

Cloud Computing - Lab 2

Monolithic Architecture

PES2UG23CS450
Priyanka Satish

SEM VI
Section G

SS1

Events page after logging in

The screenshot shows a web browser window with the URL `localhost:8000/events?user=PES2UG23CS450`. The page is titled "Events" and displays a grid of nine event cards. Each card includes an event ID, price, event name, a brief description, and a "Register" button.

Event ID	Price	Event Name	Description	Action
1	₹ 500	Hackathon	Includes certificate • instant registration • limited seats	Register
2	₹ 300	Dance	Includes certificate • instant registration • limited seats	Register
3	₹ 500	Hackathon	Includes certificate • instant registration • limited seats	Register
4	₹ 300	Dance Battle	Includes certificate • instant registration • limited seats	Register
5	₹ 400	AI Workshop	Includes certificate • instant registration • limited seats	Register
6	₹ 200	Photography Walk	Includes certificate • instant registration • limited seats	Register
7	₹ 350			
8	₹ 250			
9	₹ 150			

SS2

Crash while check out (uncommented line of code)

The screenshot shows a web browser window with multiple tabs. The active tab is titled "CC Fest Monolith" and the URL is "localhost:8000/register_event/404?user=PES2UG23CS450". The browser interface includes standard controls like back, forward, and search, along with a "Finish update" button.

The main content area displays an error message titled "Monolith Failure". It states: "One bug in one module impacted the entire application." Below this, an "Error Message" box contains the text "division by zero".

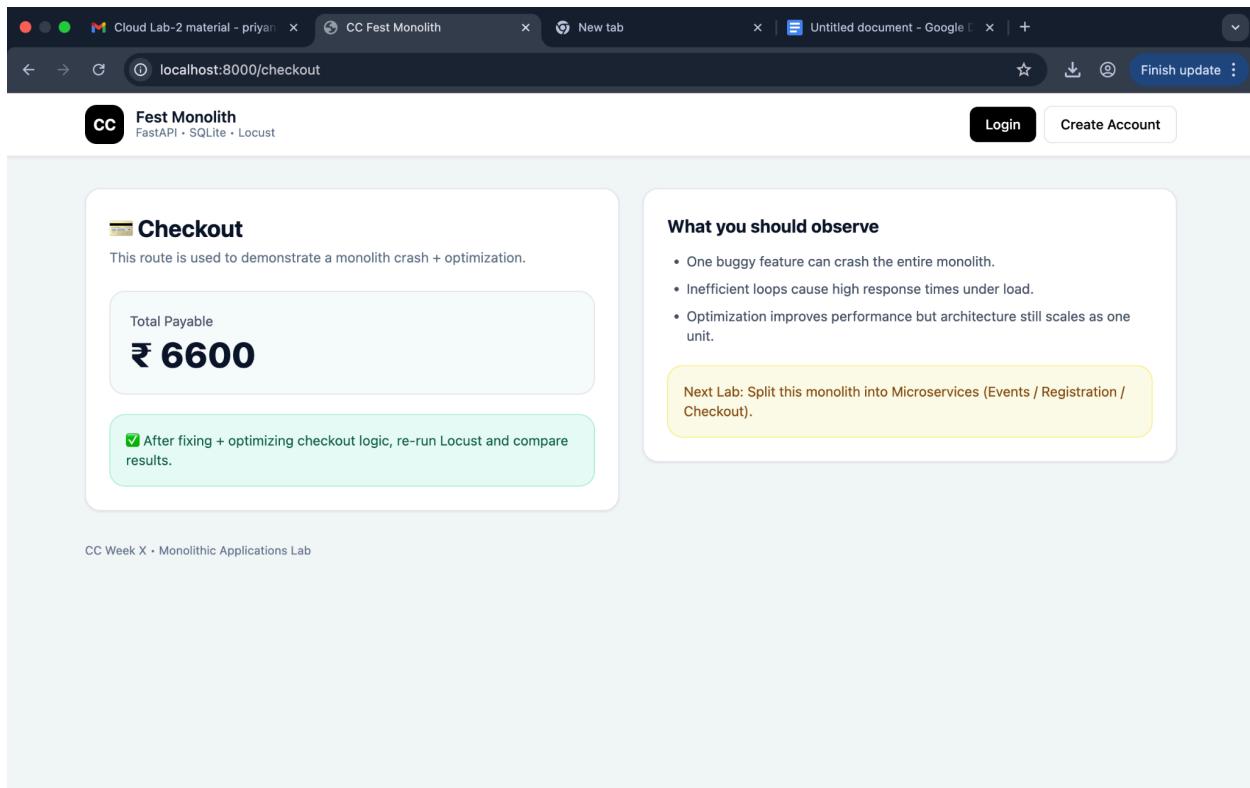
Two side panels provide additional information: "Why did this happen?" explains that it's a monolithic application where all modules share the same runtime and deployment, so a crash in one module affects the whole system. "What should you do in the lab?" lists three steps: taking a screenshot, fixing the bug, and restarting the server.

At the bottom left, there are "Back to Events" and "Login" buttons. The footer of the page includes the text "CC Week X • Monolithic Applications Lab".

```
INFO: 127.0.0.1:56531 - "GET /checkout HTTP/1.1" 500 Internal Server Error
ERROR: Exception in ASGI application
```

SS3

No crash (commented line of code)



The screenshot shows a web browser window with multiple tabs. The active tab is titled "CC Fest Monolith" and has the URL "localhost:8000/checkout". The page content is as follows:

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

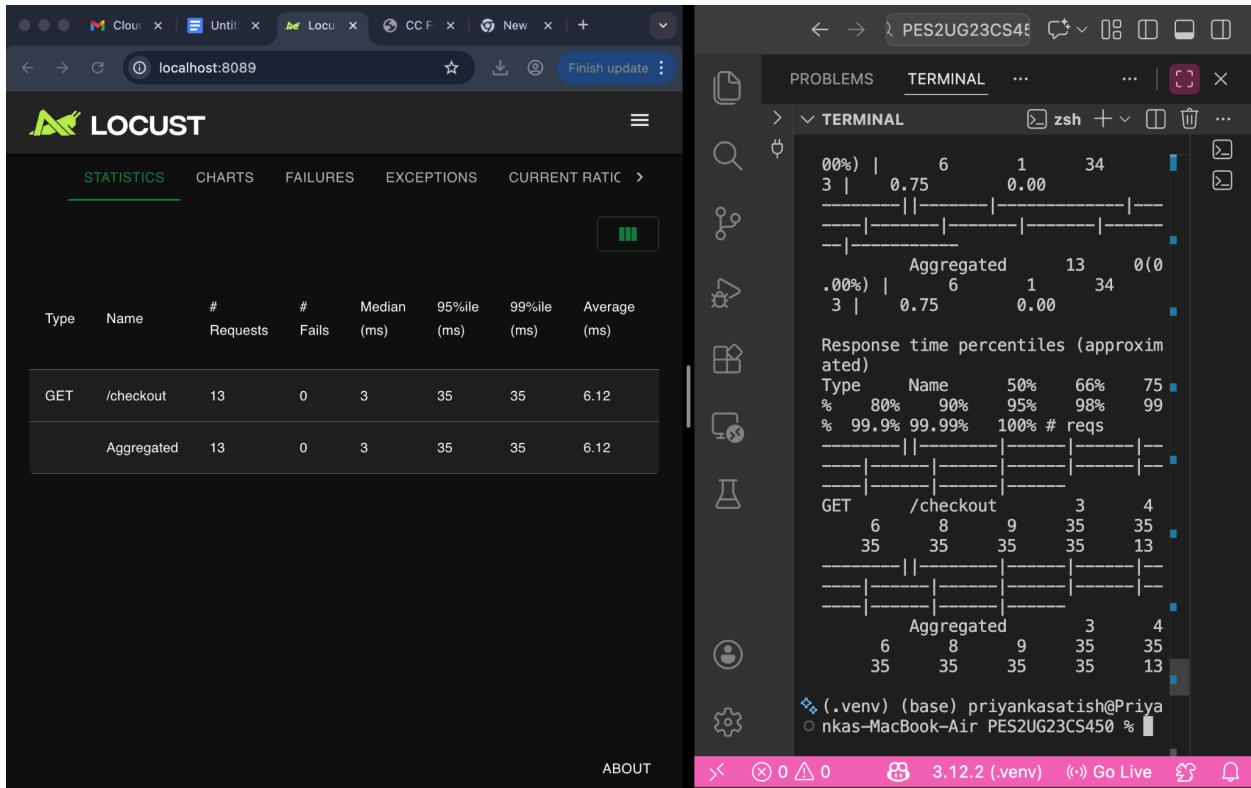
- One buggy feature can crash the entire monolith.
- Inefficient loops cause high response times under load.
- Optimization improves performance but architecture still scales as one unit.

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

```
INFO:    127.0.0.1:56563 - "GET /login HTTP/1.1" 302 Found
INFO:    127.0.0.1:56563 - "GET /events?user=PES2UG23CS450 HTTP/1.1" 200 OK
INFO:    127.0.0.1:56563 - "GET /checkout HTTP/1.1" 200 OK
```

ss4

Locust before code optimization for checkout (avg ms = 6.12)

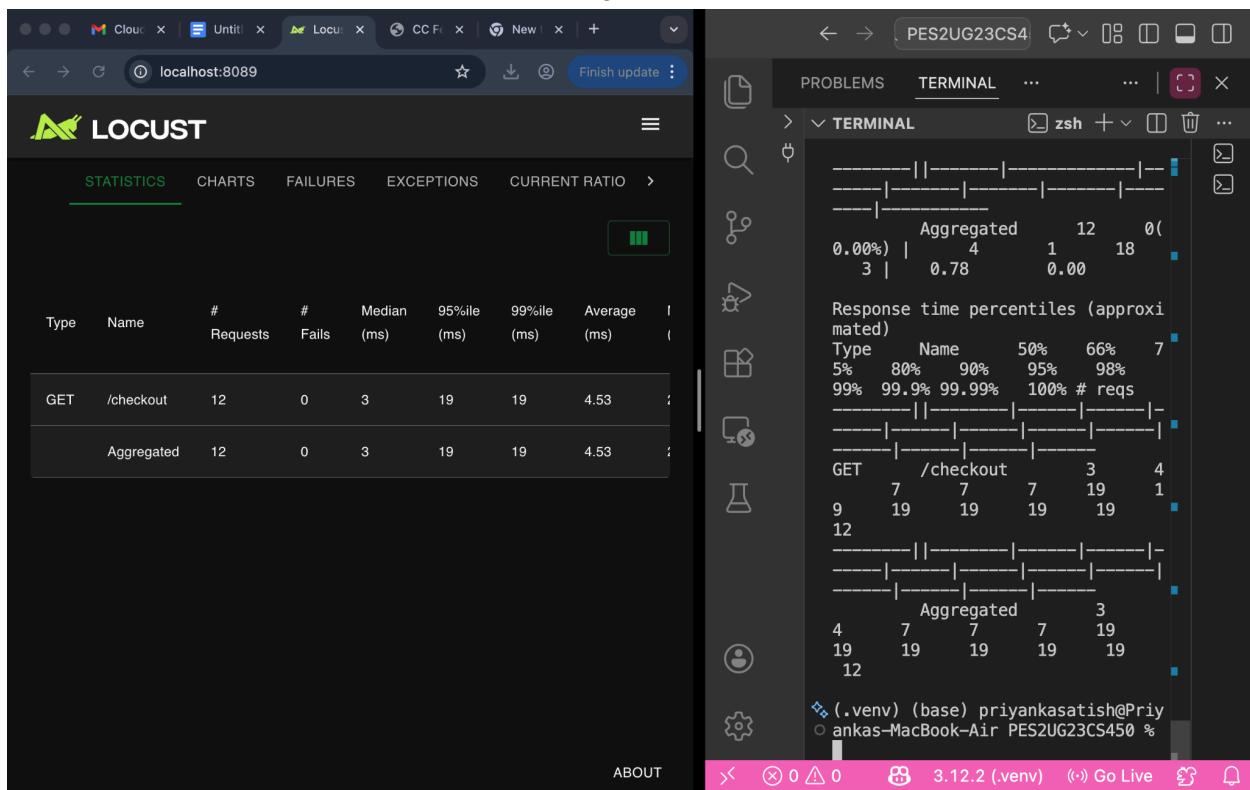


Inefficient code :

```
total = 0
for e in events:
    fee = e[0]
    while fee > 0
        total += fee
        fee -= 1
```

SS5

Locust after code optimization for checkout avg ms = (4.53)



Efficient code :

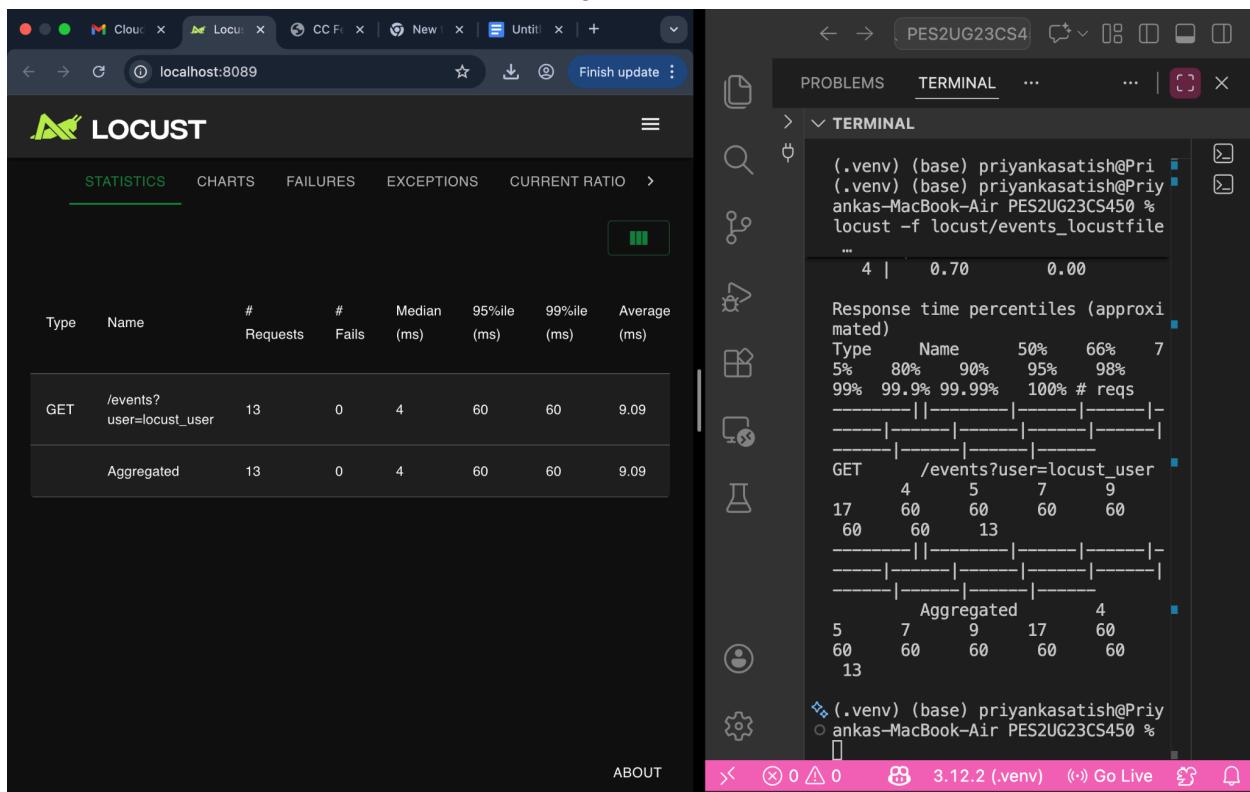
```
total = 0
for e in events:
    total += e[0]
```

ss6

Locust before code optimization for events (avg ms = 121.63)

SS7

Locust after code optimization for events (avg ms = 9.09)



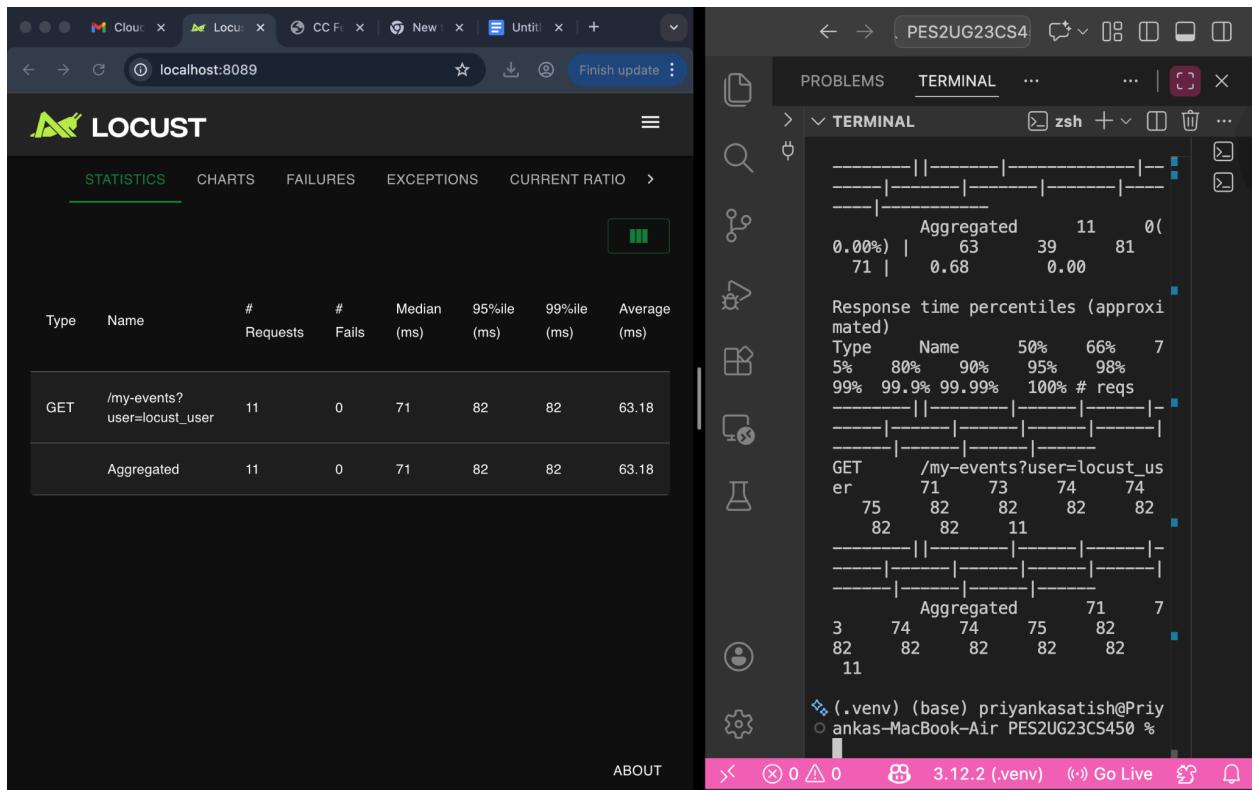
Optimization :

```
waste = 0
for i in range(3000000):
    waste += i % 3
```

Unnecessary loop removed

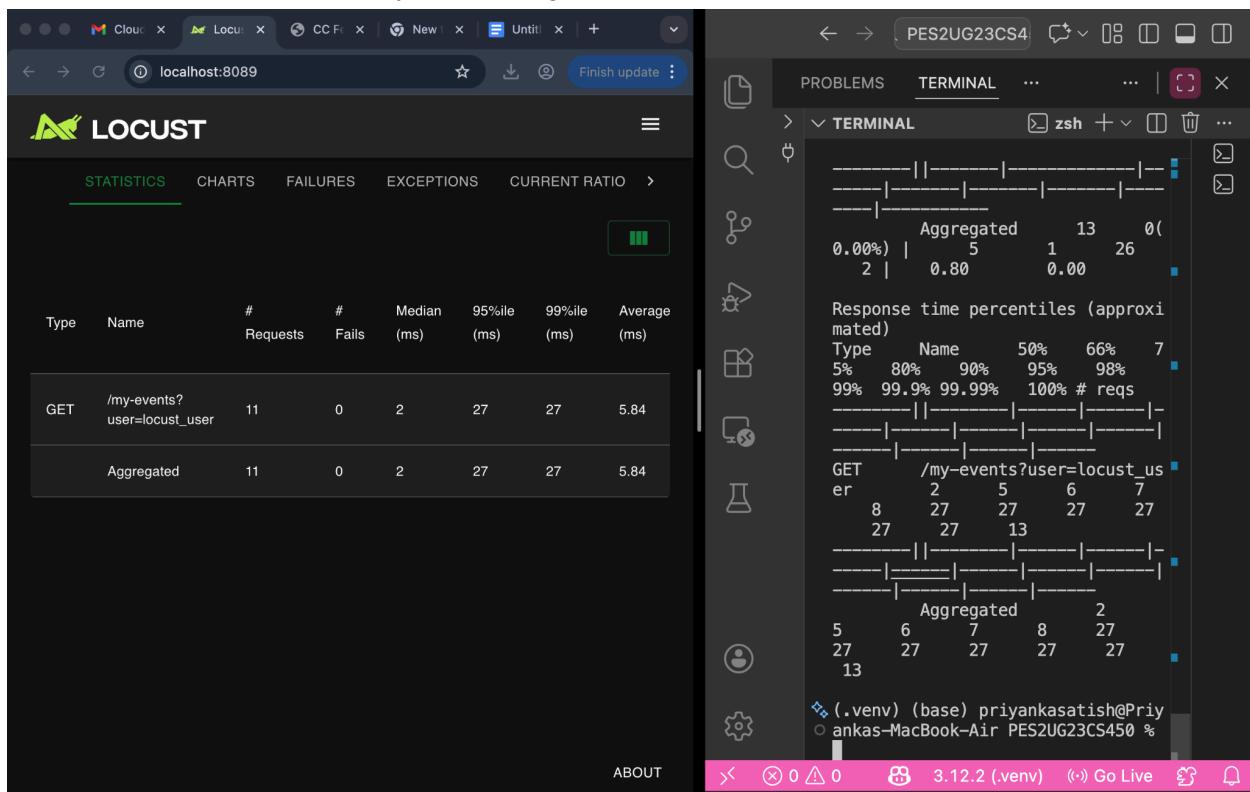
ss8

Locust before optimization for myevents (avg ms = 63.18)



SS9

Locust after optimization for myevents (avg ms = 5.84)



Optimization:

```
dummy = 0
for _ in range(1500000):
    dummy += 1
```

Unnecessary loop removed

GitHub link : <https://github.com/PES2UG23CS450/CC-LAB2-Monolithic-Architecture.git>