

CC LAB – 2

Name	Dhanya Prabhu
SRN	PES2UG23CS169
Section	C
Date	13/01/2026

PART 1: Setup & Run

```
PS C:\Dhanya\PESENGINEERING\sem6\CC\CC Lab> mkdir PES2UG23CS169

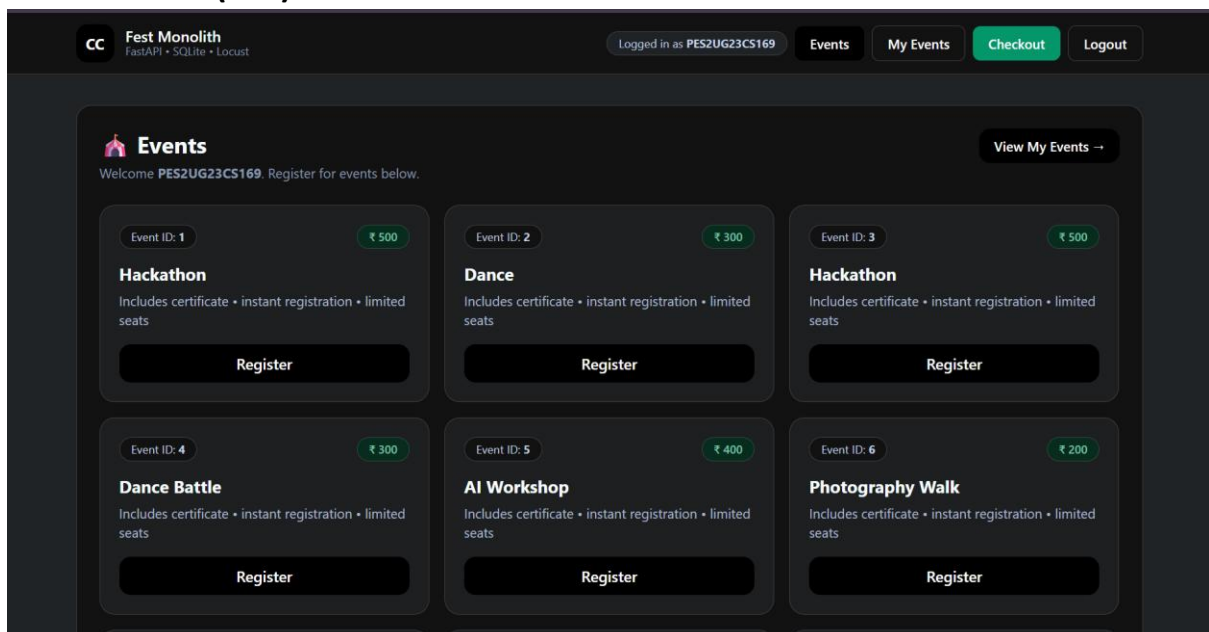
Directory: C:\Dhanya\PESENGINEERING\sem6\CC\CC Lab

Mode                LastWriteTime         Length Name
----                -
d-----          20-01-2026   02:11 PM             PES2UG23CS169

PS C:\Dhanya\PESENGINEERING\sem6\CC\CC Lab> python -m venv .venv
PS C:\Dhanya\PESENGINEERING\sem6\CC\CC Lab> .\.venv\Scripts\activate
(.venv) PS C:\Dhanya\PESENGINEERING\sem6\CC\CC Lab\PES2UG23CS169\CC Lab-2> python .\insert_events.py
[✓] Events inserted successfully!
```

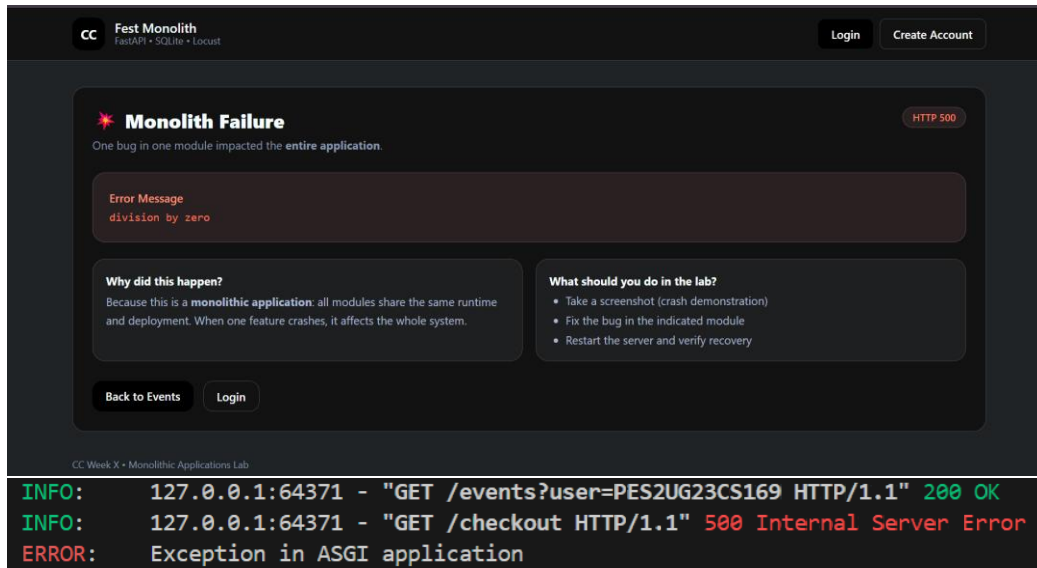
PART 2: Use the Application

Screenshot 1 (SS1):



PART 3: Observe Monolithic Failure (Crash)

Screenshot 2 (SS2):



Monolith Failure HTTP 500

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

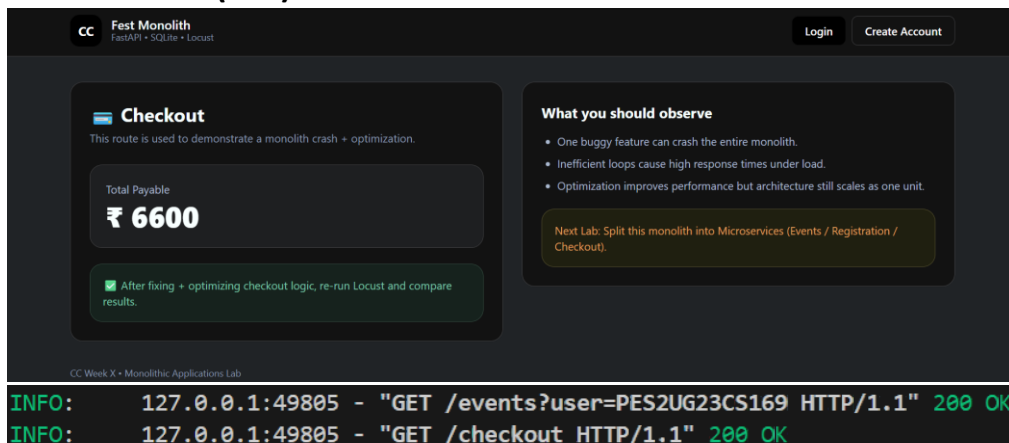
[Back to Events](#) [Login](#)

CC Week X • Monolithic Applications Lab

```
INFO: 127.0.0.1:64371 - "GET /events?user=PES2UG23CS169 HTTP/1.1" 200 OK
INFO: 127.0.0.1:64371 - "GET /checkout HTTP/1.1" 500 Internal Server Error
ERROR: Exception in ASGI application
```

PART 4: Fix the Bug

Screenshot 3 (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.

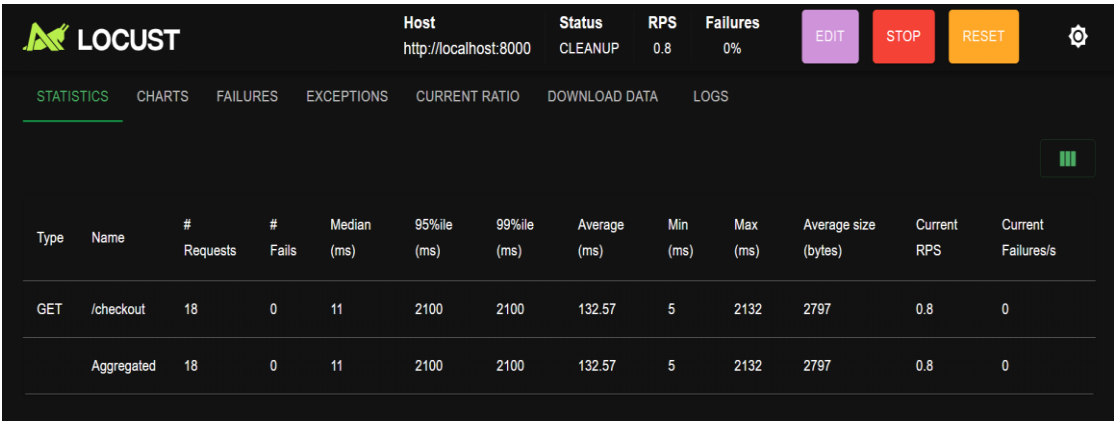
Next Lab: Split this monolith into Microservices (Events / Registration / Checkout).

CC Week X • Monolithic Applications Lab

```
INFO: 127.0.0.1:49805 - "GET /events?user=PES2UG23CS169 HTTP/1.1" 200 OK
INFO: 127.0.0.1:49805 - "GET /checkout HTTP/1.1" 200 OK
```

PART 5: Load Testing using Locust

Screenshot 4 (SS4):



```
PS C:\Dhanya\PESENGINEERING\sem6\CC\CC Lab\PES2UG23CS169\CC Lab-2> python -m locust -f locust\checkout_locustfile.py
[2026-01-20 14:33:44,384] DhanyaPrabhu/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 14:33:44,386] DhanyaPrabhu/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-20 14:35:45,273] DhanyaPrabhu/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 14:35:45,275] DhanyaPrabhu/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\dhany\AppData\Roaming\Python\Python313\site-packages\gevent\ffi\loop.py", line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument

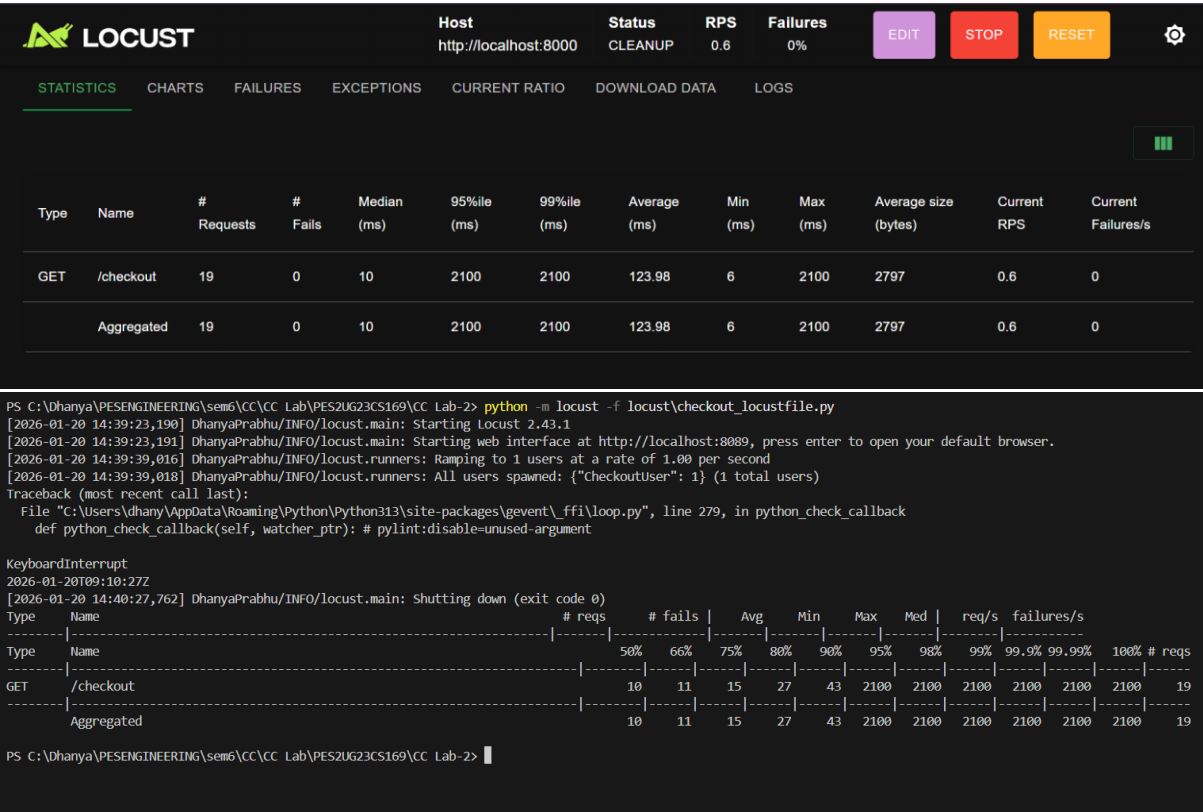
KeyboardInterrupt
2026-01-20T09:06:50Z
[2026-01-20 14:36:50,118] DhanyaPrabhu/INFO/locust.main: Shutting down (exit code 0)
Type      Name      # reqs  # fails  Avg  Min  Max  Med  req/s  failures/s
-----
GET  /checkout  18      0(0.00%)  132  4    2132  11  0.62  0.00
-----
Aggregated  18      0(0.00%)  132  4    2132  11  0.62  0.00

Response time percentiles (approximated)
Type      Name      50%    66%    75%    80%    90%    95%    98%    99%    99.9%  99.99%  100%  # reqs
-----
GET  /checkout  11     12     14     15     82    2100  2100  2100  2100  2100  2100  18
-----
Aggregated  11     12     14     15     82    2100  2100  2100  2100  2100  2100  18

PS C:\Dhanya\PESENGINEERING\sem6\CC\CC Lab\PES2UG23CS169\CC Lab-2> █
```


PART 6: Optimize the Checkout Route

Screenshot 5 (SS5):



PART 7: Optimise events and my_events(DIY)

Screenshot 6 (SS6):

**LOCUST**

Host
http://localhost:8000

Status
CLEANUP


RPS
0.4

Failures
0%

EDIT

STOP

RESET



STATISTICSCHARTSFAILURES EXCEPTIONSCURRENT RATIODOWNLOAD DATALOGS


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	14	0	460	2600	2600	604.12	358	2631	21138	0.4	0
Aggregated		14	0	460	2600	2600	604.12	358	2631	21138	0.4	0

```
PS C:\Dhanya\PESENGINEERING\sem6\CC\CC Lab\PES2UG23CS169\CC Lab-2> python -m locust -f locust/events_locustfile.py
[2026-01-20 14:45:23,810] DhanyaPrabhu/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 14:45:23,812] DhanyaPrabhu/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-20 14:46:56,841] DhanyaPrabhu/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 14:46:56,844] DhanyaPrabhu/INFO/locust.runners: All users spawned: {"EventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\dhany\AppData\Roaming\Python\Python313\site-packages\gevent\_ffi\loop.py", line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument

KeyboardInterrupt
2026-01-20T09:17:53Z
[2026-01-20 14:47:53,449] DhanyaPrabhu/INFO/locust.main: Shutting down (exit code 0)
Type      Name      # reqs  # fails | Avg  Min  Max  Med | req/s  failures/s
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  470    520    520    530    550    2600  2600  2600  2600  2600  2600  14
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----
Aggregated  470    520    520    530    550    2600  2600  2600  2600  2600  2600  14

PS C:\Dhanya\PESENGINEERING\sem6\CC\CC Lab\PES2UG23CS169\CC Lab-2> 
```

Screenshot 7 (SS7):

**LOCUST**

Host
http://localhost:8000

Status
CLEANUP


RPS
0.6

Failures
0%

EDIT

STOP

RESET



STATISTICSCHARTSFAILURES EXCEPTIONSCURRENT RATIODOWNLOAD DATALOGS


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	18	0	10	2100	2100	134.08	9	2147	21138	0.6	0
Aggregated		18	0	10	2100	2100	134.08	9	2147	21138	0.6	0

```
PS C:\Dhanya\PESENGINEERING\sem6\CC\CC Lab\PES2UG23CS169\CC Lab-2> python -m locust -f locust/events_locustfile.py
[2026-01-20 14:51:43,159] DhanyaPrabhu/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 14:51:43,160] DhanyaPrabhu/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-20 14:52:07,505] DhanyaPrabhu/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 14:52:07,507] DhanyaPrabhu/INFO/locust.runners: All users spawned: {"EventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\dhany\AppData\Roaming\Python\Python313\site-packages\gevent\_ffi\loop.py", line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument

KeyboardInterrupt
2026-01-20T09:22:58Z
[2026-01-20 14:52:58,399] DhanyaPrabhu/INFO/locust.main: Shutting down (exit code 0)
Type      Name      # reqs  # fails | Avg  Min  Max  Med | req/s  failures/s
% 100% # reqs
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----
GET      /events?user=locust_user  18      0(0.00%) | 134    8  2146  10 | 0.63    0.00
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----
GET      /events?user=locust_user  10      12      16    23    71  2100  2100  2100  2100  2100  2100  18
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----
Aggregated  10      12      16    23    71  2100  2100  2100  2100  2100  2100  18


```

Screenshot 8 (SS8):

**LOCUST**

Host
http://localhost:8000

Status
CLEANUP


RPS
0.6

Failures
0%

EDIT

STOP

RESET



STATISTICS

CHARTS


FAILURES

EXCEPTIONS

CURRENT RATIO

DOWNLOAD DATA

LOGS



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	17	0	170	2200	2200	292.11	126	2235	3144	0.6	0
Aggregated		17	0	170	2200	2200	292.11	126	2235	3144	0.6	0


```
PS C:\Dhanya\PESENGINEERING\sem6\CC\Lab\PES2UG23CS169\CC Lab-2> python -m locust -f locust/myevents_locustfile.py
[2026-01-20 14:56:08,319] DhanyaPrabhu/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 14:56:08,322] DhanyaPrabhu/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-20 14:56:22,373] DhanyaPrabhu/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 14:56:22,375] DhanyaPrabhu/INFO/locust.runners: All users spawned: {"MyEventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\dhany\AppData\Roaming\Python\Python313\site-packages\gevent\ffi\loop.py", line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument

KeyboardInterrupt
2026-01-20T09:27:06Z
[2026-01-20 14:57:06,712] DhanyaPrabhu/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      17      0(0.00%) | 292  126 2235  170 |    0.59      0.00
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
Aggregated      17      0(0.00%) | 292  126 2235  170 |    0.59      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      170    190    190    240    260    2200    2200    2200    2200    2200    2200    17
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
Aggregated      170    190    190    240    260    2200    2200    2200    2200    2200    2200    17
```

PS C:\Dhanya\PESENGINEERING\sem6\CC\Lab\PES2UG23CS169\CC Lab-2>

Screenshot 9 (SS9):

**LOCUST**

Host
http://localhost:8000

Status
CLEANUP


RPS
0.7

Failures
0%

EDIT

STOP

RESET



STATISTICS

CHARTS


FAILURES

EXCEPTIONS

CURRENT RATIO

DOWNLOAD DATA

LOGS



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	19	0	9	2100	2100	123.67	8	2105	3144	0.7	0
Aggregated		19	0	9	2100	2100	123.67	8	2105	3144	0.7	0

```
PS C:\Dhanya\PESENGINEERING\sem6\CC\Lab\PES2UG23CS169\CC Lab-2> python -m locust -f locust/myevents_locustfile.py
[2026-01-20 14:58:09,590] DhanyaPrabhu/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 14:58:09,591] DhanyaPrabhu/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-20 14:58:27,150] DhanyaPrabhu/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 14:58:27,151] DhanyaPrabhu/INFO/locust.runners: All users spawned: {"MyEventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\dhany\AppData\Roaming\Python\Python313\site-packages\gevent\ffi\loop.py", line 279, in python_check_callback
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument

KeyboardInterrupt
2026-01-20T09:29:17Z
[2026-01-20 14:59:17,701] DhanyaPrabhu/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      19      0(0.00%) | 123   8 2104   9 |    0.65      0.00
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
Aggregated      19      0(0.00%) | 123   8 2104   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      /my-events?user=locust_user       9    11    14    19    57    2100    2100    2100    2100    2100    2100    19
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
Aggregated       9    11    14    19    57    2100    2100    2100    2100    2100    2100    19
```

PS C:\Dhanya\PESENGINEERING\sem6\CC\Lab\PES2UG23CS169\CC Lab-2>

Explanations:

Routes: /events

1. What was the bottleneck?

The /events endpoint had an unnecessary heavy CPU loop running on every request, which increased the response time.

2. What change did you make?

I commented the unnecessary loop so the endpoint only performs the required logic.

3. Why did the performance improve?

Because the server stopped doing extra computations for every request, the response time reduced and the endpoint handled requests faster.

Routes: /my-events

1. What was the bottleneck?

The /my-events endpoint had an unnecessary heavy CPU loop running on every request, which caused delay and increased processing time.

2. What change did you make?

I commented the unnecessary dummy loop to reduce the extra workload during each API call.

3. Why did the performance improve?

Since the endpoint no longer wastes time in redundant operations, it responds quicker and overall performance improves under load.