CC LAB-2

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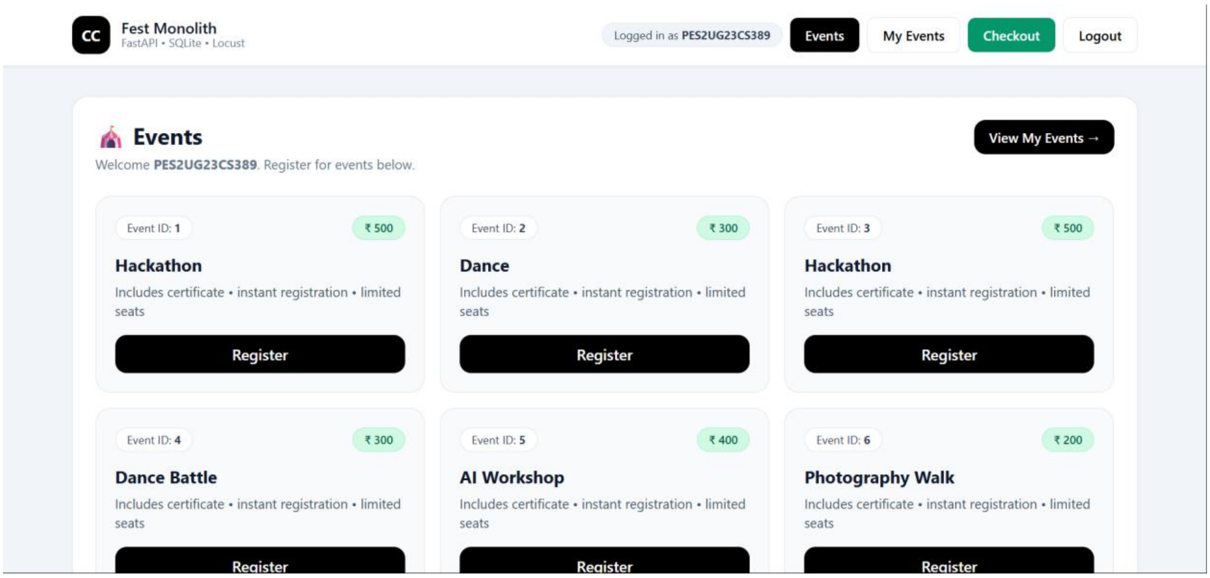
SRN : PES2UG23CS389

Sem 6F

Date : 20-01-2026

ROUTE : /checkout



Events

Welcome **PES2UG23CS389**. 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

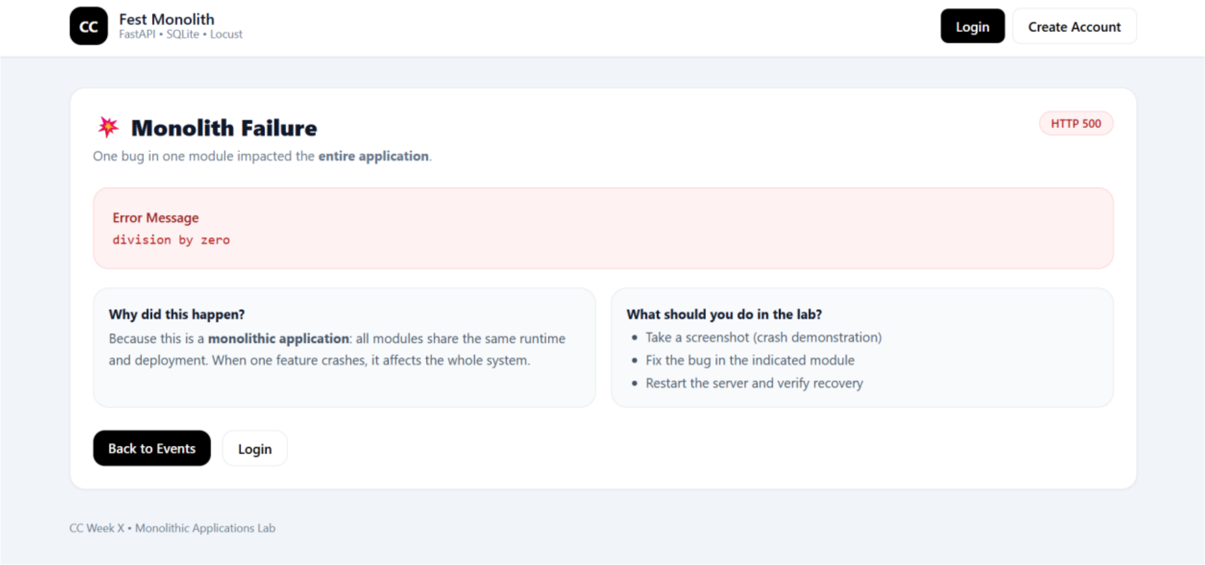
Register

Event ID: 6 · ₹ 200

Photography Walk

Includes certificate • instant registration • limited seats

Register



Monolith Failure

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

Error Message

```
division by zero
```

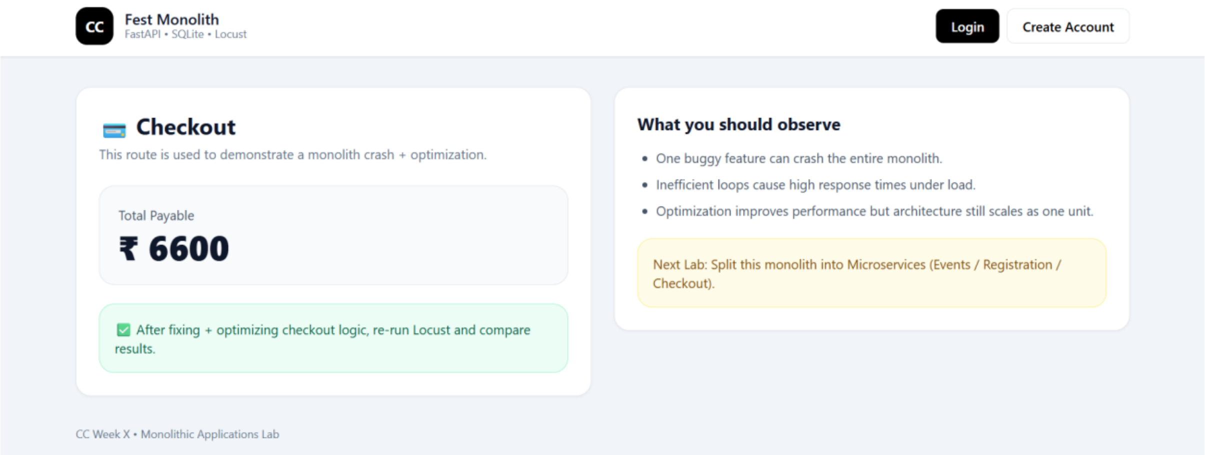
Why did this happen?

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

CC Week X • Monolithic Applications Lab



Checkout

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

Total Payable

₹ 6600

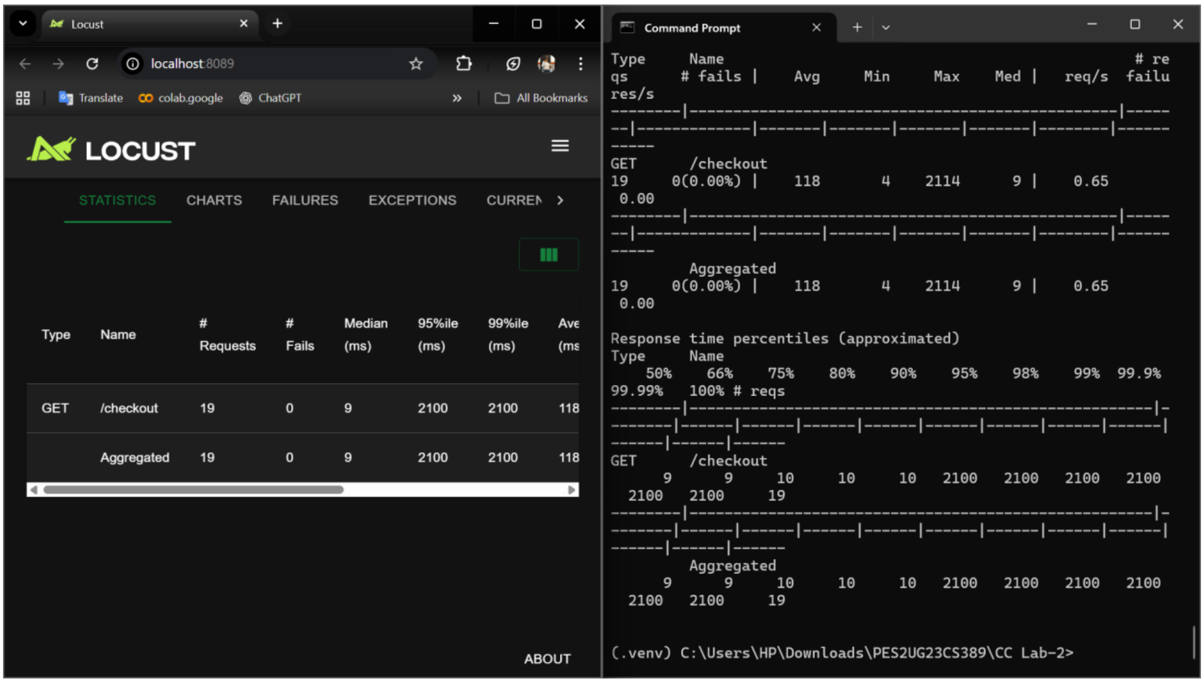
☑ After fixing + optimizing checkout logic, re-run Locust and compare results.

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.

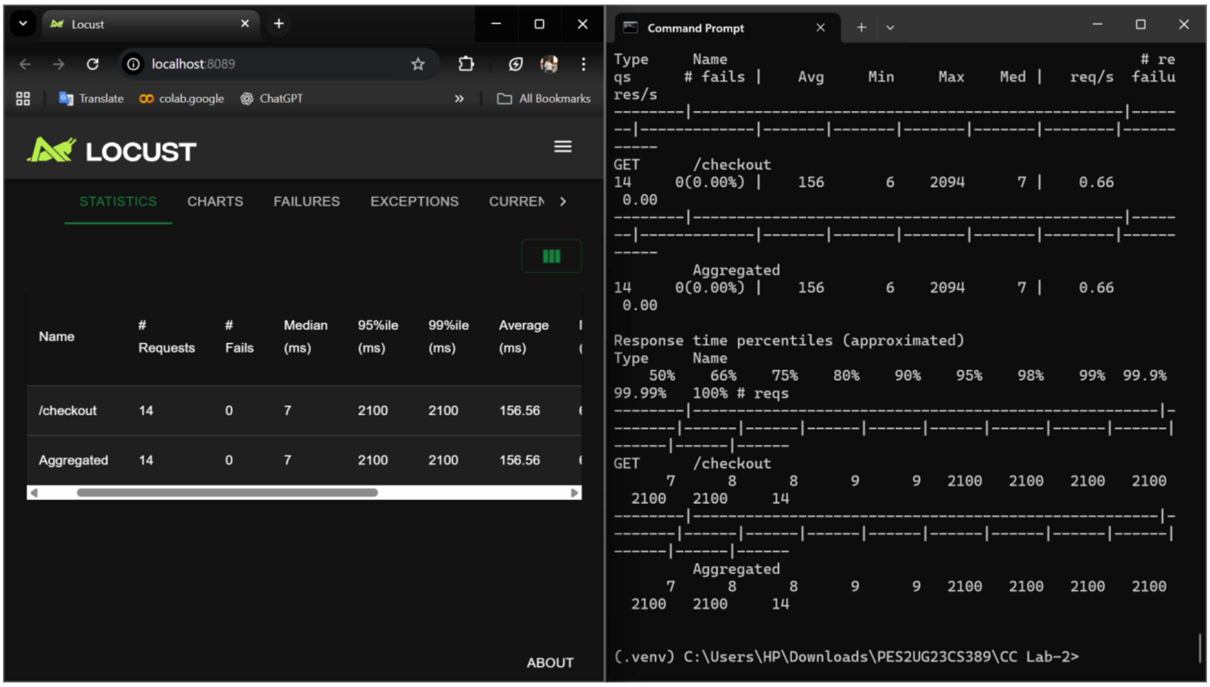
Next Lab: Split this monolith into Microservices (Events / Registration / Checkout).

CC Week X • Monolithic Applications Lab



Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Ave (ms
GET	/checkout	19	0	9	2100	2100	118
	Aggregated	19	0	9	2100	2100	118

```
Type     Name                                                    # re
qs      # fails |    Avg     Min     Max     Med |   req/s  failu
res/s
--------|-----------------------------------------------|-----
--|------------|-------|-------|-------|-------|--------|------
-----
GET      /checkout
19     0(0.00%) |    118       4    2114       9 |    0.65
 0.00
--------|-----------------------------------------------|-----
--|------------|-------|-------|-------|-------|--------|------
-----
         Aggregated
19     0(0.00%) |    118       4    2114       9 |    0.65
 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      9     10     10     10   2100   2100   2100   2100
  2100   2100     19
--------|------------------------------------------------------|-
-------|------|------|------|------|------|------|------|------|
------|------|------
         Aggregated
      9      9     10     10     10   2100   2100   2100   2100
  2100   2100     19


(.venv) C:\Users\HP\Downloads\PES2UG23CS389\CC Lab-2>
```



Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)
/checkout	14	0	7	2100	2100	156.56
Aggregated	14	0	7	2100	2100	156.56

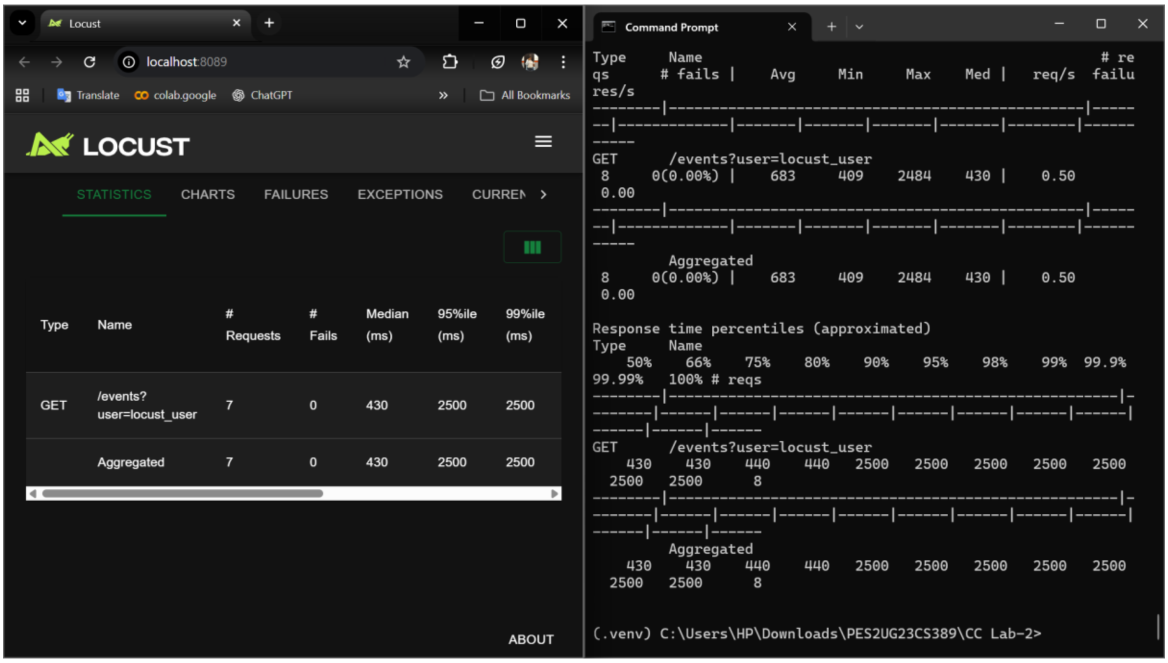
```
Type     Name                                                    # re
qs      # fails |    Avg     Min     Max     Med |   req/s  failu
res/s
--------|-----------------------------------------------|-----
--|------------|-------|-------|-------|-------|--------|------
-----
GET      /checkout
14     0(0.00%) |    156       6    2094       7 |    0.66
 0.00
--------|-----------------------------------------------|-----
--|------------|-------|-------|-------|-------|--------|------
-----
         Aggregated
14     0(0.00%) |    156       6    2094       7 |    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
      7      8      8      9      9   2100   2100   2100   2100
  2100   2100     14
--------|------------------------------------------------------|-
-------|------|------|------|------|------|------|------|------|
------|------|------
         Aggregated
      7      8      8      9      9   2100   2100   2100   2100
  2100   2100     14


(.venv) C:\Users\HP\Downloads\PES2UG23CS389\CC Lab-2>
```

Bottleneck Identified:
The checkout logic used a while loop to increment the total fee one unit at a time. This resulted in unnecessary iterations proportional to the fee value, causing higher CPU usage and increased response time.

Optimization Performed:
The inefficient loop was replaced with a direct summation of event fees using a single loop.

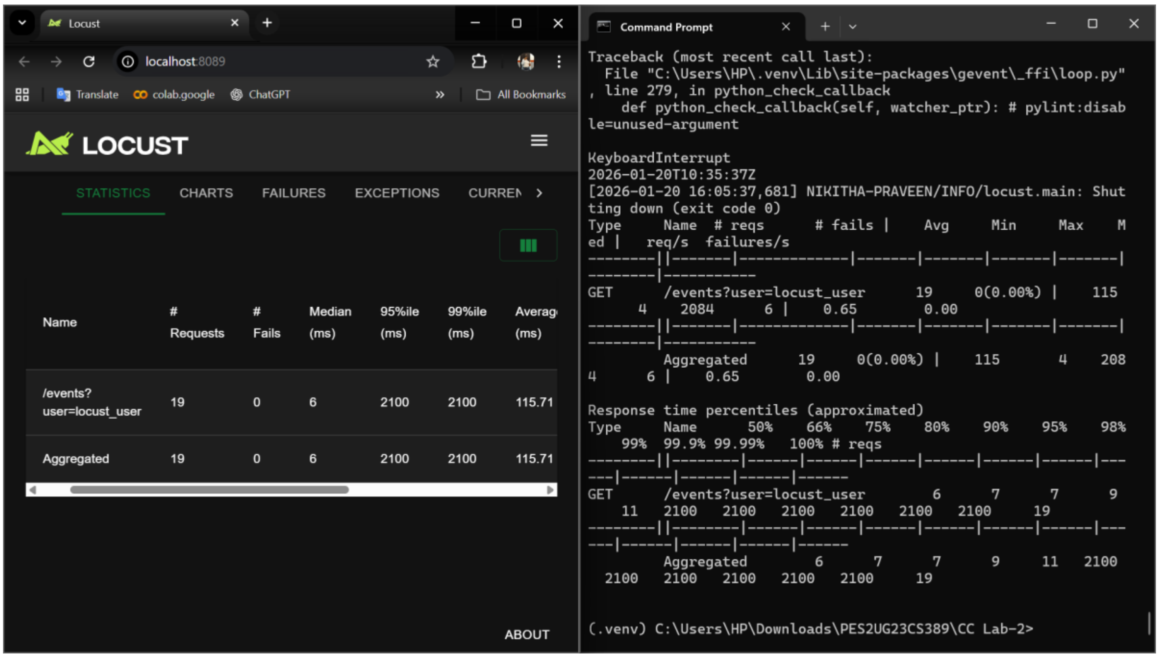
Reason for Performance Improvement:
By eliminating redundant iterations and reducing computational overhead, the checkout route executed faster, leading to a lower average response time during load testing.

ROUTE : /events



Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)
GET	/events?user=locust_user	7	0	430	2500	2500
	Aggregated	7	0	430	2500	2500

```
Type     Name                                                          # re
qs      # fails |    Avg     Min     Max    Med |   req/s  failu
res/s
--------|------------------------------------------|-----
--|-------------|-------|-------|-------|-------|--------|------
-----
GET      /events?user=locust_user
 8     0(0.00%) |    683     409    2484    430 |    0.50
 0.00
--------|------------------------------------------|-----
--|-------------|-------|-------|-------|-------|--------|------
-----
         Aggregated
 8     0(0.00%) |    683     409    2484    430 |    0.50
 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
    430    430    440    440   2500   2500   2500   2500   2500
  2500   2500      8
--------|----------------------------------------------|-
-------|------|------|------|------|------|------|------|------|
------|------|------
         Aggregated
    430    430    440    440   2500   2500   2500   2500   2500
  2500   2500      8


(.venv) C:\Users\HP\Downloads\PES2UG23CS389\CC Lab-2>
```



Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Averag (ms)
/events?user=locust_user	19	0	6	2100	2100	115.71
Aggregated	19	0	6	2100	2100	115.71

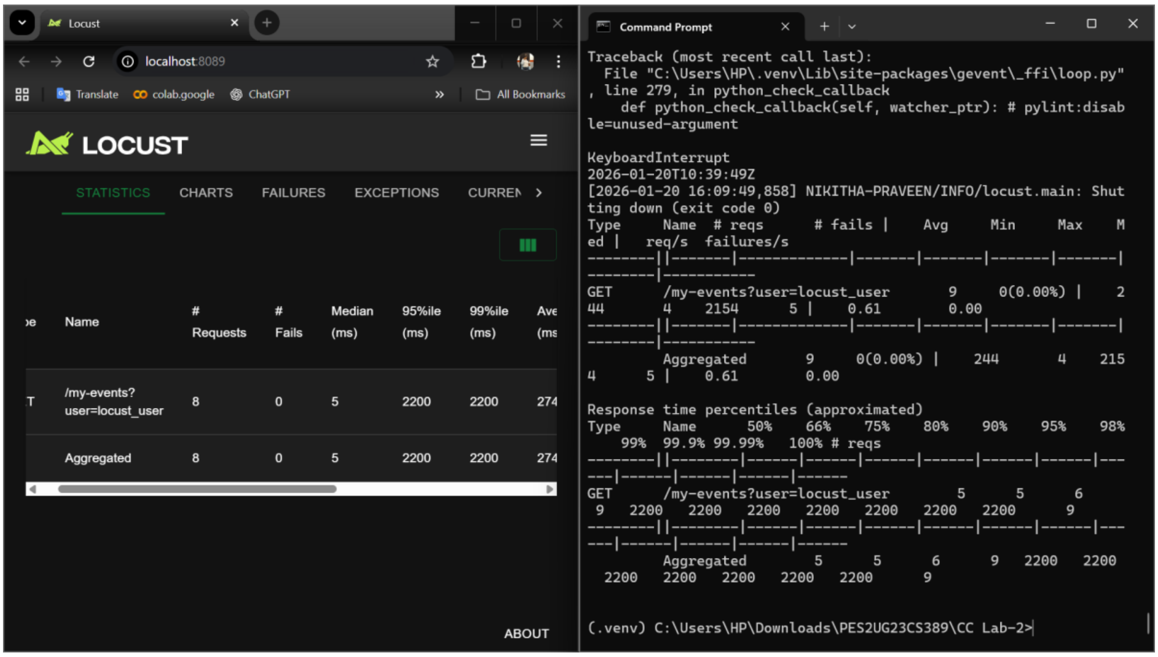
```
Traceback (most recent call last):
  File "C:\Users\HP\.venv\Lib\site-packages\gevent\_ffi\loop.py"
, line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disab
le=unused-argument

KeyboardInterrupt
2026-01-20T10:35:37Z
[2026-01-20 16:05:37,681] NIKITHA-PRAVEEN/INFO/locust.main: Shut
ting down (exit code 0)
Type     Name  # reqs      # fails |    Avg     Min     Max    M
ed |   req/s  failures/s
--------||-------|-------------|-------|-------|-------|-------|
--------|-----------
GET      /events?user=locust_user      19     0(0.00%) |    115
      4    2084      6 |    0.65        0.00
--------||-------|-------------|-------|-------|-------|-------|
--------|-----------
         Aggregated      19     0(0.00%) |    115       4    208
4      6 |    0.65        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       6      7      7      9
    11   2100   2100   2100   2100   2100   2100      19
--------||--------|------|------|------|------|------|------|---
---|------|------|------|------
         Aggregated        6      7      7      9     11   2100
  2100   2100   2100   2100   2100      19


(.venv) C:\Users\HP\Downloads\PES2UG23CS389\CC Lab-2>
```

Bottleneck Identified:
The /events route contained an artificial CPU-intensive loop that performed unnecessary calculations, introducing delay even though it did not contribute to the actual functionality.

Optimization Performed:
The redundant loop was completely removed while keeping the database query and response rendering unchanged.

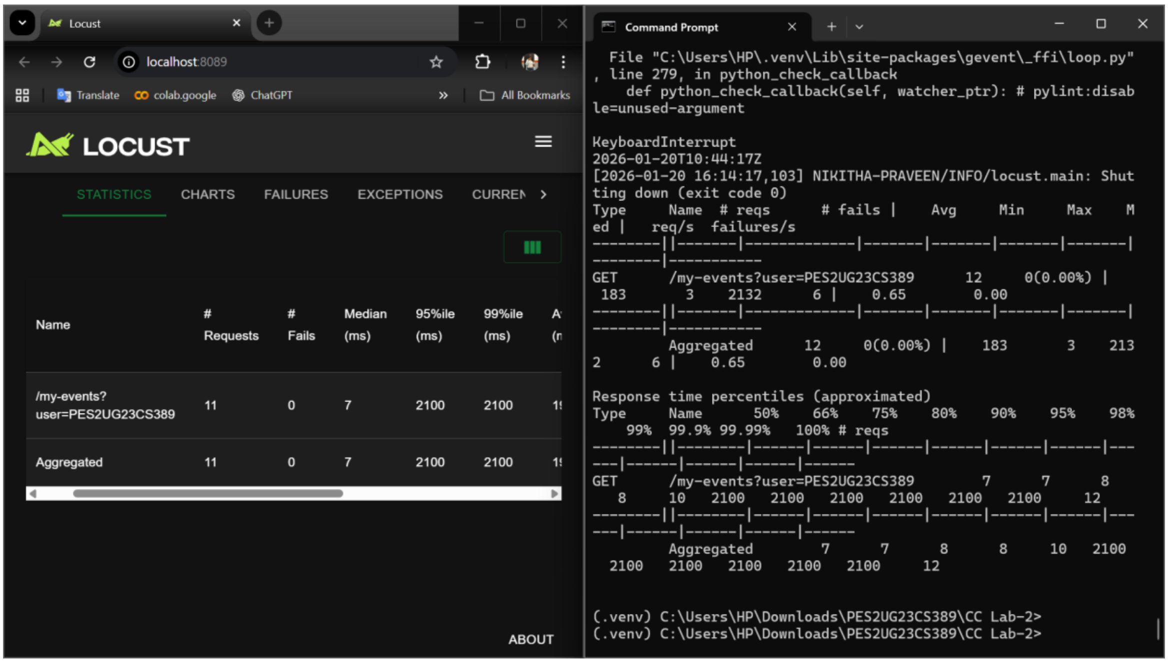
Reason for Performance Improvement:
Removing the unnecessary computations reduced CPU usage, allowing the server to respond more quickly under concurrent requests.

ROUTE : /myevents



pe	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Ave (ms
T	/my-events?user=locust_user	8	0	5	2200	2200	274
	Aggregated	8	0	5	2200	2200	274

```
Traceback (most recent call last):
  File "C:\Users\HP\.venv\Lib\site-packages\gevent\_ffi\loop.py"
, line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disab
le=unused-argument

KeyboardInterrupt
2026-01-20T10:39:49Z
[2026-01-20 16:09:49,858] NIKITHA-PRAVEEN/INFO/locust.main: Shut
ting down (exit code 0)
Type     Name  # reqs      # fails |    Avg     Min     Max    M
ed |   req/s  failures/s
--------||-------|-------------|-------|-------|-------|-------|
--------|-----------
GET      /my-events?user=locust_user       9     0(0.00%) |    2
44       4    2154      5 |    0.61        0.00
--------||-------|-------------|-------|-------|-------|-------|
--------|-----------
         Aggregated       9     0(0.00%) |    244       4    215
4      5 |    0.61        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       5      5      6
 9   2200   2200   2200   2200   2200   2200   2200      9
--------||--------|------|------|------|------|------|------|---
---|------|------|------|------
         Aggregated        5      5      6      9   2200   2200
  2200   2200   2200   2200   2200      9


(.venv) C:\Users\HP\Downloads\PES2UG23CS389\CC Lab-2>
```



Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	A (n
/my-events?user=PES2UG23CS389	11	0	7	2100	2100	1!
Aggregated	11	0	7	2100	2100	1!

```
  File "C:\Users\HP\.venv\Lib\site-packages\gevent\_ffi\loop.py"
, line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disab
le=unused-argument

KeyboardInterrupt
2026-01-20T10:44:17Z
[2026-01-20 16:14:17,103] NIKITHA-PRAVEEN/INFO/locust.main: Shut
ting down (exit code 0)
Type     Name  # reqs      # fails |    Avg     Min     Max    M
ed |   req/s  failures/s
--------||-------|-------------|-------|-------|-------|-------|
--------|-----------
GET      /my-events?user=PES2UG23CS389      12     0(0.00%) |
 183       3    2132      6 |    0.65        0.00
--------||-------|-------------|-------|-------|-------|-------|
--------|-----------
         Aggregated      12     0(0.00%) |    183       3    213
2      6 |    0.65        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=PES2UG23CS389       7      7      8
   8     10   2100   2100   2100   2100   2100   2100     12
--------||--------|------|------|------|------|------|------|---
---|------|------|------|------
         Aggregated        7      7      8      8     10   2100
  2100   2100   2100   2100   2100     12


(.venv) C:\Users\HP\Downloads\PES2UG23CS389\CC Lab-2>
(.venv) C:\Users\HP\Downloads\PES2UG23CS389\CC Lab-2>
```

Bottleneck Identified:
The /my-events route included an artificial delay loop that caused additional processing time without affecting the output, resulting in slower response times during load testing.

Optimization Performed:
The artificial delay was removed, and the route was streamlined to execute only the required database query and template rendering.

Reason for Performance Improvement:
Eliminating redundant processing reduced execution time and improved overall responsiveness under load.

GITHUB REPO LINK :

https://github.com/PES2UG23CS389/CC-LAB-2