

SS1

The screenshot shows a web browser at `localhost:8000/events?user=PES2UG23CS485`. The application header includes the 'Fest Monolith' logo, 'FastAPI • SQLite • Locust', and a user login status 'Logged in as PES2UG23CS485'. Navigation buttons for 'Events', 'My Events', 'Checkout', and 'Logout' are present. The main content area is titled 'Events' and welcomes the user. It displays a grid of six event cards, each with an event ID, title, description, price, and a 'Register' button. The events are: 1. Hackathon (₹ 500), 2. Dance (₹ 300), 3. Hackathon (₹ 500), 4. Dance Battle (₹ 300), 5. AI Workshop (₹ 400), and 6. Photography Walk (₹ 200). A 'View My Events' button is located in the top right corner of the events section.

Event ID	Event Title	Description	Price
Event ID: 1	Hackathon	Includes certificate • instant registration • limited seats	₹ 500
Event ID: 2	Dance	Includes certificate • instant registration • limited seats	₹ 300
Event ID: 3	Hackathon	Includes certificate • instant registration • limited seats	₹ 500
Event ID: 4	Dance Battle	Includes certificate • instant registration • limited seats	₹ 300
Event ID: 5	AI Workshop	Includes certificate • instant registration • limited seats	₹ 400
Event ID: 6	Photography Walk	Includes certificate • instant registration • limited seats	₹ 200

SS2

The screenshot shows a web browser at `localhost:8000/register_event/404?user=PES2UG23CS485`. The application header is identical to the previous screenshot. The main content area is titled 'Monolith Failure' with a red star icon and an 'HTTP 500' status indicator. It informs the user that a bug in one module impacted the entire application. An 'Error Message' box displays 'division by zero'. Two sections provide context and actions: 'Why did this happen?' explains that this is a monolithic application where a crash in one module affects the whole system; 'What should you do in the lab?' lists steps: take a screenshot, fix the bug, and restart the server. At the bottom, there are 'Back to Events' and 'Login' buttons. The footer text reads 'CC Week X • Monolithic Applications Lab'.

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

SS3

localhost:8000/checkout

Summarize

Chat

CC

Fest Monolith

FastAPI • SQLite • Locust

Login

Create Account

CC

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).

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ss4

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	18	0	5	2100	2100	120.07	5	2060	2797	0.7	0
Aggregated		18	0	5	2100	2100	120.07	5	2060	2797	0.7	0

File Edit Selection View Go Run ...

SEM6

powerShell - CC Lab-2

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
(.venv) PS C:\Users\rithv\SEM6\CC\PES2UG23CS485\CC Lab-2> locust -f locust/checkout_locustfile.py

File "C:\Users\rithv\SEM6\CC\PES2UG23CS485\CC Lab-2\.venv\Lib\site-packages\locust\runners.py", line 226, in spawn
File "C:\Users\rithv\SEM6\CC\PES2UG23CS485\CC Lab-2\.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
2026-01-20T09:15:43Z
[2026-01-20 14:45:43,051] Rithvik_Yoga/INFO/locust.main: Shutting down (exit code 0)
Type      Name      # reqs    # fails    Avg    Min    Max    Med    req/s  failures/s
-----
GET      /checkout      18         0         120     4    2059     5     0.62     0.00
Aggregated                18         0         120     4    2059     5     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         6         6         7         8        10       100       100       100       100       100       18
Aggregated                6         6         7         8        10       100       100       100       100       100       18
```

Ss5

localhost:8089

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	7	0	7	2000	2000	296.84	5	2031	2797	0.56	0
Aggregated		7	0	7	2000	2000	296.84	5	2031	2797	0.56	0

ABOUT

```
(.venv) PS C:\Users\rithv\SEM6\CC\PES2UG23CS485\CC Lab-2> locust -f locust/checkout_locustfile.py
(.venv) PS C:\Users\rithv\SEM6\CC\PES2UG23CS485\CC Lab-2> locust -f locust/checkout_locustfile.py
[2026-01-20 14:51:54,126] Rithvik_Yoga/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 14:51:54,127] Rithvik_Yoga/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-20 14:52:28,097] Rithvik_Yoga/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 14:52:28,100] Rithvik_Yoga/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\rithv\SEM6\CC\PES2UG23CS485\CC Lab-2\.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
2026-01-20T09:23:49Z
[2026-01-20 14:53:49,126] Rithvik_Yoga/INFO/locust.main: Shutting down (exit code 0)

Response time percentiles (approximated)
Type      Name      50%      66%      75%      80%      90%      95%      98%      99%      99.9%  99.99%  100% # reqs
-----
GET      /checkout      6         6         7         7        14      2000     2000     2000     2000     2000     2000    19
-----
Aggregated      6         6         7         7        14      2000     2000     2000     2000     2000     2000    19
-----

(.venv) PS C:\Users\rithv\SEM6\CC\PES2UG23CS485\CC Lab-2> 
```

Ss6

localhost:8089

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	13	0	210	2300	2300	371.68	193	2271	21138	0.5	0
Aggregated		13	0	210	2300	2300	371.68	193	2271	21138	0.5	0

ABOUT

```
File "C:\Users\rithv\SEM6\CC\PES2UG23CS485\CC Lab-2\.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
2026-01-20T09:26:27Z
[2026-01-20 14:56:27,791] Rithvik_Yoga/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      15      0(0.00%)      353      190      2270      210      0.57      0.00
-----
Aggregated      15      0(0.00%)      353      190      2270      210      0.57      0.00
-----

Response time percentiles (approximated)
Type      Name      %      100% # reqs      50%      66%      75%      80%      90%      95%      98%      99%      99.9%  99.99
-----
GET      /events?user=locust_user      0      2300      15      210      230      230      240      280      2300      2300      2300      2300      2300
-----
Aggregated      0      2300      15      210      230      230      240      280      2300      2300      2300      2300      2300
-----

Ln 12, Col 14  Spaces: 4  UTF-8  LF  {} Python
```

ss7

localhost:8089

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	6	0	7	2000	2000	347.5	6	2045	21138	0.5	0
Aggregated		6	0	7	2000	2000	347.5	6	2045	21138	0.5	0

ABOUT

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS powershell - CC Lab-2

```
(.venv) PS C:\Users\rithv\SEM6\CC\PES2UG23CS485\CC Lab-2> locust -f locust/events_locustfile.py
[2026-01-20 15:10:20,531] Rithvik_Yoga/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-20 15:10:54,916] Rithvik_Yoga/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
KeyboardInterrupt
2026-01-20T09:41:06Z
[2026-01-20 15:11:06,296] Rithvik_Yoga/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 7 0(0.00%) 299 6 2044 10 0.63 0.00
Aggregated 7 0(0.00%) 299 6 2044 10 0.63 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 10 10 10 10 2000 2000 2000 2000 2000 2000 2000 7
Aggregated 10 10 10 10 2000 2000 2000 2000 2000 2000 2000 7

(.venv) PS C:\Users\rithv\SEM6\CC\PES2UG23CS485\CC Lab-2>
```

Ss8

localhost:8089

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	6	0	86	2100	2100	430.1	78	2145	3144	0.57	0
Aggregated		6	0	86	2100	2100	430.1	78	2145	3144	0.57	0

ABOUT

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS powershell - CC Lab-2

```
File "C:\Users\rithv\SEM6\CC\PES2UG23CS485\CC Lab-2\.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
2026-01-20T09:42:37Z
[2026-01-20 15:12:37,189] Rithvik_Yoga/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 6 0(0.00%) 430 78 2144 86 0.61 0.00
Aggregated 6 0(0.00%) 430 78 2144 86 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 94 94 95 95 2100 2100 2100 2100 2100 2100
0 2100 6
Aggregated 94 94 95 95 2100 2100 2100 2100 2100 2100
0 2100 6
```

Ss9

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	5	0	11	2100	2100	421.77	7	2071	3144	0.43	0
Aggregated		5	0	11	2100	2100	421.77	7	2071	3144	0.43	0

Type	Name	# reqs	# fails	Avg	Min	Max	Med	req/s	failures/s
GET	/my-events?user=locust_user	12	0(0.00%)	180	4	2070	6	0.62	0.00
Aggregated		12	0(0.00%)	180	4	2070	6	0.62	0.00

Type	Name	50%	66%	75%	80%	90%	95%	98%	99%	99.9%	99.99%	100%	# reqs
GET	/my-events?user=locust_user	7	9	11	11	19	2100	2100	2100	2100	2100	2100	12
Aggregated		7	9	11	11	19	2100	2100	2100	2100	2100	2100	12

Route: /events

Bottleneck:

A CPU-intensive loop (`for i in range(3000000)`) was executed on every request, even though its result was not used. This caused unnecessary blocking of the FastAPI server.

Change Made:

Removed the unnecessary loop from the route.

Why Performance Improved:

Eliminating the loop reduced CPU usage and request processing time, allowing the server to respond immediately without blocking other requests.

Route: /my-events

Bottleneck:

A dummy loop (`for _ in range(1500000)`) performed meaningless computations, increasing response time for each request.

Change Made:

Removed the redundant loop from the route.

Why Performance Improved:

Removing the loop prevented wasteful CPU consumption, significantly reducing latency and improving scalability under multiple users.

Github repo -> <https://github.com/rtk5/PES2UG23CS485-CC-LAB-2>

The screenshot shows the GitHub repository page for `PES2UG23CS485-CC-LAB-2` by user `rtk5`. The repository is public and has 1 branch and 0 tags. The file list shows the following files and folders:

File/Folder	Owner	Size	Commit
__pycache__	PES2UG23CS485	now	
checkout	PES2UG23CS485	now	
locust	PES2UG23CS485	now	
templates	PES2UG23CS485	now	
database.py	PES2UG23CS485	now	
fest.db	PES2UG23CS485	now	
insert_events.py	PES2UG23CS485	now	
main.py	PES2UG23CS485	now	
requirements.txt	PES2UG23CS485	now	

The right sidebar shows the repository's activity, including 0 stars, 0 watching, and 0 forks. The Releases and Packages sections indicate no releases or packages published.