

Cloud Computing ~ Lab 2

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Section : F

SRN : PES2UG23CS358

Github Repo Link ~

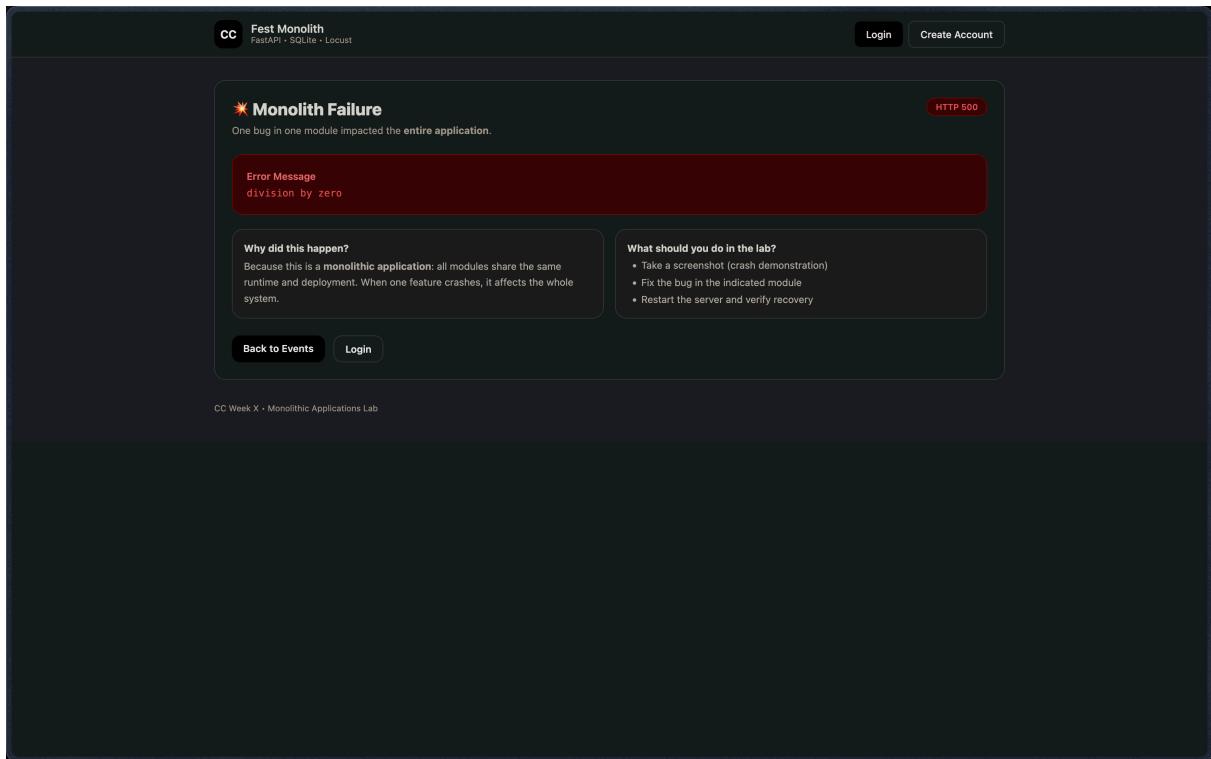
https://github.com/anishNagula/PES2UG23CS358_CC-Lab-2

SS1

The screenshot shows a dark-themed web application interface for event registration. At the top, there's a navigation bar with the logo 'Fest Monolith' (CC), followed by links for 'Events', 'My Events', 'Checkout', and 'Logout'. Below the navigation, a header says 'Events' and 'Welcome PES2UG23CS358. Register for events below.' A 'View My Events' button is also present. The main content area displays a 4x3 grid of event cards:

Event ID	Description	Fee	Action
1	Hackathon Includes certificate - instant registration - limited seats	₹ 500	Register
2	Dance Includes certificate - instant registration - limited seats	₹ 300	Register
3	Hackathon Includes certificate - instant registration - limited seats	₹ 500	Register
4	Dance Battle Includes certificate - instant registration - limited seats	₹ 300	Register
5	AI Workshop Includes certificate - instant registration - limited seats	₹ 400	Register
6	Photography Walk Includes certificate - instant registration - limited seats	₹ 200	Register
7	Gaming Tournament Includes certificate - instant registration - limited seats	₹ 350	Register
8	Music Night Includes certificate - instant registration - limited seats	₹ 250	Register
9	Treasure Hunt Includes certificate - instant registration - limited seats	₹ 150	Register
10	Stand-up Comedy Includes certificate - instant registration - limited seats	₹ 300	Register
11	Robo Race Includes certificate - instant registration - limited seats	₹ 450	Register
12	Hackathon Includes certificate - instant registration - limited seats	₹ 500	Register

SS2



```
INFO:      127.0.0.1:51159 - "GET /checkout HTTP/1.1" 500 Internal Server Error
ERROR:     Exception in ASGI application
```

```
result = context.run(func, *args)
File "/Users/anishnagula/College/sem6/cloud/lab/Lab-2/PES2UG23CS358/CC Lab-2
/main.py", line 113, in checkout
    total = checkout_logic()
File "/Users/anishnagula/College/sem6/cloud/lab/Lab-2/PES2UG23CS358/CC Lab-2
/checkout/__init__.py", line 10, in checkout_logic
    1 / 0
ZeroDivisionError: division by zero
■
%K to generate command
```

SS3

Fest Monolith
FastAPI + SQLite + Locust

[Login](#) [Create Account](#)

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:     Application startup complete.
INFO: 127.0.0.1:51357 - "GET /checkout HTTP/1.1" 200 OK
[]
```

⌘K to generate command

SS4

```
(.venv) ⚡ .../Lab-2/PES2UG23CS358/PES2UG23CS358\CC Lab-2 Locust -f locust/checkout.locustfile.py
/Users/anishnagula/College/sems/cloud/lab/Lab-2/PES2UG23CS358/PES2UG23CS358\CC Lab-2/.venv/lib/python3.9/site-packages/urllib3/_init_.py:35: NotOpenSSLWarning: urllib3 v2 only supports OpenSSL 1.1.1+. currently the 'ssl' module is compiled with 'LibreSSL 2.8.3'. See: https://github.com/urllib3/urllib3/issues/3829
  warnings.warn([
[2026-01-20 15:51:49,691] Anishs-MacBook-Air/INFO/locust.main: Starting Locust 2.34.0
[2026-01-20 15:51:49,691] Anishs-MacBook-Air/WARNING/locust.main: Python 3.9 support is deprecated and will be removed soon
[2026-01-20 15:51:49,692] Anishs-MacBook-Air/INFO/locust.main: Starting web interface at http://0.0.0.0:8089. Press enter to open your default browser.
[2026-01-20 15:52:02,348] Anishs-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 15:52:02,349] Anishs-MacBook-Air/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
KeyboardInterrupt
[2026-01-20 15:52:19,060] Anishs-MacBook-Air/INFO/locust.main: Shutting down (exit code 0)
```

Locust Host: http://127.0.0.1:8000 Status: RUNNING Users: 1 RPS: 0.6 Failures: 0% EDIT STOP RESET

Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Current RPS	Current Failures/s
GET	/checkout	11	0	5	8	5.25	3	8	2797	0.6	0
	Aggregated	11	0 (0.00%)	5	8	5	3	8	2797	0.6	0

Response time percentiles (approximated)

Type	Name	50%	66%	75%	80%	90%	95%	98%	99%	99.9%	99.99%	99.999%
GET	/checkout	5	6	7	7	8	8	8	8	8	8	8
	Aggregated	5	6	7	7	8	8	8	8	8	8	8

SS5

```
  (.venv) + PES2UG23CS358/CC Lab-2 |
```

.../Lab-2/PES2UG23CS358/PES2UG23CS358/CC Lab-2

(.venv) + PES2UG23CS358/CC Lab-2 locust -f /locust/checkout.locustfile.py

/Users/anishashagula/College/sem/CloudLab/Lab-2/PES2UG23CS358/PES2UG23CS358/CC Lab-2/.venv/lib/python3.9/site-packages/urllib3/_init_.py:35: NotOpenSSLWarning: urllib3 v2 only supports OpenSSL 1.1.1+, currently the 'ssl' module is compiled with 'LibreSSL 2.8.3'. See: https://github.com/urllib3/urllib3/issues/3020 [warnings]

[2026-01-20 15:32:39,588] Anishs-MacBook-Air/INFO/locust.main: Starting Locust 2.34.0

[2026-01-20 15:32:39,588] Anishs-MacBook-Air/INFO/locust.main: Python 3.9 support is deprecated and will be removed soon

[2026-01-20 15:32:38,589] Anishs-MacBook-Air/WARNING/locust.main: Python 3.9 support is deprecated and will be removed soon

[2026-01-20 15:32:38,589] Anishs-MacBook-Air/INFO/locust.main: Starting web interface at http://0.0.0.0:8089, press enter to open your default browser

[2026-01-20 15:32:49,863] Anishs-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second

[2026-01-20 15:32:49,863] Anishs-MacBook-Air/INFO/locust.runners: All users spawned: {"CheckoutUser": 1}

1 total users

KeyboardInterrupt

2026-01-20T08:05:11Z

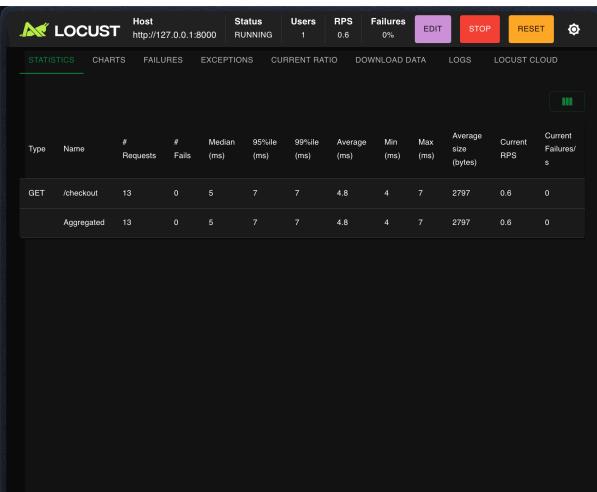
[2026-01-20 15:33:11,842] Anishs-MacBook-Air/INFO/locust.main: Shutting down (exit code 0)

Type	Name	# resp	# fails	Avg	Min	Max	Med	r/s	failures/s
GET	/checkout	14	0 (0.00%)	4	2	6	5	0.67	0.00
	Aggregated	14	0 (0.00%)	4	2	6	5	0.67	0.00

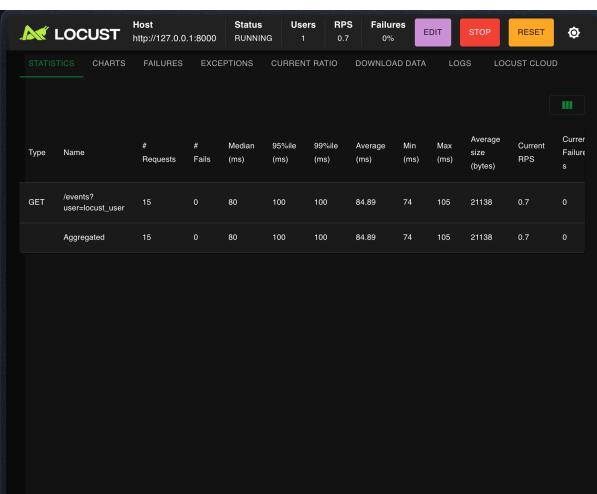
Response time percentiles (approximated)

Type	Name	50%	66%	75%	80%	90%	95%	98%	99%	99.9%	99.99%
% 100%	# reqs	-	-	-	-	-	-	-	-	-	-
GET	/checkout	5	5	6	6	6	7	7	7	7	7
	Aggregated	5	5	6	6	6	7	7	7	7	7

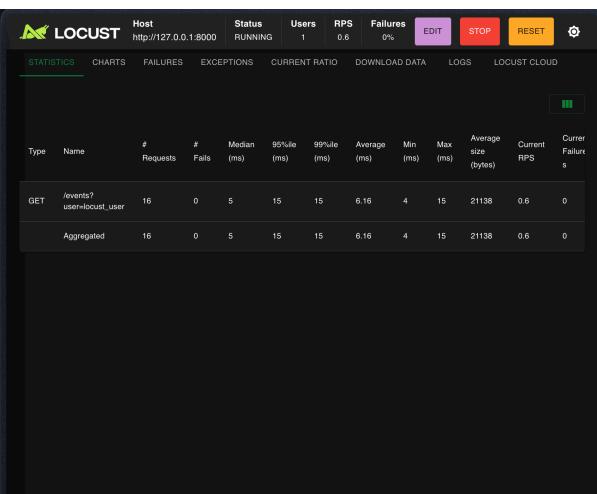
7 7 14



ss6



ss7



SS8

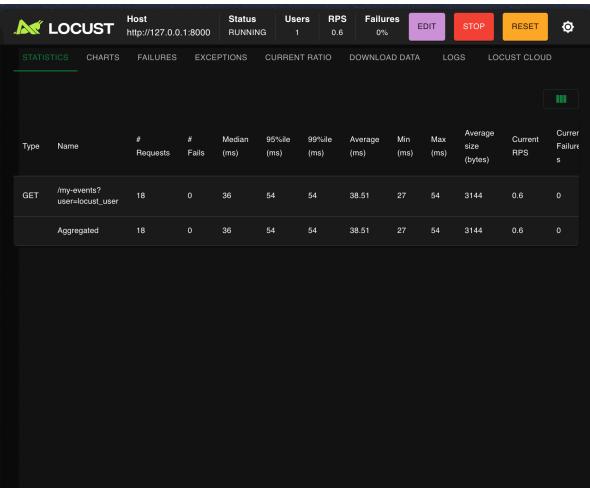
```

█ .../Lab-2/PE52U0G2CS358/PE52U0G2CS358[CC Lab-2
(.venv) ➜  PE52U0G2CS358[CC Lab-2 locust -f locust/meetings.locustfile.py
[2026-01-20 15:36:21.598] Anishs-MacBook-Air/INFO/locust.main: Starting Locust 2.34.0
[2026-01-20 15:36:21.598] Anishs-MacBook-Air/INFO/locust.main: Python 3.9 support is deprecated and will be removed soon
[2026-01-20 15:36:21.599] Anishs-MacBook-Air/INFO/locust.main: Starting web interface at http://0.0.0.0:8089
[2026-01-20 15:36:21.599] Anishs-MacBook-Air/INFO/locust.main: Open your browser and enter to open your default browser.
[2026-01-20 15:36:28.463] Anishs-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 15:36:28.464] Anishs-MacBook-Air/INFO/locust.runners: All users spawned: {"MyEventUsers": 1}
[2026-01-20 15:36:28.464] Anishs-MacBook-Air/INFO/locust.runners: 1 total users
KeyboardInterrupt
2026-01-20 10:10:05.552
[2026-01-20 15:36:55.200] Anishs-MacBook-Air/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  18   0(0.0%) | 38    26    54   36   | 0.69   0.69
        Aggregated          18   0(0.0%) | 38    26    54   36   | 0.69   0.69

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  39   43   46   48   54   54   54   54   54   54   54
54      54   18
        Aggregated          39   43   46   48   54   54   54   54   54   54   54

(.venv) ➜  PE52U0G2CS358[CC Lab-2

```

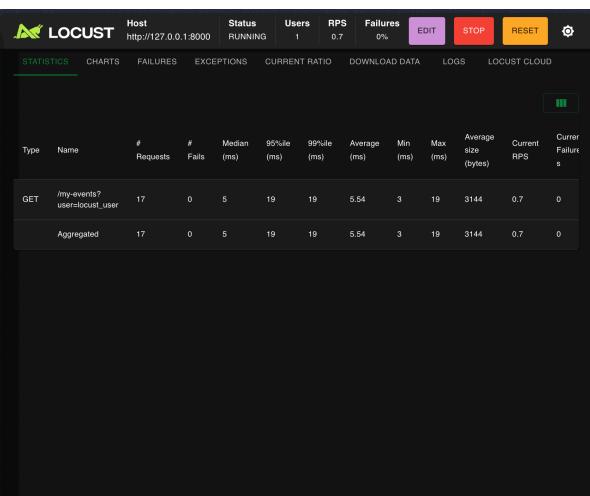


ss9

```
[...Lab-2]PES2U2G23CS358/PES2U2G23CS358@CC Lab-2
(.venv) + PES2U2G23CS358@CC Lab-2 locust -f locustfile.py
[User@anishnagula@College-sensel-cloud:~/lab-2/PES2U2G23CS358/PES2U2G23CS358@CC Lab-2.] .venv/lib/python3.9/site-packages/utilities/_init_.py:35: NotOpenSSLWarning: urllib3 2.0 only supports OpenSSL 1.1.1+, currently the 'ssl' module is provided with 'LibreSSL 2.8.3'. See: https://github.com/urllib3/urllib3/issues/3020
  warnings.warn(
[2026-01-20 15:37:12,012] Anishs-MacBook-Air/INFO/locust.main: Starting locust 2.34.0
[2026-01-20 15:37:12,012] Anishs-MacBook-Air/WARNING/locust.main: Python 3.9 support is deprecated and will be removed soon
[2026-01-20 15:37:12,013] Anishs-MacBook-Air/INFO/locust.main: Starting web interface at http://0.0.0.0:8089, press enter to open your default browser.
[2026-01-20 15:37:17,832] Anishs-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 15:37:17,833] Anishs-MacBook-Air/INFO/locust.runners: All users spawned: {"MyEventsUser": 1}
1 total users)
KeyboardInterrupt
2026-01-20 15:37:42.022
2026-01-20 15:37:42.629] Anishs-MacBook-Air/INFO/locust.main: Shutting down (exit code 0)
      time      name    # reqs   # fails | Avg     Min   Max   Med | req/s failures/s
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
GET    /my-events?user=locust_user    17   0(0.00%) | 5       3   19   5 | 0.71   0.71
  0.00
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
                               Aggregated           17   0(0.00%) | 5       3   19   5 | 0.71   0.71
                                         0.00

Response time percentiles (approximated)
      time      name    50%  66%  75%  80%  90%  95%  98%  99%  99.9% 99.99% 99.999%
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
% my 100%   reqs
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
GET    /my-events?user=locust_user    5   5   6   6   7   19   19   19   19   19   19   19   19   19
  19   17
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
                               Aggregated           5   5   6   6   7   19   19   19   19   19   19   19   19   19
  19   17

(.venv) + PES2U2G23CS358@CC Lab-2 |
```



Route: /events

- What was the bottleneck?

An unnecessary loop running 3,000,000 iterations on every request.

- **What change did you make?**

Removed the waste loop that did no useful work.

- Why did the performance improve?

Eliminating the loop reduced CPU usage, so the page responded faster.

Route: /my-events

- **What was the bottleneck?**

A dummy loop with 1,500,000 iterations executed on every request.

- **What change did you make?**

Removed the dummy loop from the route.

- **Why did the performance improve?**

Fewer unnecessary computations reduced request processing time.