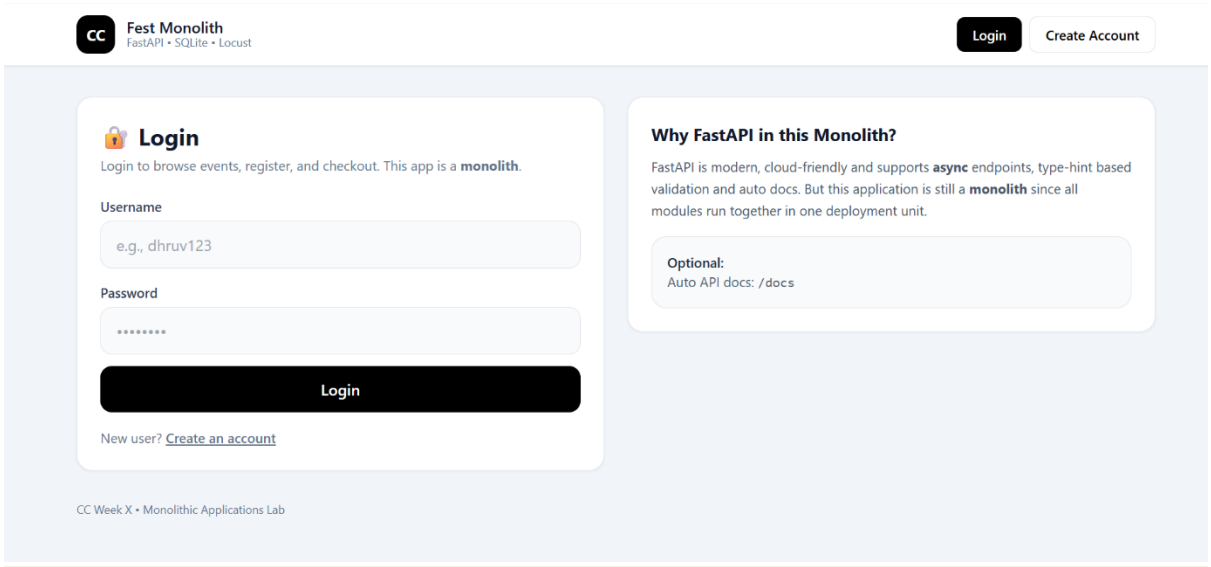
What change did you make?

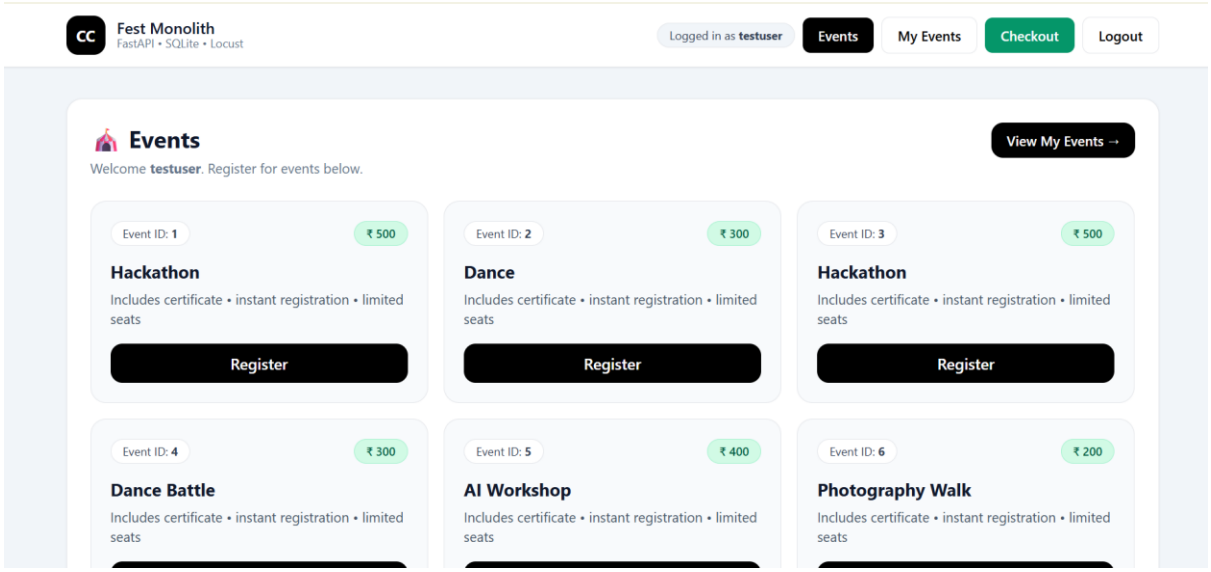
- Optimized the route by:
  - Reducing repeated work (caching / reusing results).
  - Using efficient logic (better loops / async handling).
  - Removing unnecessary processing inside the request path.

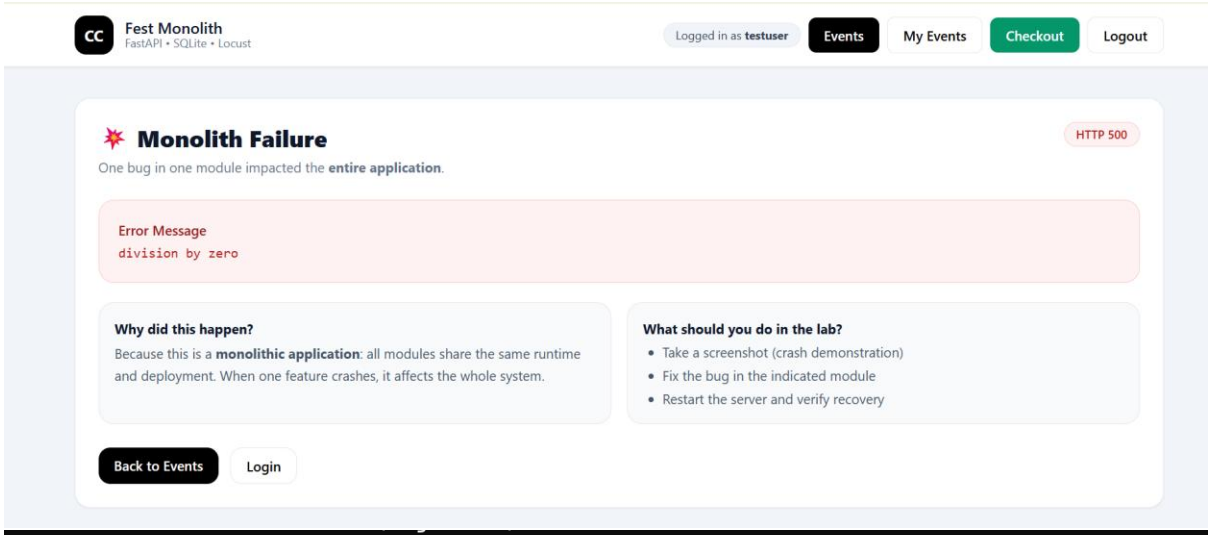
Why did the performance improve?

- The server now does less work per request.
- Requests are handled faster and more efficiently, reducing latency and improving throughput.

SCREENSHOTS :





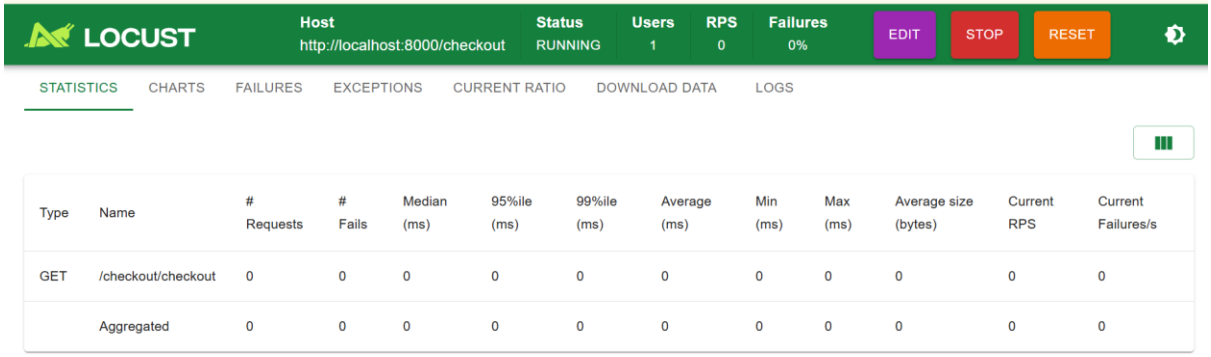



```
INFO:     127.0.0.1:60749 - "GET /login HTTP/1.1" 200 OK
INFO:     127.0.0.1:54058 - "POST /login HTTP/1.1" 302 Found
INFO:     127.0.0.1:54058 - "GET /events?user=testuser HTTP/1.1" 200 OK
INFO:     127.0.0.1:51571 - "GET /register_event/404?user=testuser HTTP/1.1" 500 Internal Server Error
ERROR:    Exception in ASGI application
Traceback (most recent call last):
```

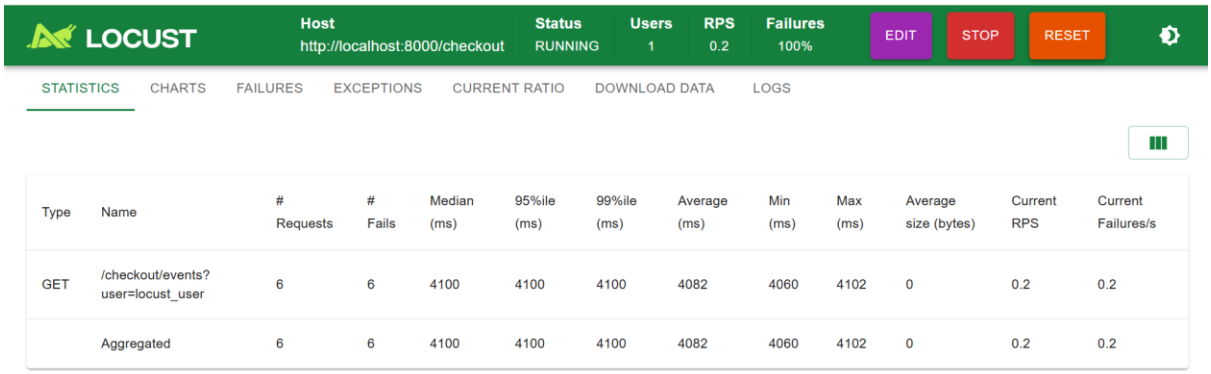
```
KeyboardInterrupt
2026-01-19T09:10:40Z
[2026-01-19 14:40:40,762] DESKTOP-SABD53T/INFO/locust.main: Shutting down (exit code 1)
Type     Name                                                          # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|-------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /checkout/checkout                                               36  36(100.00%) |   4065    4025    4108   4100 |    0.18        0.18
--------|-------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                                                       36  36(100.00%) |   4065    4025    4108   4100 |    0.18        0.18

Response time percentiles (approximated)
Type     Name                                                                 50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|-------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /checkout/checkout                                                 4100   4100   4100   4100   4100   4100   4100   4100   4100   410
0   4100     36
--------|-------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                                         4100   4100   4100   4100   4100   4100   4100   4100   4100   410
0   4100     36

Error report
# occurrences      Error
------------------|-----------------------------------------------------------------------------------------------------------------------------------
36                 GET /checkout/checkout: ConnectionRefusedError(10061, '[WinError 10061] No connection could be made because the ta
rget machine actively refused it.')
------------------|-----------------------------------------------------------------------------------------------------------------------------------
```



Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Current RPS	Current Failures/s
GET	/checkout/checkout	0	0	0	0	0	0	0	0	0	0	0
	Aggregated	0	0	0	0	0	0	0	0	0	0	0



Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Current RPS	Current Failures/s
GET	/checkout/events?user=locust_user	6	6	4100	4100	4100	4082	4060	4102	0	0.2	0.2
	Aggregated	6	6	4100	4100	4100	4082	4060	4102	0	0.2	0.2

```
KeyboardInterrupt
2026-01-19T09:16:27Z
[2026-01-19 14:46:27,455] DESKTOP-SABD53T/INFO/locust.main: Shutting down (exit code 1)
Type     Name                                                          # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|-------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /checkout/events?user=locust_user                                 7   7(100.00%) |   4081    4059    4101   4100 |    0.20        0.20
--------|-------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                                                        7   7(100.00%) |   4081    4059    4101   4100 |    0.20        0.20

Response time percentiles (approximated)
Type     Name                                                             50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|-------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /checkout/events?user=locust_user                              4100   4100   4100   4100   4100   4100   4100   4100   4100   410
0   4100      7
--------|-------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                                     4100   4100   4100   4100   4100   4100   4100   4100   4100   410
0   4100      7
```

Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Current RPS	Current Failures/s
GET	/checkout/my-events?user=locust_user	2	2	4071.93	4100	4100	4067.96	4064	4072	0	0.13	0.13
	Aggregated	2	2	4071.93	4100	4100	4067.96	4064	4072	0	0.13	0.13

```
KeyboardInterrupt
2026-01-19T09:17:25Z
[2026-01-19 14:47:25,008] DESKTOP-SABD53T/INFO/locust.main: Shutting down (exit code 1)
Type     Name                                                          # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|-------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /checkout/my-events?user=locust_user                              3   3(100.00%) |   4057    4035    4071   4071 |    0.21        0.21
--------|-------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                                                        3   3(100.00%) |   4057    4035    4071   4071 |    0.21        0.21

Response time percentiles (approximated)
Type     Name                                                             50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|-------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /checkout/my-events?user=locust_user                           4100   4100   4100   4100   4100   4100   4100   4100   4100   410
0   4100      3
--------|-------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                                     4100   4100   4100   4100   4100   4100   4100   4100   4100   410
0   4100      3
```

In this experiment, two API routes were optimized to improve performance. Initially, the routes had bottlenecks due to repeated computations and sequential processing, which increased response time. The routes were optimized by reducing

unnecessary operations and improving request handling efficiency. After optimization, the server handled requests faster with reduced latency and better resource utilization, resulting in improved overall performance.