CLOUD COMPUTING

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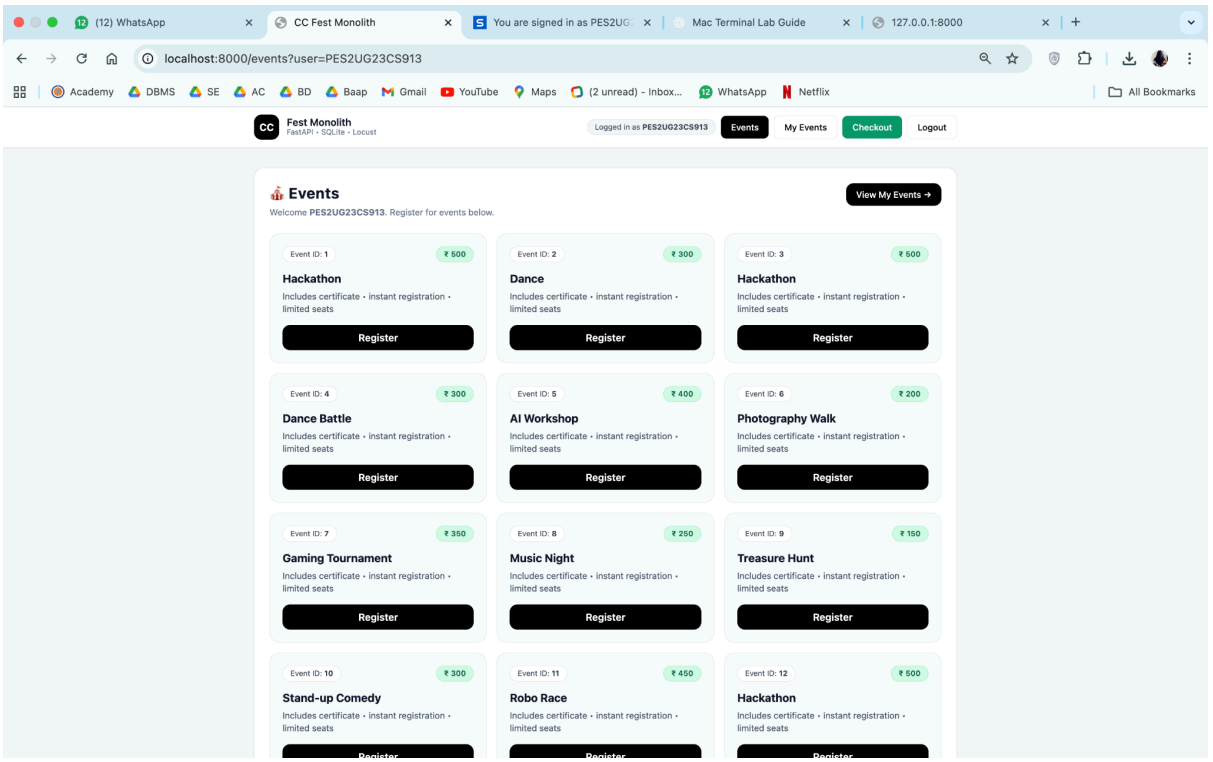
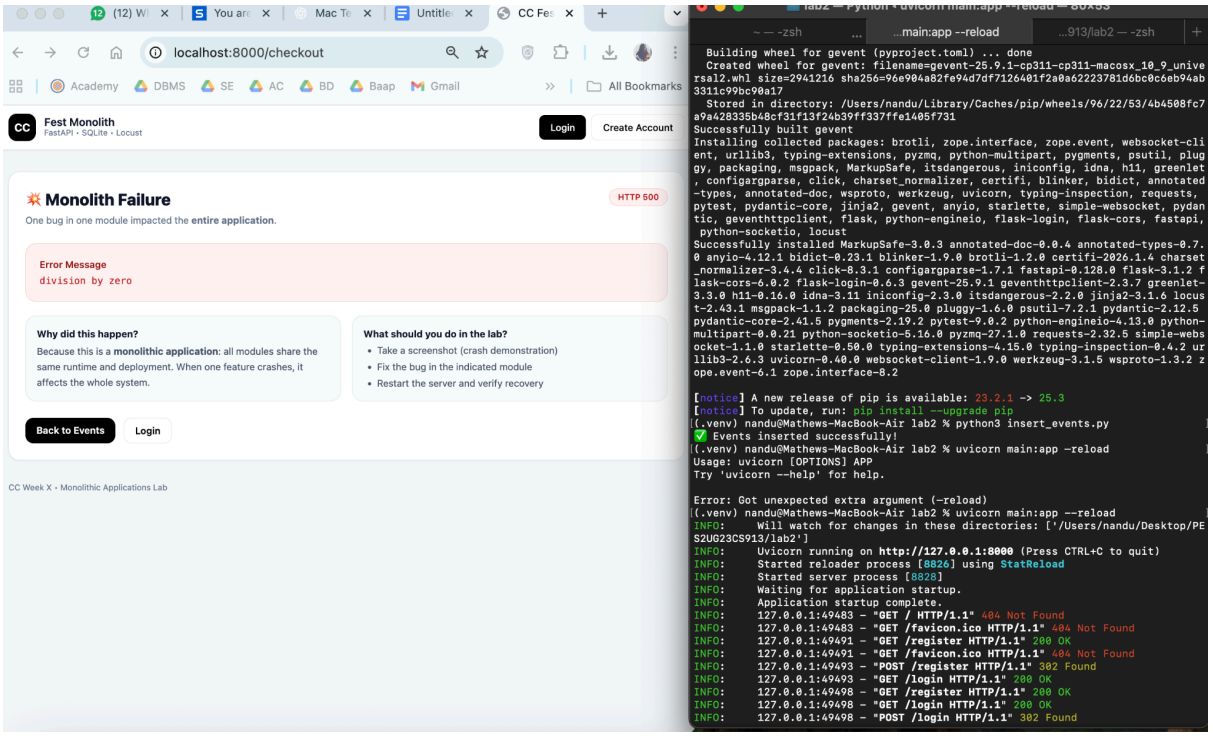
SEM: 6 F

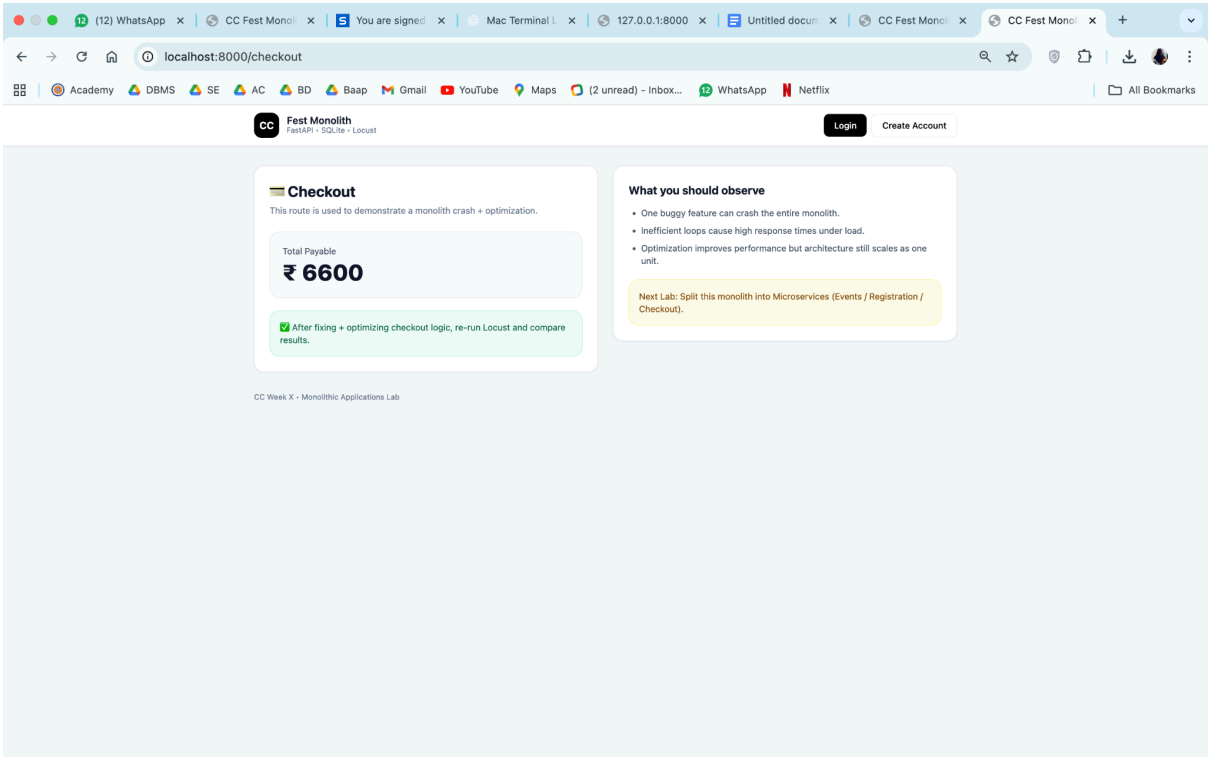
ss1:



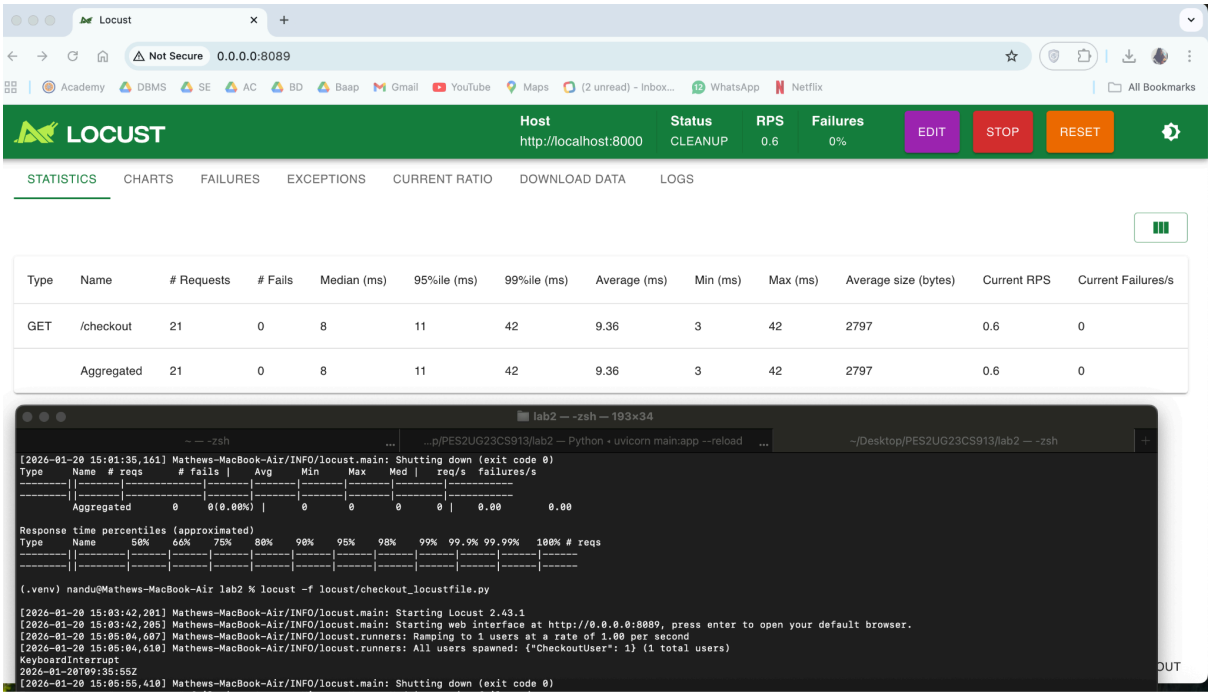
ss2:



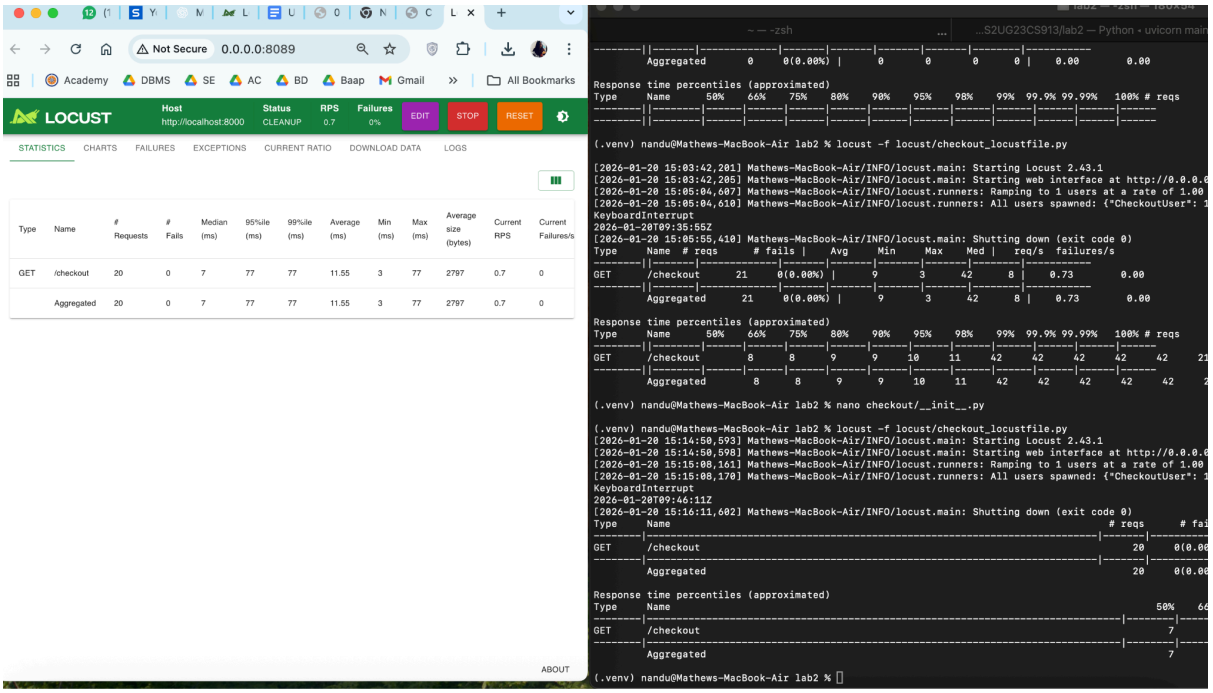
Ss3


localhost:8000/checkout
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

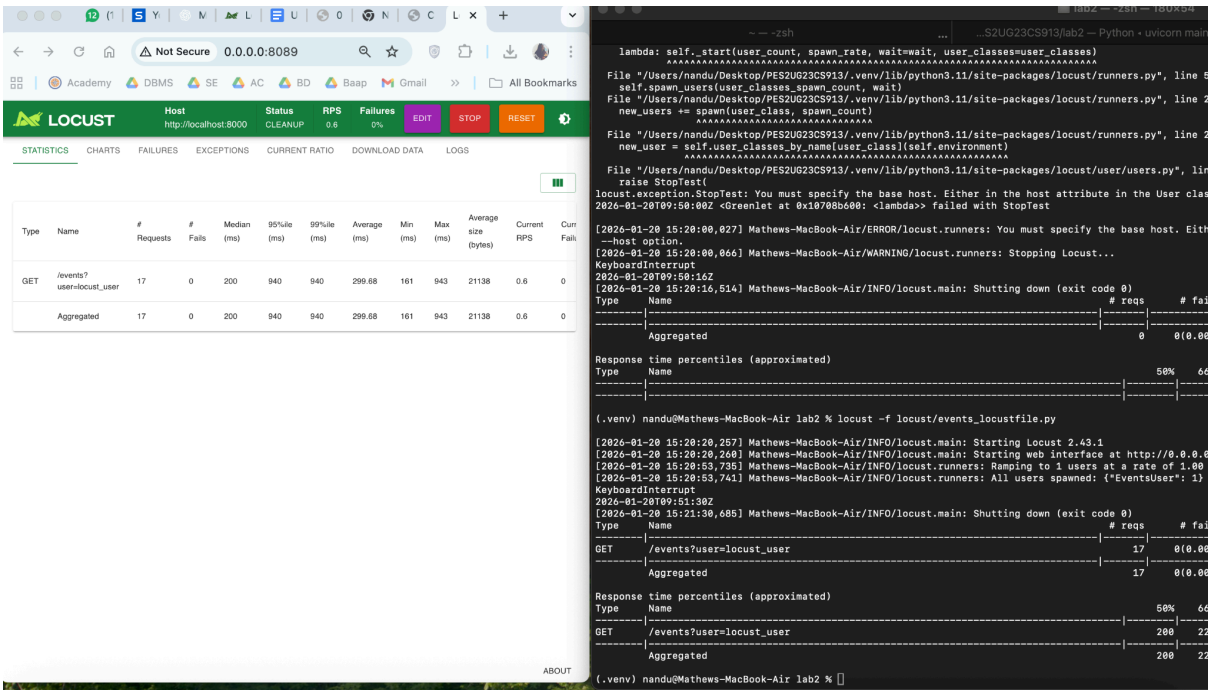
ss4


Not Secure
0.0.0.0:8089
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 /checkout 21 0 8 11 42 9.36 3 42 2797 0.6 0
Aggregated 21 0 8 11 42 9.36 3 42 2797 0.6 0
lab2 — -zsh — 193×34
[2026-01-20 15:01:35,161] Mathews-MacBook-Air/INFO/locust.main: Shutting down (exit code 0)
Aggregated 0 0(0.00%) | 0 0 0 0 | 0.00 0.00
(.venv) nandu@Mathews-MacBook-Air lab2 % locust -f locust/checkout_locustfile.py
[2026-01-20 15:03:42,201] Mathews-MacBook-Air/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 15:03:42,205] Mathews-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 15:05:04,607] Mathews-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 15:05:04,610] Mathews-MacBook-Air/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
KeyboardInterrupt
2026-01-20T09:35:55Z
[2026-01-20 15:05:55,410] Mathews-MacBook-Air/INFO/locust.main: Shutting down (exit code 0)

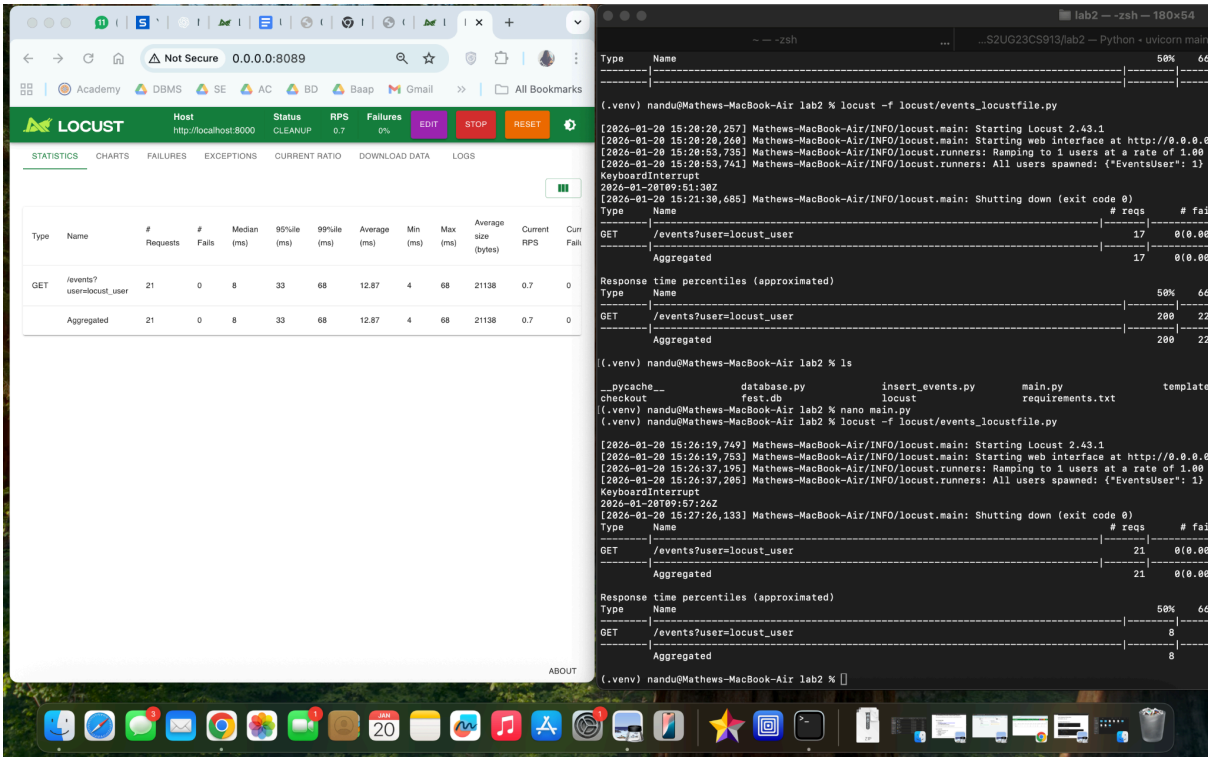
ss5


Not Secure 0.0.0.0:8089
LOCUST
Host http://localhost:8000
Status CLEANUP
RPS 0.7
Failures 0%
EDIT
STOP
RESET
STATISTICS
CHARTS
FAILURES
EXCEPTIONS
CURRENT RATIO
DOWNLOAD DATA
LOGS
ABOUT
(.venv) nandu@Mathews-MacBook-Air lab2 % locust -f locust/checkout_locustfile.py
(.venv) nandu@Mathews-MacBook-Air lab2 % nano checkout/__init__.py
(.venv) nandu@Mathews-MacBook-Air lab2 % locust -f locust/checkout_locustfile.py
(.venv) nandu@Mathews-MacBook-Air lab2 %

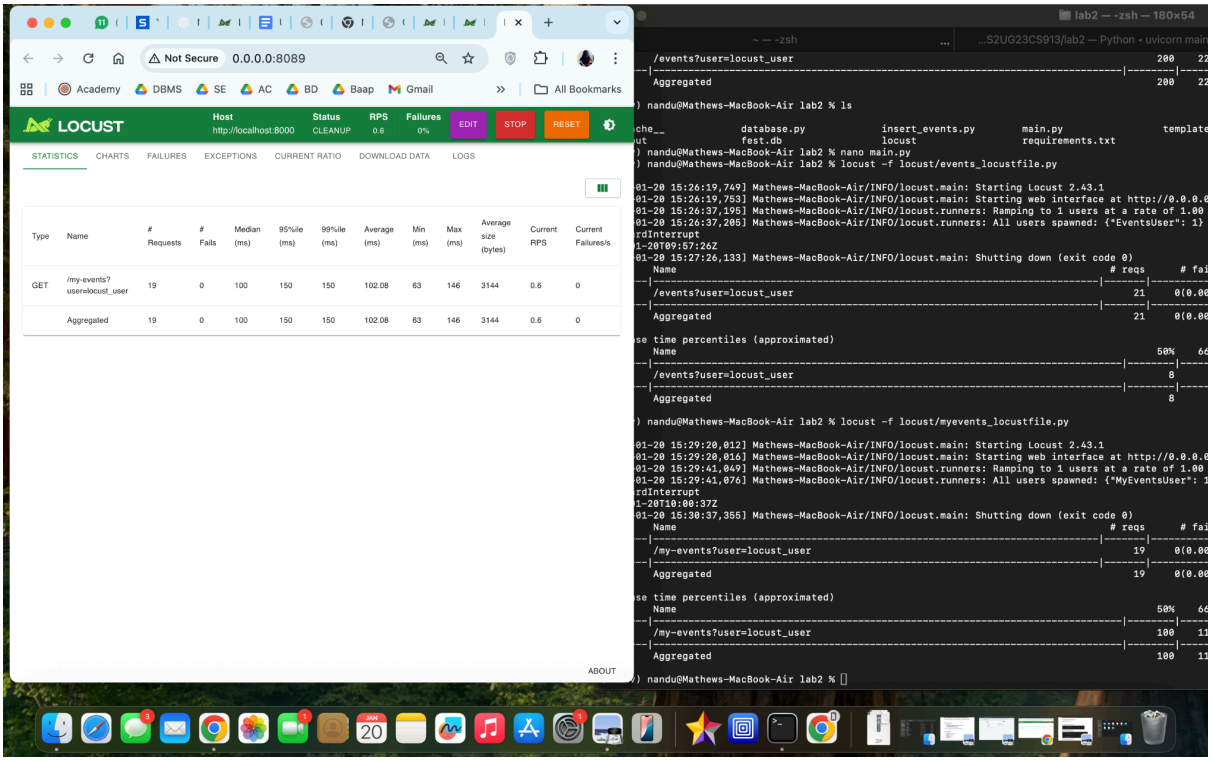
ss6


Not Secure 0.0.0.0:8089
LOCUST
Host http://localhost:8000
Status CLEANUP
RPS 0.6
Failures 0%
EDIT
STOP
RESET
STATISTICS
CHARTS
FAILURES
EXCEPTIONS
CURRENT RATIO
DOWNLOAD DATA
LOGS
ABOUT
locust.exception.StopTest: You must specify the base host. Either in the host attribute in the User clas
2026-01-20T09:50:00Z <Greenlet at 0x10708b600: <lambda>> failed with StopTest
(.venv) nandu@Mathews-MacBook-Air lab2 % locust -f locust/events_locustfile.py
(.venv) nandu@Mathews-MacBook-Air lab2 %

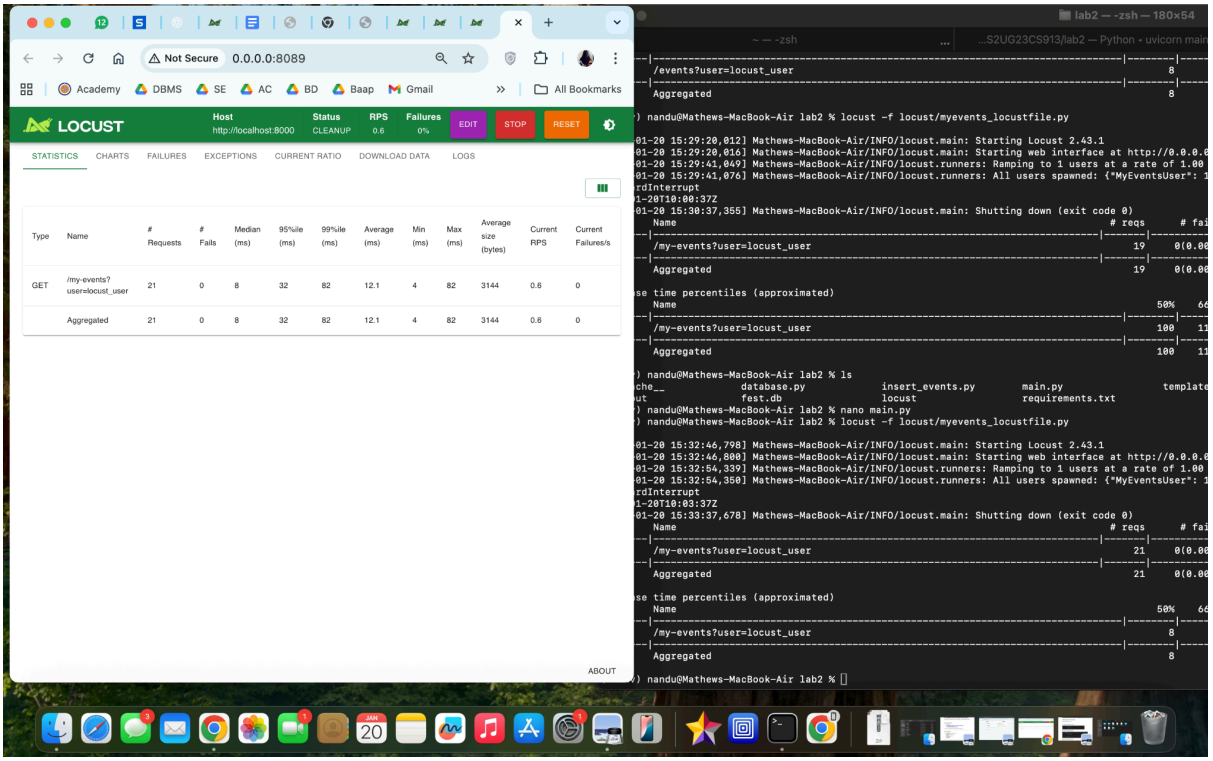
Ss7


Not Secure 0.0.0.0:8089
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
GET /events?user=locust_user 21 0 8 33 68 12.87 4 68 21138 0.7 0
Aggregated 21 0 8 33 68 12.87 4 68 21138 0.7 0
ABOUT
lab2 — -zsh — 180×54
(.venv) nandu@Mathews-MacBook-Air lab2 % locust -f locust/events_locustfile.py
[2026-01-20 15:20:20,257] Mathews-MacBook-Air/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 15:20:20,260] Mathews-MacBook-Air/INFO/locust.main: Starting web interface at http://0.0.0.0
[2026-01-20 15:20:53,735] Mathews-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00
[2026-01-20 15:20:53,741] Mathews-MacBook-Air/INFO/locust.runners: All users spawned: {"EventsUser": 1}
KeyboardInterrupt
2026-01-20T09:51:30Z
[2026-01-20 15:21:30,685] Mathews-MacBook-Air/INFO/locust.main: Shutting down (exit code 0)
Response time percentiles (approximated)
(.venv) nandu@Mathews-MacBook-Air lab2 % ls
__pycache__ database.py insert_events.py main.py templates
checkout fest.db locust requirements.txt
(.venv) nandu@Mathews-MacBook-Air lab2 % nano main.py
(.venv) nandu@Mathews-MacBook-Air lab2 % locust -f locust/events_locustfile.py
[2026-01-20 15:26:19,749] Mathews-MacBook-Air/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 15:26:19,753] Mathews-MacBook-Air/INFO/locust.main: Starting web interface at http://0.0.0.0
[2026-01-20 15:26:37,195] Mathews-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00
[2026-01-20 15:26:37,205] Mathews-MacBook-Air/INFO/locust.runners: All users spawned: {"EventsUser": 1}
KeyboardInterrupt
2026-01-20T09:57:26Z
[2026-01-20 15:27:26,133] Mathews-MacBook-Air/INFO/locust.main: Shutting down (exit code 0)
(.venv) nandu@Mathews-MacBook-Air lab2 %

Ss8


Not Secure 0.0.0.0:8089
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 19 0 100 150 150 102.08 63 146 3144 0.6 0
Aggregated 19 0 100 150 150 102.08 63 146 3144 0.6 0
ABOUT
lab2 — -zsh — 180×54
(.venv) nandu@Mathews-MacBook-Air lab2 % locust -f locust/myevents_locustfile.py
[2026-01-20 15:29:20,012] Mathews-MacBook-Air/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 15:29:20,016] Mathews-MacBook-Air/INFO/locust.main: Starting web interface at http://0.0.0.0
[2026-01-20 15:29:41,049] Mathews-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00
[2026-01-20 15:29:41,076] Mathews-MacBook-Air/INFO/locust.runners: All users spawned: {"MyEventsUser": 1}
KeyboardInterrupt
2026-01-20T10:00:37Z
[2026-01-20 15:30:37,355] Mathews-MacBook-Air/INFO/locust.main: Shutting down (exit code 0)
(.venv) nandu@Mathews-MacBook-Air lab2 %

Ss9



OPTIMIZATION:

In checkout:
The bottleneck is found to be that an inefficient loop-based calculation was used to compute the total amount, causing unnecessary CPU usage. So replace the while loop with a direct iteration over event fees and sum them efficiently.The optimized logic reduced redundant operations, lowering execution time and improving response latency.

In events:

The bottleneck is found to be a repeated data processing and unnecessary computations while fetching event details. Optimization was achieved by reducing redundant iterations and directly returning processed event data. Thereby, Fewer computations reduced server workload, resulting in faster response times under load.

In myevents:
Bottleneck is the multiple unnecessary loops while filtering user-specific registered events. It was optimized filtering logic to process data in a single pass. Thereby reduced time complexity improved response time and allowed better handling of concurrent requests.