

CLOUD COMPUTING

LAB-2

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SECTION: D

SS1:

The screenshot shows a web application interface for 'Fest Monolith' with the URL 'localhost:8000/events?user=PES2UG23CS260'. The top navigation bar includes links for 'Events', 'My Events', 'Checkout', and 'Logout'. The main content area is titled 'Events' and displays nine event cards arranged in a 3x3 grid. Each card contains details about an event, its price, and a 'Register' button.

Event ID	Event Name	Price
1	Hackathon	₹ 500
2	Dance	₹ 300
3	Hackathon	₹ 500
4	Dance Battle	₹ 300
5	AI Workshop	₹ 400
6	Photography Walk	₹ 200
7	Gaming Tournament	₹ 350
8	Music Night	₹ 250
9	Treasure Hunt	₹ 150

SS2:

The screenshot shows a web browser window for the URL localhost:8000/register_event/404?user=PES2UG23CS260. The page title is "Fest Monolith" with the subtitle "FastAPI • SQLite • Locust". The top navigation bar includes links for "Events", "My Events", "Checkout", and "Logout". A message at the top right indicates "HTTP 500". The main content area features a heading "Monolith Failure" with a star icon. Below it, a message states "One bug in one module impacted the entire application." A red-bordered box contains the "Error Message": "division by zero". To the left, a box titled "Why did this happen?" explains that because it's a monolithic application, all modules share the same runtime and deployment, so a bug in one module affects the whole system. To the right, a box titled "What should you do in the lab?" lists three steps: taking a screenshot, fixing the bug, and restarting the server. At the bottom are "Back to Events" and "Login" buttons.

```
INFO:    127.0.0.1:53355 - "GET /events?user=PES2UG23CS260 HTTP/1.1" 200 OK
INFO:    127.0.0.1:53355 - "GET /checkout HTTP/1.1" 500 Internal Server Error
ERROR:   Exception in ASGI application
Traceback (most recent call last):
```

SS3:

The screenshot shows a web browser window for the URL localhost:8000/checkout. The top navigation bar includes links for "Login" and "Create Account". The main content area features a heading "Checkout" with a credit card icon. A note below says "This route is used to demonstrate a monolith crash + optimization." A box displays "Total Payable" as ₹ 6600. A green box at the bottom contains the tip: "After fixing + optimizing checkout logic, re-run Locust and compare results." To the right, a box titled "What you should observe" lists three points: one buggy feature crashing the monolith, inefficient loops causing high response times under load, and optimization improving performance while maintaining unit scaling. A yellow box at the bottom right suggests the next lab: "Next Lab: Split this monolith into Microservices (Events / Registration / Checkout)."

```
INFO: 127.0.0.1:61771 - "GET /events?user=PES2UG23CS260 HTTP/1.1" 200 OK  
INFO: 127.0.0.1:61771 - "GET /checkout HTTP/1.1" 200 OK
```

SS4:

The screenshot shows the Locust web interface with the following details:

- Host:** http://localhost:8000
- Status:** STOPPED (0.6 Failures)
- Buttons:** NEW, RESET, Settings gear icon
- Section Headers:** STATISTICS, CHARTS, FAILURES, EXCEPTIONS, CURRENT RATIO, DOWNLOAD DATA, LOGS
- Table Headers (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):**
- Data Rows:**
 - GET /checkout: 19 requests, 0 fails, median 2100 ms, 95%ile 2100 ms, average 111.72 ms, min 3 ms, max 2958 ms, average size 2797 bytes, current RPS 0.6, current failures/s 0.
 - Aggregated row: 19 requests, 0 fails, median 2100 ms, 95%ile 2100 ms, average 111.72 ms, min 3 ms, max 2958 ms, average size 2797 bytes, current RPS 0.6, current failures/s 0.
- Logs:** A code editor window showing Python code for a database connection and event selection.
- Integration:** PowerShell and terminal windows are integrated into the interface.

LOCUST							Host http://localhost:8000	Status STOPPED	RPS 0.6	Failures 0%	NEW	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	/checkout	19	0	3	2100	2100	111.72	3	2058	2797	0.6	0		
Aggregated		19	0	3	2100	2100	111.72	3	2058	2797	0.6	0		

```
(.venv) PS E:\College_Documents\Sem-6\CC Lab\LAB 2\PES2UG23CS260\CC Lab-2> locust -f locust/checkout_locustfile.py
GET      /checkout          3    4    5    5    7   2100   2100   2100   2100   2100   2100   19
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Aggregated          3    4    5    5    7   2100   2100   2100   2100   2100   2100   19

(.venv) PS E:\College_Documents\Sem-6\CC Lab\LAB 2\PES2UG23CS260\CC Lab-2> █
```

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	4	2100	2100	111.77	2	2053	2797	0.7	0
	Aggregated	19	0	4	2100	2100	111.77	2	2053	2797	0.7	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	19	0	4	2100	2100	111.77	2	2053	2797	0.7	0
	Aggregated	19	0	4	2100	2100	111.77	2	2053	2797	0.7	0

SS6:

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	/events?user=locust_user	17	0	190	2300	2300	326.74	179	2296	21138	0.5	0
Aggregated		17	0	190	2300	2300	326.74	179	2296	21138	0.5	0

SS7:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPITER +  
_check_callback  
[...]  
[...]  
[...]  
[...]  
[...]  
  
(.venv) PS E:\College Documents\Sem-6\CC Lab\Lab 2\PESU2G23CS269(CC Lab-2> locust -f locust/events_locustfile.py  
[2026-01-29 15:25:28,148] KARTIK/INFO/locust.main: Starting locust 2.4.1  
[2026-01-29 15:25:20,148] KARTIK/INFO/locust.main: Starting the web interface at http://localhost:8089, press enter to open your default browser.  
[2026-01-29 15:25:33,554] KARTIK/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 user per second  
[2026-01-29 15:25:33,555] KARTIK/INFO/locust.runners: All users spawned: {"EventSinker": 1} (1 total users)  
Traceback (most recent call last):  
File "E:\College Documents\Sem-6\CC Lab\Lab 2\PESU2G23CS269(CC Lab-2\venv\lib\site-packages\gevent\ffilib\loop.py", line 279, in python  
_check_callback  
    def python_check_callback(self, watcher_ptr): # pylint:disable=unused-argument  
  
KeyboardInterrupt  
[2026-01-29T09:56:27Z]  
[2026-01-29 15:26:27,110] KARTIK/INFO/locust.main: Shutting down (exit code 0)  
Type          Name           # req | # fail | Avg   Min   Max   Med   req/s failures/s  
GET          /events/user=locust_user  19  0(0.0%) | 110   2   2845  3   0.64   0.00  
Aggregated          19  0(0.0%) | 110   2   2845  3   0.64   0.00  
  
Response time percentiles (approximated)  
Type          Name           50%  60K  75%  80%  90%  95%  98%  99%  99.9% 99.99% 100% #  
req  
GET          /events/user=locust_user  3    4    4    4    5    2080  2080  2080  2080  2080  2080  
19  
Aggregated          3    4    4    4    5    2080  2080  2080  2080  2080  2080  
19  
  
(.venv) PS E:\College Documents\Sem-6\CC Lab\Lab 2\PESU2G23CS269(CC Lab-2>
```

```
[2026-01-29 15:25:20,148] KARTIK/INFO/locust.main: Starting locust 2.7.4.1
[2026-01-29 15:25:20,148] KARTIK/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-29 15:25:33,554] KARTIK/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-29 15:25:33,555] KARTIK/INFO/locust.runners: All users spawned: {"EventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "E:\College_Documents\Sem-6\CC Lab\LAB 2\PES2UG23CS260\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

2026-01-29T09:56:27Z

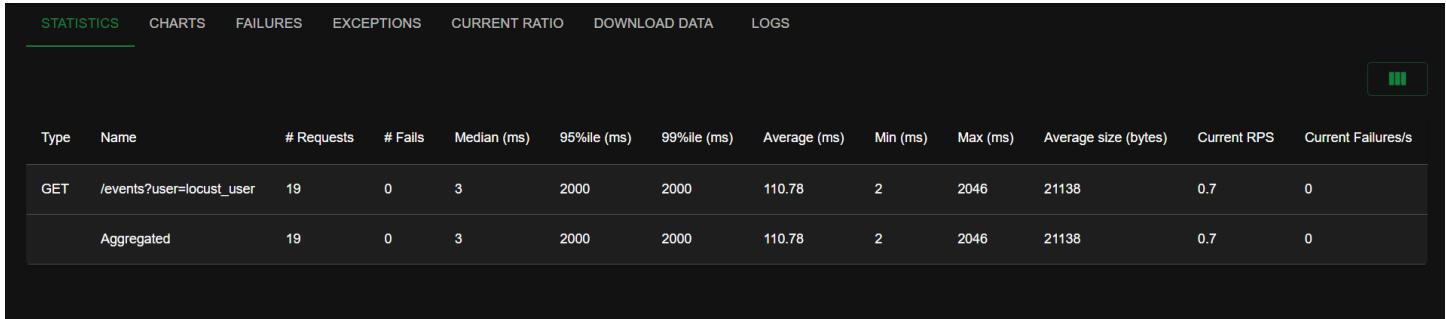
[2026-01-29 15:26:27,110] KARTIK/INFO/locust.main: shutting down (exit code 0)

Type	Name	# reqs	# fails	Avg	Min	Max	Med	req/s	failures/s
GET	/events?user=locust_user	19	0(0.00%)	110	2	2045	3	0.64	0.00
	Aggregated	19	0(0.00%)	110	2	2045	3	0.64	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	3	4	4	4	5	2000	2000	2000	2000	2000	2000	19
	Aggregated	3	4	4	4	5	2000	2000	2000	2000	2000	2000	19

(.venv) PS E:\College_Documents\Sem-6\CC Lab\LAB 2\PES2UG23CS260\CC Lab-2> █



SS8:

```
[2026-01-29 15:28:53,221] KARTIK/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-29 15:28:53,221] KARTIK/INFO/locust.runners: All users spawned: {"EventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "E:\College_Documents\Sem-6\CC Lab\LAB 2\PES2UG23CS260\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

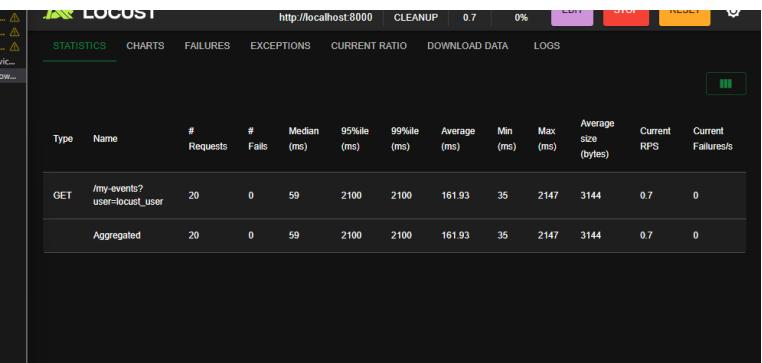
2026-01-29T09:59:20Z

[2026-01-29 15:29:29,825] KARTIK/INFO/locust.main: Shutting down (exit code 0)

Type	Name	# reqs	# fails	Avg	Min	Max	M
ed	req/s failures/s						
GET	/my-events?user=locust_user	20	0(0.00%)	161	35	2146	
59	0.68 0.00						
	Aggregated	20	0(0.00%)	161	35	2146	
59	0.68 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	63	73	74	75	89	2180	2180	2180	2180	2180	2180	20
2180	2180 2180 2180 2180 20												
	Aggregated	63	73	74	75	89	2180	2180	2180	2180	2180	2180	20



(.venv) PS E:\College_Documents\Sem-6\CC Lab\LAB 2\PES2UG23CS260\CC Lab-2> █

```

...
File "E:\College_Documents\Sem-6\CC Lab\LAB 2\PES2UG23CS260\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

File "E:\College_Documents\Sem-6\CC Lab\LAB 2\PES2UG23CS260\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
2026-01-29T09:59:29Z
[2026-01-29 15:29:29,825] KARTIK/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        20    0(0.00%) | 161   35   2146   59   0.68   0.00
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Aggregated                                20    0(0.00%) | 161   35   2146   59   0.68   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        63   73   74   75   89   2100  2100  2100  2100  2100  2100  20
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Aggregated                                63   73   74   75   89   2100  2100  2100  2100  2100  2100  20

(.venv) PS E:\College_Documents\Sem-6\CC Lab\LAB 2\PES2UG23CS260\CC Lab-2> █

```

Locust Performance Test Report												
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	20	0	59	2100	2100	161.93	35	2147	3144	0.7	0
	Aggregated	20	0	59	2100	2100	161.93	35	2147	3144	0.7	0

SS9:

Locust Performance Test Report												
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	20	0	3	2100	2100	107.29	2	2065	3144	0.7	0
	Aggregated	20	0	3	2100	2100	107.29	2	2065	3144	0.7	0

Locust Performance Test Report												
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	20	0	3	2100	2100	107.29	2	2065	3144	0.7	0
	Aggregated	20	0	3	2100	2100	107.29	2	2065	3144	0.7	0

```

KeyboardInterrupt
2026-01-29T10:06:13Z
[2026-01-29 15:36:13,845] KARTIK/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          20     0(0.00%) | 107    2   2064   3 | 0.67     0.00
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Aggregated                         20     0(0.00%) | 107    2   2064   3 | 0.67     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          3      4      4      6      18    2100   2100   2100   2100   2100   2100   20
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Aggregated                         3      4      4      6      18    2100   2100   2100   2100   2100   2100   20

```

PS E:\College_Documents\Sem-6\CC Lab\LAB 2\PES2UG23CS260\CC Lab-2> █

1. What was the bottleneck?

For loop for summing up was and dum was not necessary as it doesn't have any use in the logic of the code

2. What change did you make?

I removed both of the loops to optimize them

3. Why did the performance improve?

Because on every call of the events and my_events for loop didn't run which actually had no significance