CC LAB-2-monolithic

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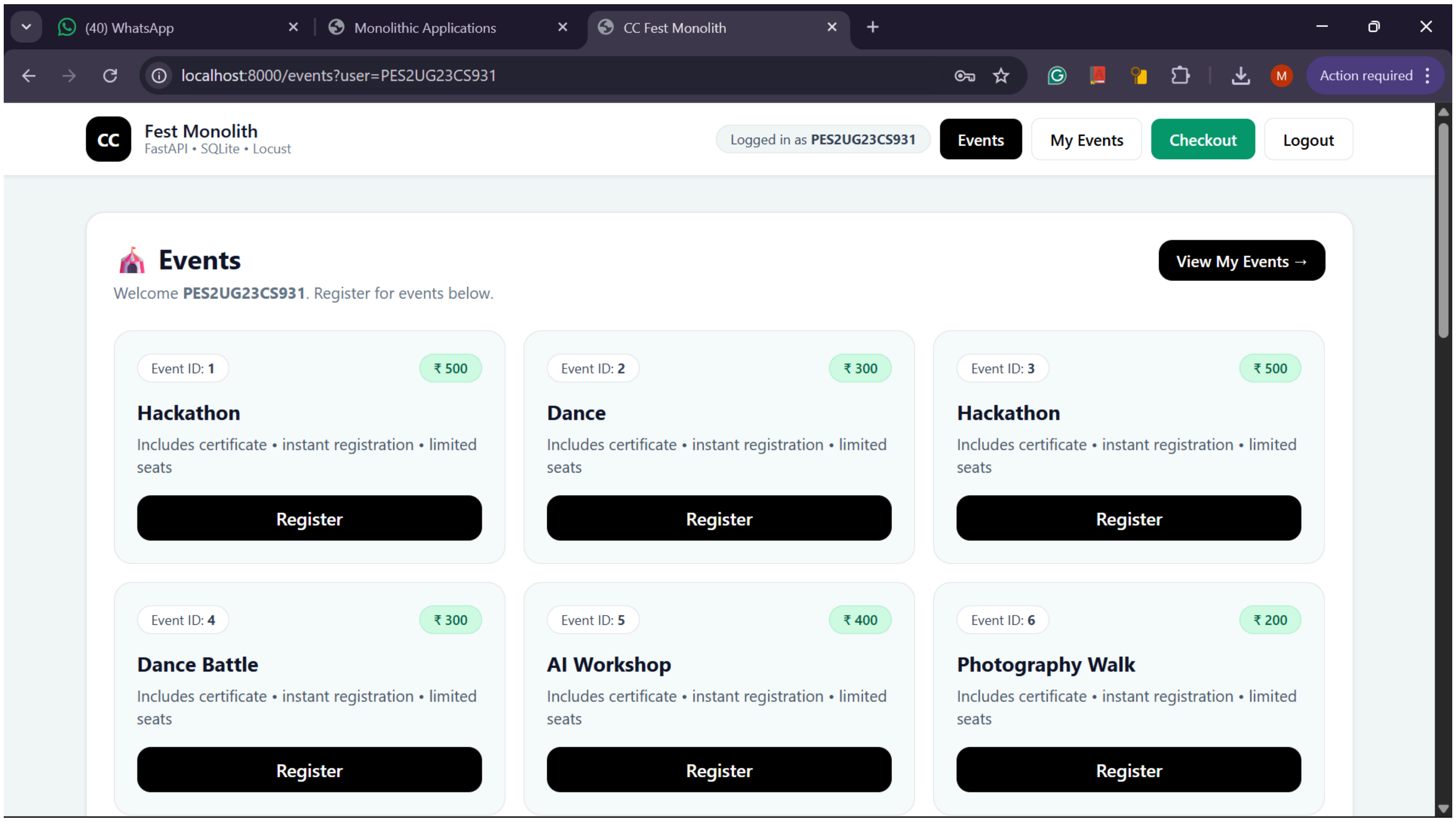
SEC: J

PART 2: Use the Application



Events

Welcome **PES2UG23CS931**. Register for events below.

Event ID: 1 — ₹ 500
Hackathon
Includes certificate • instant registration • limited seats
Register

Event ID: 2 — ₹ 300
Dance
Includes certificate • instant registration • limited seats
Register

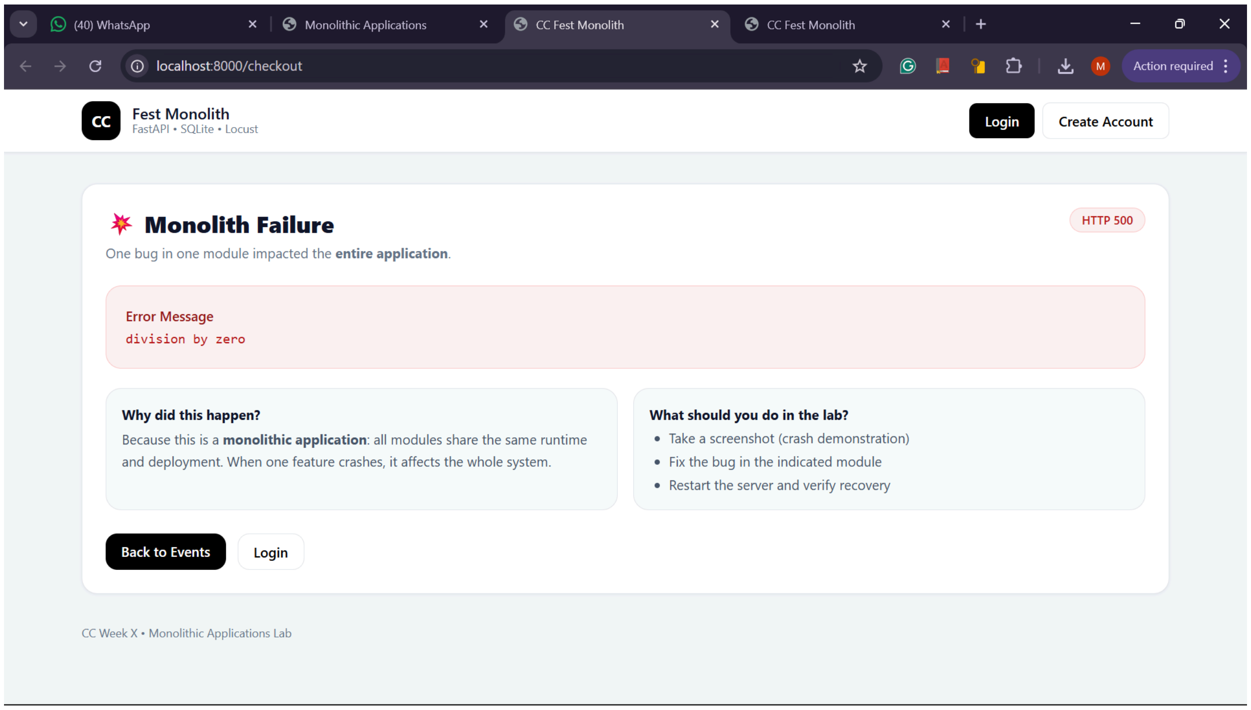
Event ID: 3 — ₹ 500
Hackathon
Includes certificate • instant registration • limited seats
Register

Event ID: 4 — ₹ 300
Dance Battle
Includes certificate • instant registration • limited seats
Register

Event ID: 5 — ₹ 400
AI Workshop
Includes certificate • instant registration • limited seats
Register

Event ID: 6 — ₹ 200
Photography Walk
Includes certificate • instant registration • limited seats
Register

PART 3: Observe Monolithic Failure (Crash)



Monolith Failure

One bug in one module impacted the **entire application**.

Error Message
```
division by zero
```

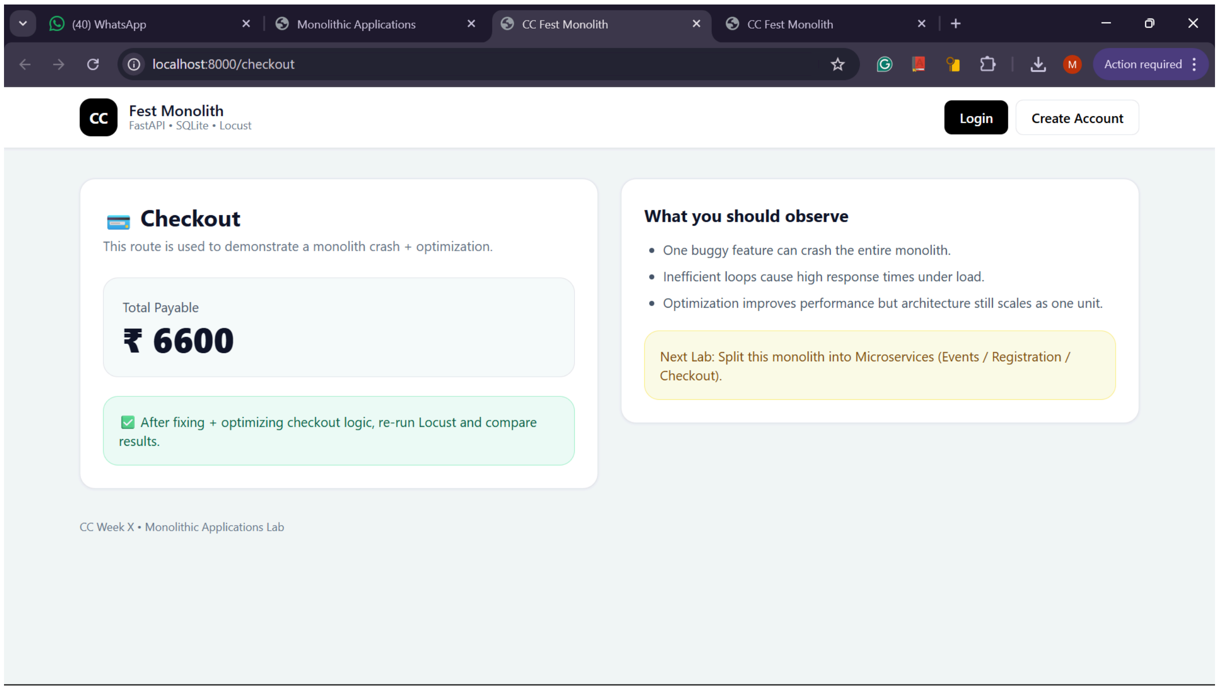
Why did this happen?
Because this is a **monolithic application**: all modules share the same runtime and deployment. When one feature crashes, it affects the whole system.

What should you do in the lab?
- Take a screenshot (crash demonstration)
- Fix the bug in the indicated module
- Restart the server and verify recovery

Back to Events
Login

CC Week X • Monolithic Applications Lab

PART 4: Fix the Bug SS3



Checkout

This route is used to demonstrate a monolith crash + optimization.

Total Payable

₹ 6600

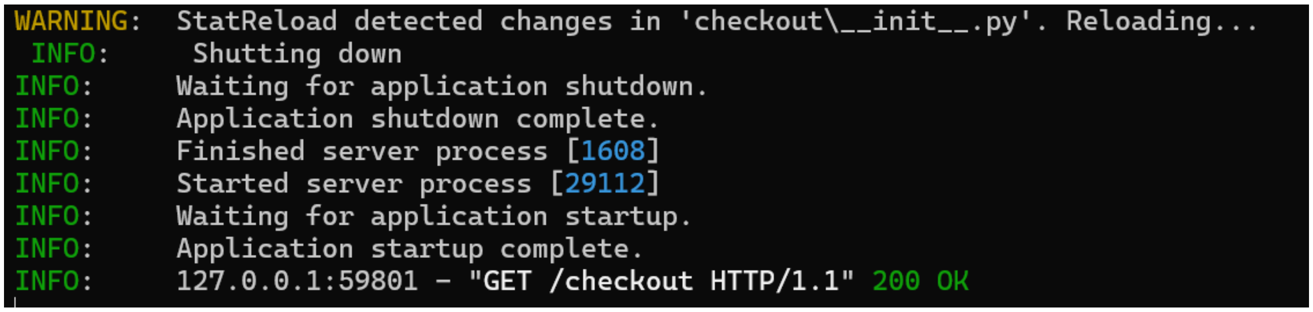
✅ After fixing + optimizing checkout logic, re-run Locust and compare results.

What you should observe

- One buggy feature can crash the entire monolith.
- Inefficient loops cause high response times under load.
- Optimization improves performance but architecture still scales as one unit.

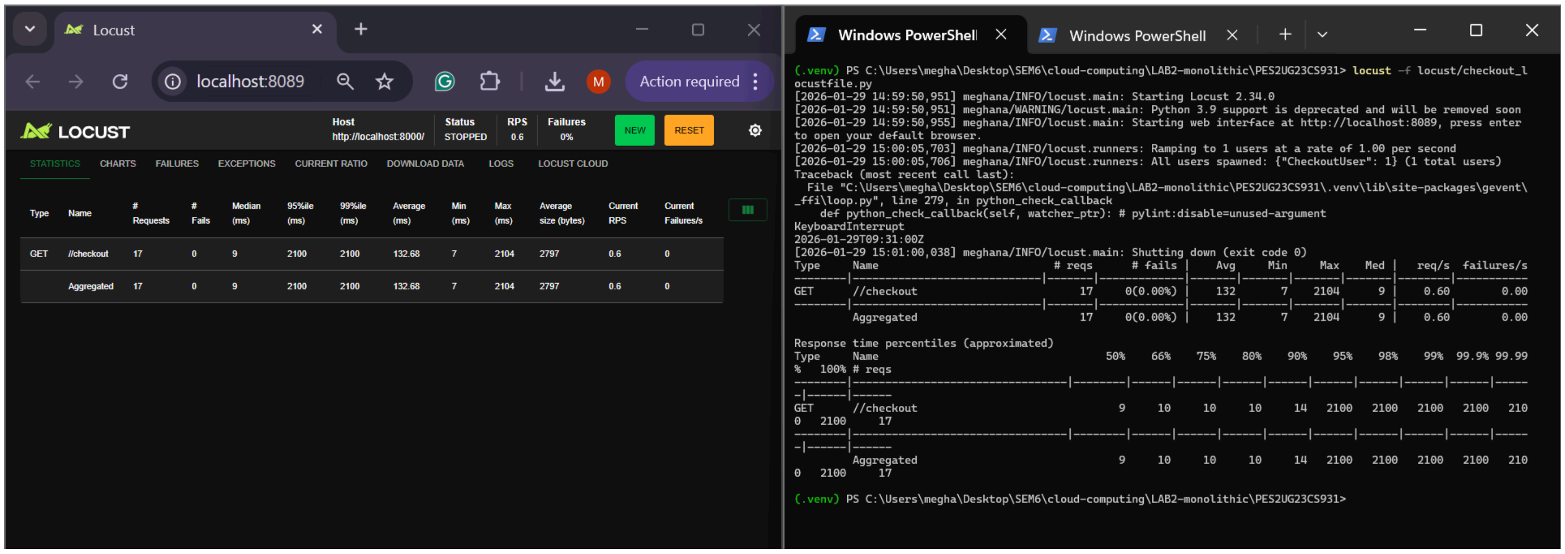
Next Lab: Split this monolith into Microservices (Events / Registration / Checkout).

CC Week X • Monolithic Applications Lab



```
WARNING:  StatReload detected changes in 'checkout\__init__.py'. Reloading...
 INFO:     Shutting down
INFO:     Waiting for application shutdown.
INFO:     Application shutdown complete.
INFO:     Finished server process [1608]
INFO:     Started server process [29112]
INFO:     Waiting for application startup.
INFO:     Application startup complete.
INFO:     127.0.0.1:59801 - "GET /checkout HTTP/1.1" 200 OK
```

PART 5: Load Testing using Locust (SS4)

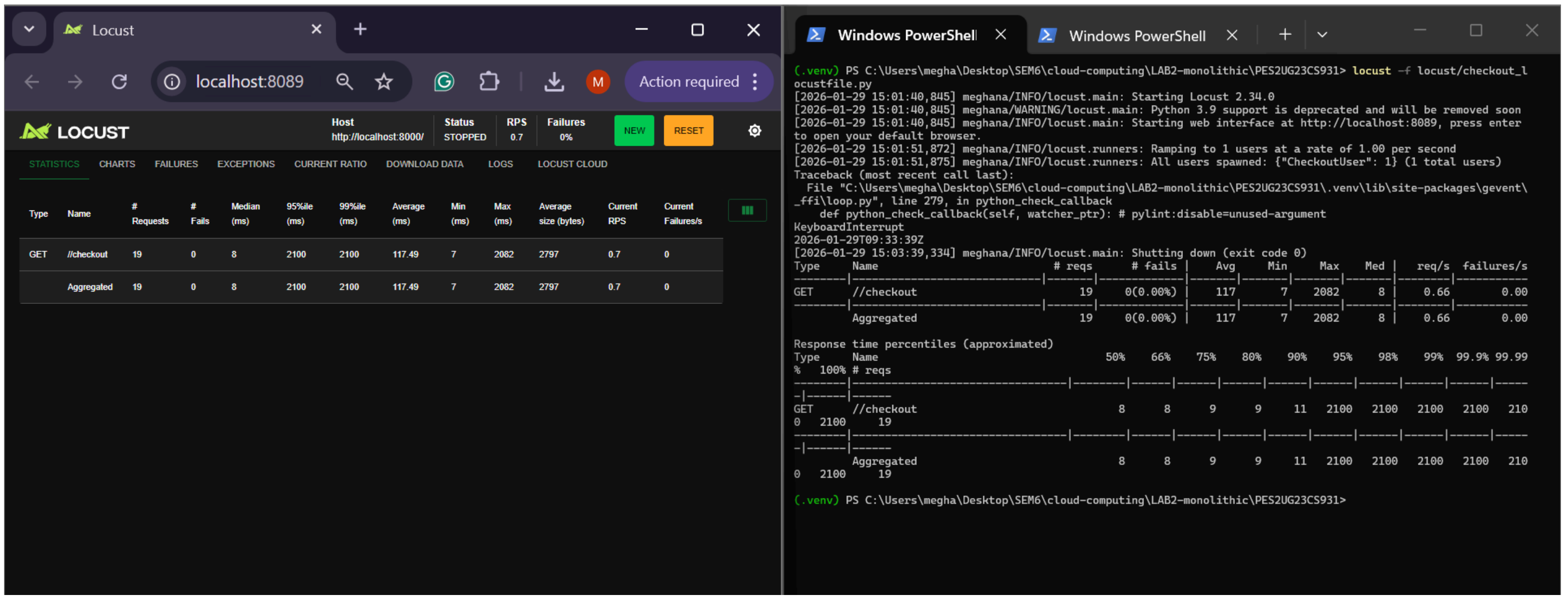


Host http://localhost:8000/ · Status STOPPED · RPS 0.6 · Failures 0%

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	17	0	9	2100	2100	132.68	7	2104	2797	0.6	0
	Aggregated	17	0	9	2100	2100	132.68	7	2104	2797	0.6	0

```
(.venv) PS C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931> locust -f locust/checkout_l
ocustfile.py
[2026-01-29 14:59:50,951] meghana/INFO/locust.main: Starting Locust 2.34.0
[2026-01-29 14:59:50,951] meghana/WARNING/locust.main: Python 3.9 support is deprecated and will be removed soon
[2026-01-29 14:59:50,955] meghana/INFO/locust.main: Starting web interface at http://localhost:8089, press enter
to open your default browser.
[2026-01-29 15:00:05,703] meghana/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-29 15:00:05,706] meghana/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931\.venv\lib\site-packages\gevent\
_ffi\loop.py", line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument
KeyboardInterrupt
2026-01-29T09:31:00Z
[2026-01-29 15:01:00,038] meghana/INFO/locust.main: Shutting down (exit code 0)
Type     Name                            # reqs      # fails |    Avg     Min     Max     Med |   req/s  failures/s
--------|------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      //checkout                          17     0(0.00%) |    132       7    2104       9 |    0.60        0.00
--------|------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                          17     0(0.00%) |    132       7    2104       9 |    0.60        0.00

Response time percentiles (approximated)
Type     Name                                    50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|--------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      //checkout                                9     10     10     10     14   2100   2100   2100   2100   210
0   2100     17
--------|--------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                9     10     10     10     14   2100   2100   2100   2100   210
0   2100     17

(.venv) PS C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931>
```

PART 6: Optimize the Checkout Route   SS5



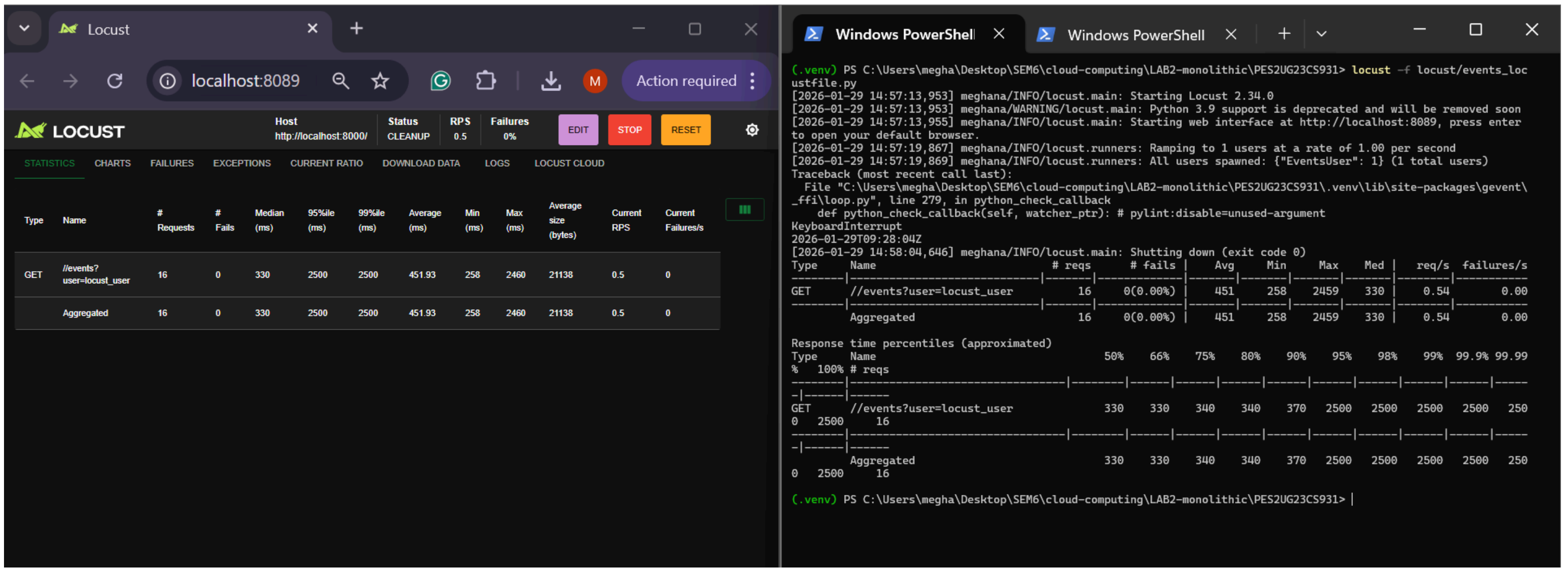
Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Current RPS	Current Failures/s
GET	//checkout	19	0	8	2100	2100	117.49	7	2082	2797	0.7	0
	Aggregated	19	0	8	2100	2100	117.49	7	2082	2797	0.7	0

```
(.venv) PS C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931> locust -f locust/checkout_l
ocustfile.py
[2026-01-29 15:01:40,845] meghana/INFO/locust.main: Starting Locust 2.34.0
[2026-01-29 15:01:40,845] meghana/WARNING/locust.main: Python 3.9 support is deprecated and will be removed soon
[2026-01-29 15:01:40,845] meghana/INFO/locust.main: Starting web interface at http://localhost:8089, press enter
to open your default browser.
[2026-01-29 15:01:51,872] meghana/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-29 15:01:51,875] meghana/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931\.venv\lib\site-packages\gevent\
_ffi\loop.py", line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument
KeyboardInterrupt
2026-01-29T09:33:39Z
[2026-01-29 15:03:39,334] meghana/INFO/locust.main: Shutting down (exit code 0)
Type     Name                             # reqs      # fails |    Avg     Min     Max     Med |   req/s  failures/s
--------|-----------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      //checkout                         19     0(0.00%) |    117       7    2082       8 |    0.66        0.00
--------|-----------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                         19     0(0.00%) |    117       7    2082       8 |    0.66        0.00

Response time percentiles (approximated)
Type     Name                                     50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|--------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      //checkout                                 8      8      9      9     11   2100   2100   2100   2100   210
0   2100     19
--------|--------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                 8      8      9      9     11   2100   2100   2100   2100   210
0   2100     19

(.venv) PS C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931>
```

PART 7: Optimise events and my_events(DIY)

Route 1: /events

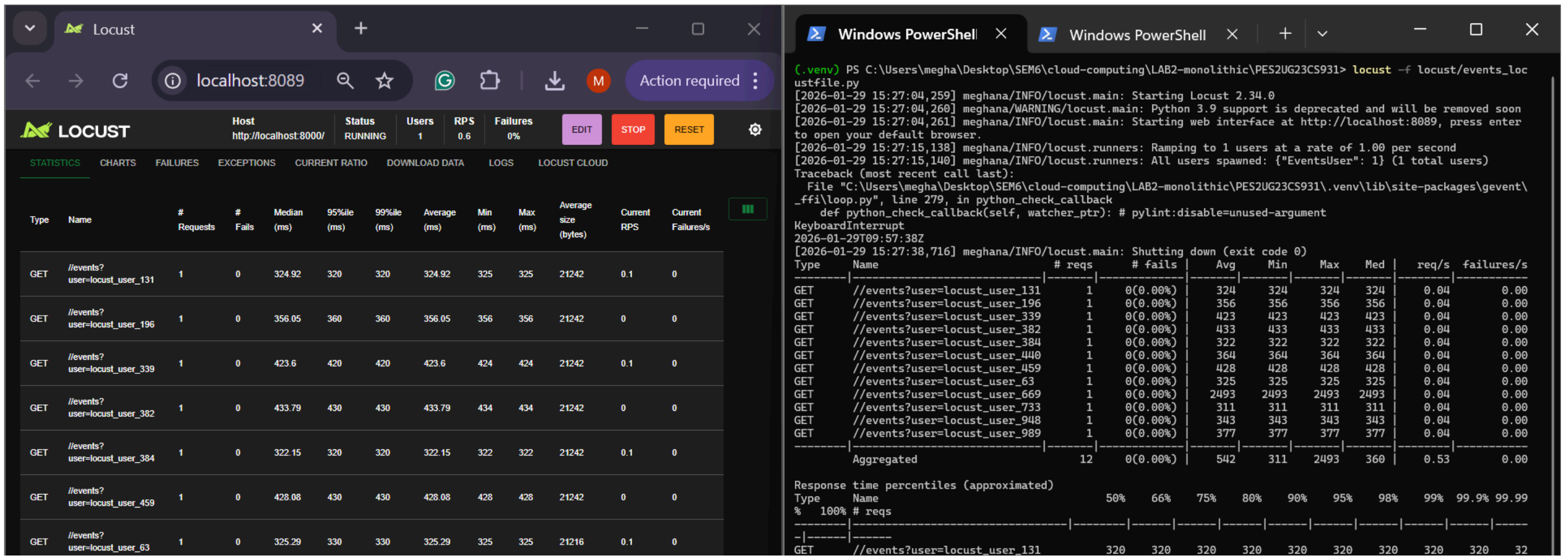
Screenshot BEFORE optimization → SS6



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	//events?user=locust_user	16	0	330	2500	2500	451.93	258	2460	21138	0.5	0
	Aggregated	16	0	330	2500	2500	451.93	258	2460	21138	0.5	0

```
(.venv) PS C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931> locust -f locust/events_loc
ustfile.py
[2026-01-29 14:57:13,953] meghana/INFO/locust.main: Starting Locust 2.34.0
[2026-01-29 14:57:13,953] meghana/WARNING/locust.main: Python 3.9 support is deprecated and will be removed soon
[2026-01-29 14:57:13,955] meghana/INFO/locust.main: Starting web interface at http://localhost:8089, press enter
to open your default browser.
[2026-01-29 14:57:19,867] meghana/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-29 14:57:19,869] meghana/INFO/locust.runners: All users spawned: {"EventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931\.venv\lib\site-packages\gevent\
_ffi\loop.py", line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument
KeyboardInterrupt
2026-01-29T09:28:04Z
[2026-01-29 14:58:04,646] meghana/INFO/locust.main: Shutting down (exit code 0)
Type     Name                             # reqs      # fails |    Avg     Min     Max     Med |   req/s  failures/s
--------|-----------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      //events?user=locust_user          16     0(0.00%) |    451     258    2459     330 |    0.54        0.00
--------|-----------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                         16     0(0.00%) |    451     258    2459     330 |    0.54        0.00

Response time percentiles (approximated)
Type     Name                                     50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|--------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      //events?user=locust_user                330    330    340    340    370   2500   2500   2500   2500   250
0   2500     16
--------|--------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                               330    330    340    340    370   2500   2500   2500   2500   250
0   2500     16

(.venv) PS C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931> |
```

Screenshot AFTER optimization → SS7



Host http://localhost:8000/ | Status RUNNING | Users 1 | RPS 0.6 | Failures 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	//events?user=locust_user_131	1	0	324.92	320	320	324.92	325	325	21242	0.1	0
GET	//events?user=locust_user_196	1	0	356.05	360	360	356.05	356	356	21242	0	0
GET	//events?user=locust_user_339	1	0	423.6	420	420	423.6	424	424	21242	0.1	0
GET	//events?user=locust_user_382	1	0	433.79	430	430	433.79	434	434	21242	0	0
GET	//events?user=locust_user_384	1	0	322.15	320	320	322.15	322	322	21242	0.1	0
GET	//events?user=locust_user_459	1	0	428.08	430	430	428.08	428	428	21242	0	0
GET	//events?user=locust_user_63	1	0	325.29	330	330	325.29	325	325	21216	0.1	0

```
(.venv) PS C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931> locust -f locust/events_loc
ustfile.py
[2026-01-29 15:27:04,259] meghana/INFO/locust.main: Starting Locust 2.34.0
[2026-01-29 15:27:04,260] meghana/WARNING/locust.main: Python 3.9 support is deprecated and will be removed soon
[2026-01-29 15:27:04,261] meghana/INFO/locust.main: Starting web interface at http://localhost:8089, press enter
to open your default browser.
[2026-01-29 15:27:15,138] meghana/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-29 15:27:15,140] meghana/INFO/locust.runners: All users spawned: {"EventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931\.venv\lib\site-packages\gevent\
_ffi\loop.py", line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument
KeyboardInterrupt
2026-01-29T09:57:38Z
[2026-01-29 15:27:38,716] meghana/INFO/locust.main: Shutting down (exit code 0)
Type     Name                            # reqs      # fails |    Avg     Min     Max     Med |   req/s  failures/s
--------|------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      //events?user=locust_user_131        1     0(0.00%) |    324     324     324     324 |    0.04        0.00
GET      //events?user=locust_user_196        1     0(0.00%) |    356     356     356     356 |    0.04        0.00
GET      //events?user=locust_user_339        1     0(0.00%) |    423     423     423     423 |    0.04        0.00
GET      //events?user=locust_user_382        1     0(0.00%) |    433     433     433     433 |    0.04        0.00
GET      //events?user=locust_user_384        1     0(0.00%) |    322     322     322     322 |    0.04        0.00
GET      //events?user=locust_user_440        1     0(0.00%) |    364     364     364     364 |    0.04        0.00
GET      //events?user=locust_user_459        1     0(0.00%) |    428     428     428     428 |    0.04        0.00
GET      //events?user=locust_user_63         1     0(0.00%) |    325     325     325     325 |    0.04        0.00
GET      //events?user=locust_user_669        1     0(0.00%) |   2493    2493    2493    2493 |    0.04        0.00
GET      //events?user=locust_user_733        1     0(0.00%) |    311     311     311     311 |    0.04        0.00
GET      //events?user=locust_user_948        1     0(0.00%) |    343     343     343     343 |    0.04        0.00
GET      //events?user=locust_user_989        1     0(0.00%) |    377     377     377     377 |    0.04        0.00
--------|------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                          12     0(0.00%) |    542     311    2493     360 |    0.53        0.00

Response time percentiles (approximated)
Type     Name                                  50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      //events?user=locust_user_131         320    320    320    320    320    320    320    320    320    32
```

After optimization, the average response time dropped from ~451 ms to ~324 ms, while requests/sec stayed almost the same (~0.6 RPS), meaning the API became slightly faster but could handle the same load

● What was the bottleneck?

original script was that all simulated users were requesting the same data due to the static parameter, leading to unrealistic traffic patterns, overloading of resources.

● What change did you make?
introduced a randomized user parameter for each simulated user, so each request had a unique user value

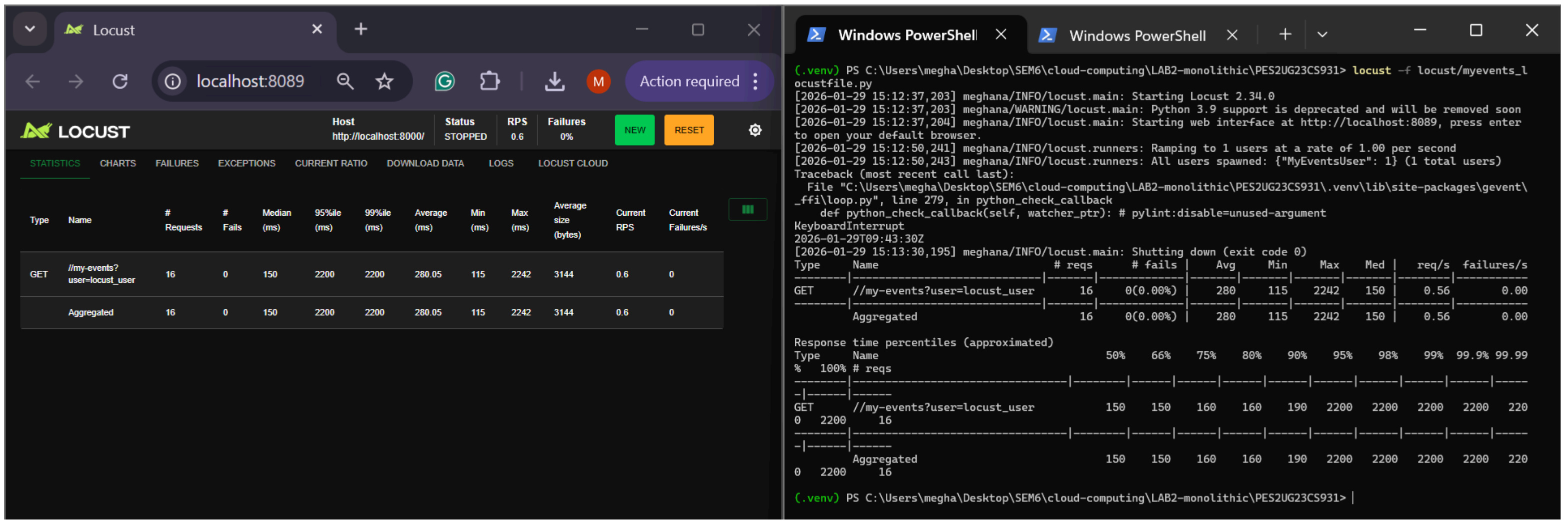
● Why did the performance improve?

The performance improved because:

- The performance improved because the traffic became more distributed and realistic, with each user interacting independently. This helps reduce contention, ensures better load distribution, and simulates real-world behavior more accurately.

Route 2: /my-events

Screenshot BEFORE optimization → SS8

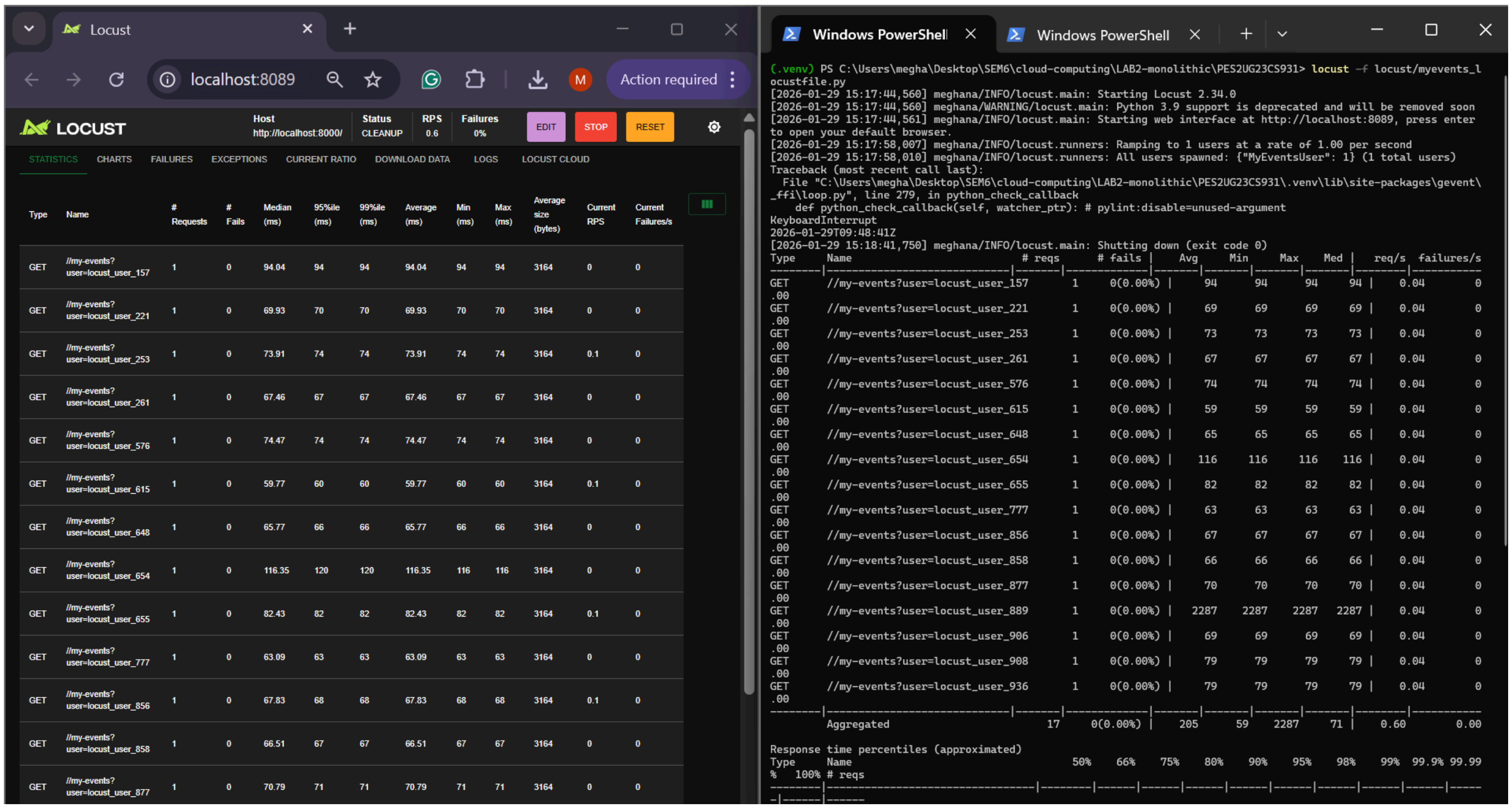


Host	Status	RPS	Failures
http://localhost:8000/	STOPPED	0.6	0%

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	//my-events? user=locust_user	16	0	150	2200	2200	280.05	115	2242	3144	0.6	0
	Aggregated	16	0	150	2200	2200	280.05	115	2242	3144	0.6	0

```
(.venv) PS C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931> locust -f locust/myevents_l
ocustfile.py
[2026-01-29 15:12:37,203] meghana/INFO/locust.main: Starting Locust 2.34.0
[2026-01-29 15:12:37,203] meghana/WARNING/locust.main: Python 3.9 support is deprecated and will be removed soon
[2026-01-29 15:12:37,204] meghana/INFO/locust.main: Starting web interface at http://localhost:8089, press enter
to open your default browser.
[2026-01-29 15:12:50,241] meghana/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-29 15:12:50,243] meghana/INFO/locust.runners: All users spawned: {"MyEventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931\.venv\lib\site-packages\gevent\
_ffi\loop.py", line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument
KeyboardInterrupt
2026-01-29T09:43:30Z
[2026-01-29 15:13:30,195] meghana/INFO/locust.main: Shutting down (exit code 0)
Type     Name                             # reqs      # fails |    Avg     Min     Max     Med |   req/s  failures/s
--------|------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      //my-events?user=locust_user         16     0(0.00%) |    280     115    2242     150 |    0.56        0.00
--------|------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                           16     0(0.00%) |    280     115    2242     150 |    0.56        0.00

Response time percentiles (approximated)
Type     Name                                     50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|--------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      //my-events?user=locust_user             150    150    160    160    190   2200   2200   2200   2200   220
0   2200     16
--------|--------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                               150    150    160    160    190   2200   2200   2200   2200   220
0   2200     16

(.venv) PS C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931> |
```

AFTER optimization → SS9



Host	Status	RPS	Failures
http://localhost:8000/	CLEANUP	0.6	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	//my-events? user=locust_user_157	1	0	94.04	94	94	94.04	94	94	3164	0	0
GET	//my-events? user=locust_user_221	1	0	69.93	70	70	69.93	70	70	3164	0	0
GET	//my-events? user=locust_user_253	1	0	73.91	74	74	73.91	74	74	3164	0.1	0
GET	//my-events? user=locust_user_261	1	0	67.46	67	67	67.46	67	67	3164	0	0
GET	//my-events? user=locust_user_576	1	0	74.47	74	74	74.47	74	74	3164	0	0
GET	//my-events? user=locust_user_615	1	0	59.77	60	60	59.77	60	60	3164	0.1	0
GET	//my-events? user=locust_user_648	1	0	65.77	66	66	65.77	66	66	3164	0	0
GET	//my-events? user=locust_user_654	1	0	116.35	120	120	116.35	116	116	3164	0	0
GET	//my-events? user=locust_user_655	1	0	82.43	82	82	82.43	82	82	3164	0.1	0
GET	//my-events? user=locust_user_777	1	0	63.09	63	63	63.09	63	63	3164	0	0
GET	//my-events? user=locust_user_856	1	0	67.83	68	68	67.83	68	68	3164	0.1	0
GET	//my-events? user=locust_user_858	1	0	66.51	67	67	66.51	67	67	3164	0	0
GET	//my-events? user=locust_user_877	1	0	70.79	71	71	70.79	71	71	3164	0	0

```
(.venv) PS C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931> locust -f locust/myevents_l
ocustfile.py
[2026-01-29 15:17:44,560] meghana/INFO/locust.main: Starting Locust 2.34.0
[2026-01-29 15:17:44,560] meghana/WARNING/locust.main: Python 3.9 support is deprecated and will be removed soon
[2026-01-29 15:17:44,561] meghana/INFO/locust.main: Starting web interface at http://localhost:8089, press enter
to open your default browser.
[2026-01-29 15:17:58,007] meghana/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-29 15:17:58,010] meghana/INFO/locust.runners: All users spawned: {"MyEventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\megha\Desktop\SEM6\cloud-computing\LAB2-monolithic\PES2UG23CS931\.venv\lib\site-packages\gevent\
_ffi\loop.py", line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument
KeyboardInterrupt
2026-01-29T09:48:41Z
[2026-01-29 15:18:41,750] meghana/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                # reqs      # fails |    Avg     Min     Max     Med |   req/s  failures/s
--------|------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      //my-events?user=locust_user_157         1     0(0.00%) |     94      94      94      94 |    0.04           0
.00
GET      //my-events?user=locust_user_221         1     0(0.00%) |     69      69      69      69 |    0.04           0
.00
GET      //my-events?user=locust_user_253         1     0(0.00%) |     73      73      73      73 |    0.04           0
.00
GET      //my-events?user=locust_user_261         1     0(0.00%) |     67      67      67      67 |    0.04           0
.00
GET      //my-events?user=locust_user_576         1     0(0.00%) |     74      74      74      74 |    0.04           0
.00
GET      //my-events?user=locust_user_615         1     0(0.00%) |     59      59      59      59 |    0.04           0
.00
GET      //my-events?user=locust_user_648         1     0(0.00%) |     65      65      65      65 |    0.04           0
.00
GET      //my-events?user=locust_user_654         1     0(0.00%) |    116     116     116     116 |    0.04           0
.00
GET      //my-events?user=locust_user_655         1     0(0.00%) |     82      82      82      82 |    0.04           0
.00
GET      //my-events?user=locust_user_777         1     0(0.00%) |     63      63      63      63 |    0.04           0
.00
GET      //my-events?user=locust_user_856         1     0(0.00%) |     67      67      67      67 |    0.04           0
.00
GET      //my-events?user=locust_user_858         1     0(0.00%) |     66      66      66      66 |    0.04           0
.00
GET      //my-events?user=locust_user_877         1     0(0.00%) |     70      70      70      70 |    0.04           0
.00
GET      //my-events?user=locust_user_889         1     0(0.00%) |   2287    2287    2287    2287 |    0.04           0
.00
GET      //my-events?user=locust_user_906         1     0(0.00%) |     69      69      69      69 |    0.04           0
.00
GET      //my-events?user=locust_user_908         1     0(0.00%) |     79      79      79      79 |    0.04           0
.00
GET      //my-events?user=locust_user_936         1     0(0.00%) |     79      79      79      79 |    0.04           0
.00
--------|------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                              17     0(0.00%) |    205      59    2287      71 |    0.60        0.00

Response time percentiles (approximated)
Type     Name                                     50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|--------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
```

After optimization, as you can see in the SS, the average response time dropped from ~280 ms to ~94 ms, while requests/sec stayed almost the same (~0.6 RPS), meaning the API became slightly faster but could handle the same load

- What was the bottleneck?

the original test was that all users were simulating requests to the my-events route with the same static parameter. This could lead to unrealistic load testing where all users are accessing the same data, multiple users accessing the same set of data

- What change did you make?

introduced a small modification where the `user` parameter is randomized for each simulated user request

● Why did the performance improve?

The performance improved because:

- By generating unique user values for each request, the server now handles traffic from multiple users, each with different data needs.
- This reduces strain on shared resources by spreading the load across various user accounts, simulating real-world behavior and testing the system's performance under diverse conditions.
- Randomizing user parameters helps evenly distribute requests, cutting down on database congestion and caching issues when users request the same data.