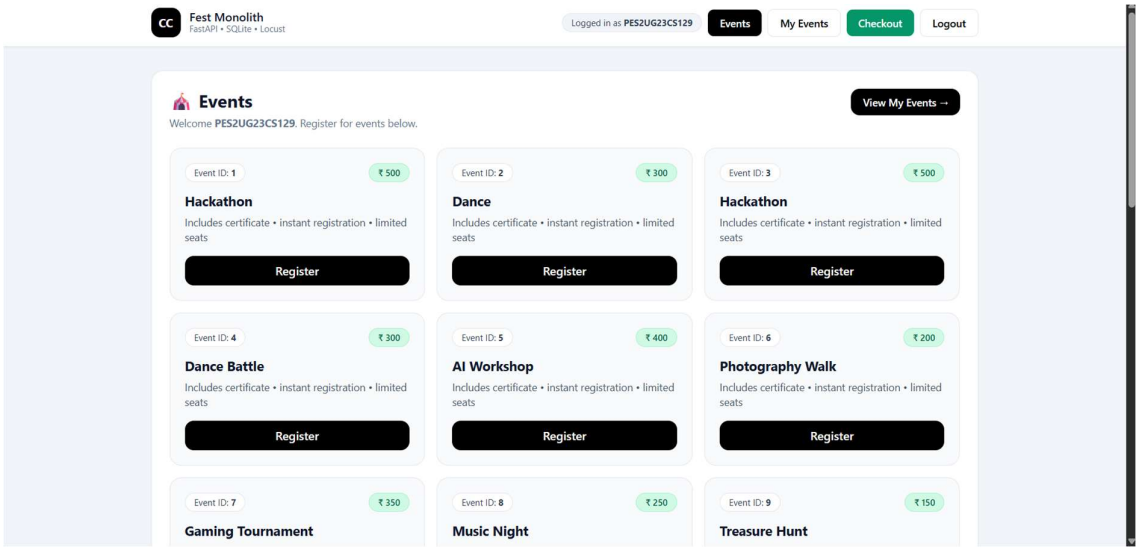
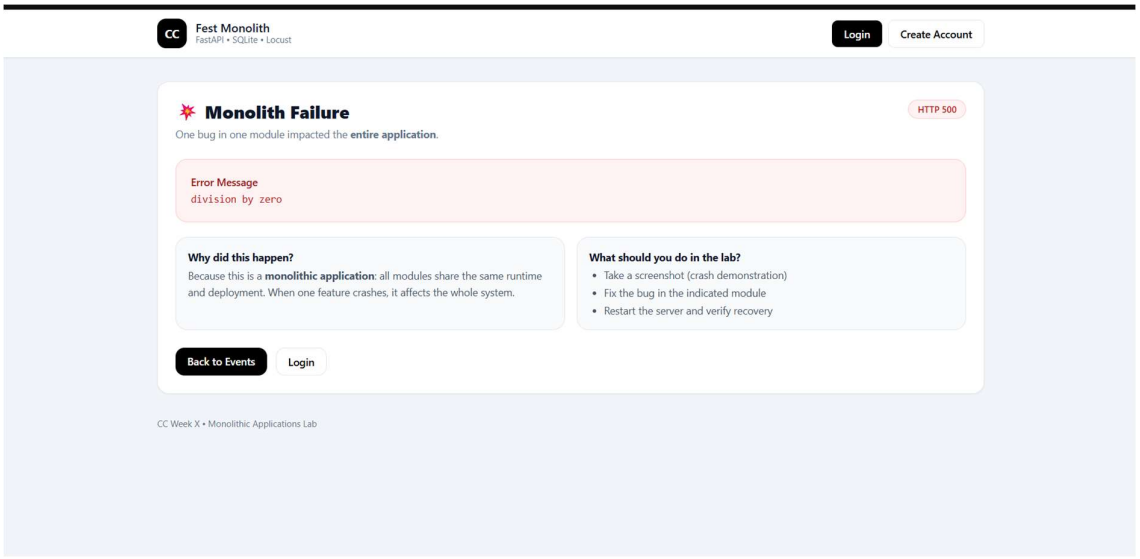
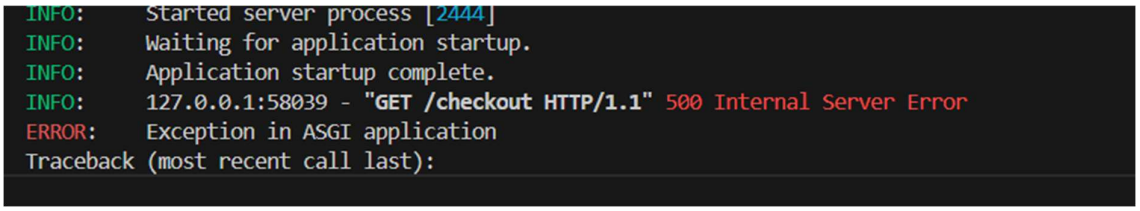
SS1

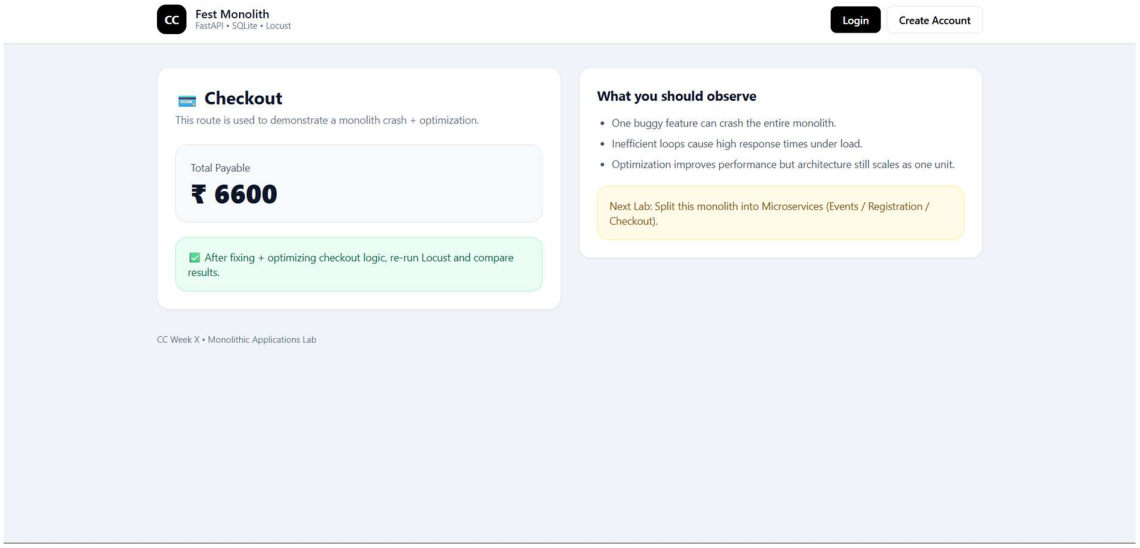

CC
Fest Monolith
FastAPI • SQLite • Locust
Logged in as PES2UG23CS129
Events
My Events
Checkout
Logout
Events
Welcome PES2UG23CS129. Register for events below.
View My Events →
Event ID: 1
₹ 500
Hackathon
Includes certificate • instant registration • limited seats
Register
Event ID: 2
₹ 300
Dance
Includes certificate • instant registration • limited seats
Register
Event ID: 3
₹ 500
Hackathon
Includes certificate • instant registration • limited seats
Register
Event ID: 4
₹ 300
Dance Battle
Includes certificate • instant registration • limited seats
Register
Event ID: 5
₹ 400
AI Workshop
Includes certificate • instant registration • limited seats
Register
Event ID: 6
₹ 200
Photography Walk
Includes certificate • instant registration • limited seats
Register
Event ID: 7
₹ 350
Gaming Tournament
Event ID: 8
₹ 250
Music Night
Event ID: 9
₹ 150
Treasure Hunt

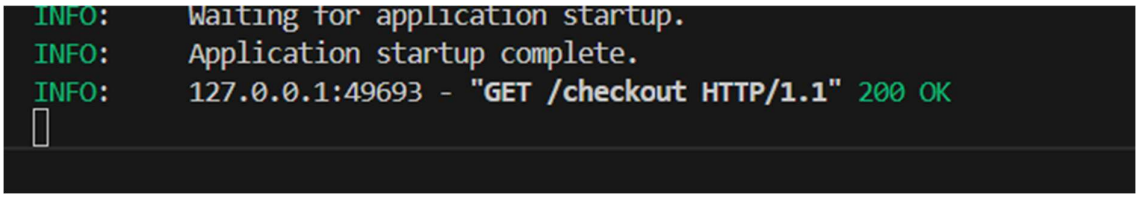
SS2


CC
Fest Monolith
FastAPI • SQLite • Locust
Login
Create Account
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

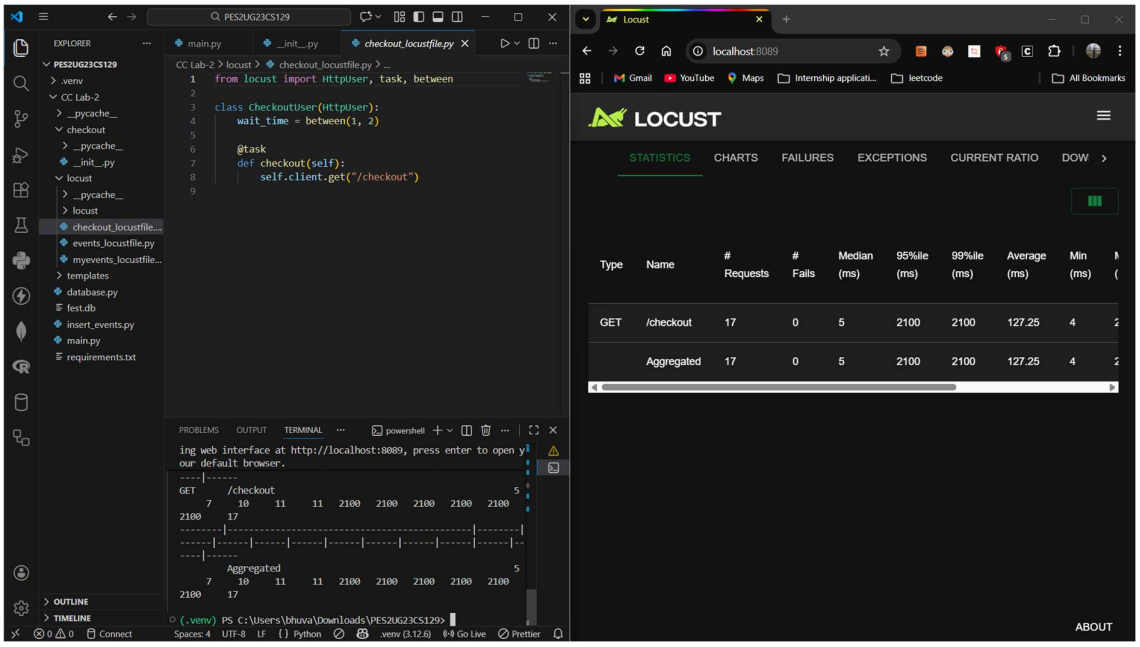

INFO: Started server process [2444]
INFO: Waiting for application startup.
INFO: Application startup complete.
INFO: 127.0.0.1:58039 - "GET /checkout HTTP/1.1" 500 Internal Server Error
ERROR: Exception in ASGI application
Traceback (most recent call last):

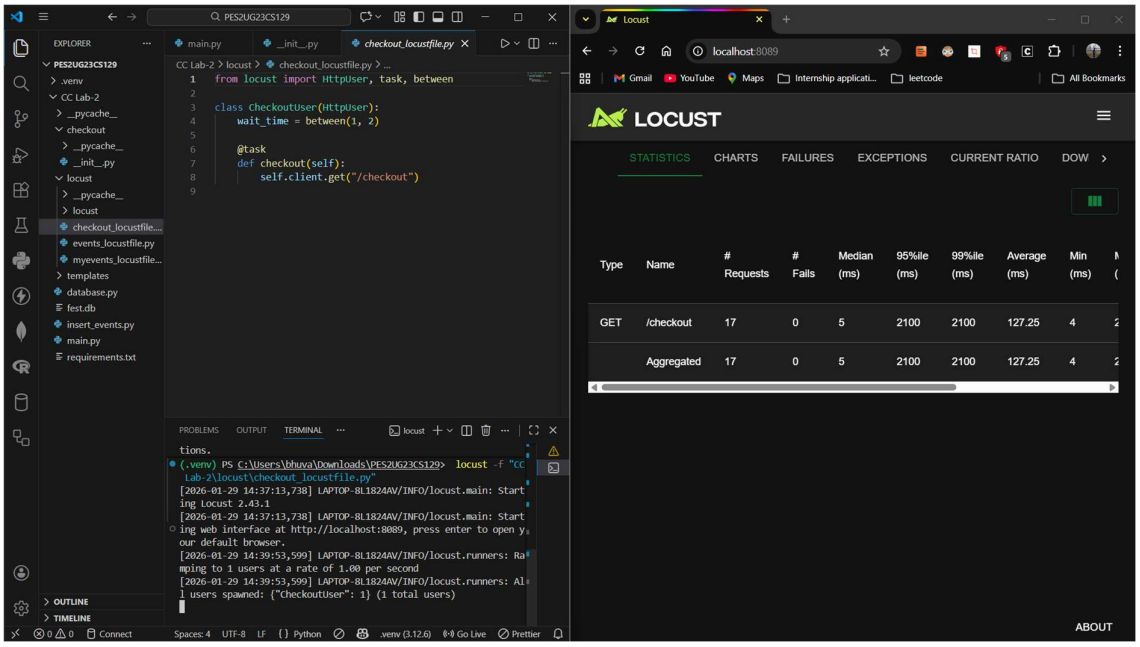
SS3


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

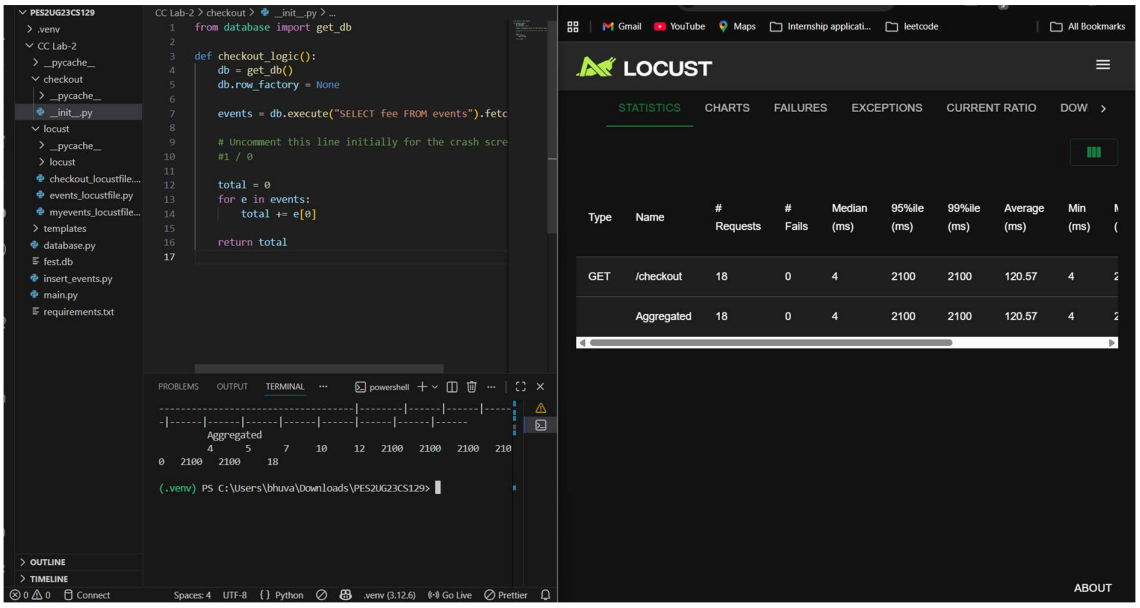

INFO: Waiting for application startup.
INFO: Application startup complete.
INFO: 127.0.0.1:49693 - "GET /checkout HTTP/1.1" 200 OK

SS4

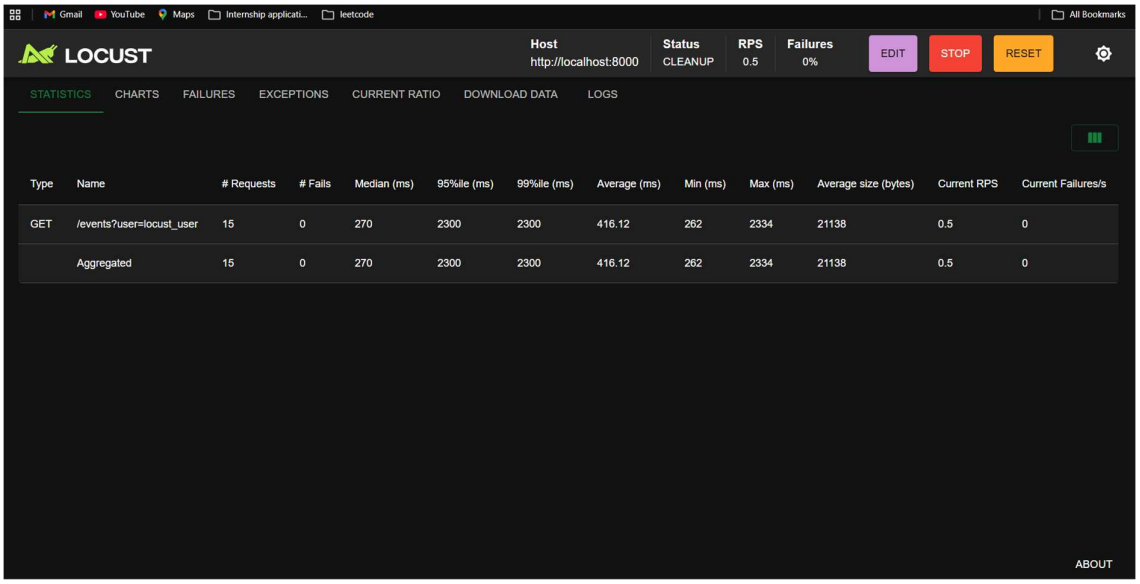

PES2UG23CS129
EXPLORER
main.py
__init__.py
checkout_locustfile.py
from locust import HttpUser, task, between
class CheckoutUser(HttpUser):
wait_time = between(1, 2)
@task
def checkout(self):
self.client.get("/checkout")
TERMINAL
ing web interface at http://localhost:8089, press enter to open your default browser.
GET /checkout 17 0 5 2100 2100 127.25 4
Aggregated 17 0 5 2100 2100 127.25 4
Locust
localhost:8089
LOCUST
STATISTICS
CHARTS
FAILURES
EXCEPTIONS
CURRENT RATIO
Type
Name
Requests
Fails
Median (ms)
95%ile (ms)
99%ile (ms)
Average (ms)
Min (ms)
GET
/checkout
17
0
5
2100
2100
127.25
4
Aggregated
17
0
5
2100
2100
127.25
4
ABOUT


PES2UG23CS129
EXPLORER
main.py
__init__.py
checkout_locustfile.py
CC Lab-2 > locust > checkout_locustfile.py > ...
from locust import HttpUser, task, between
class CheckoutUser(HttpUser):
wait_time = between(1, 2)
@task
def checkout(self):
self.client.get("/checkout")
PROBLEMS
OUTPUT
TERMINAL
(.venv) PS C:\Users\bhuva\Downloads\PES2UG23CS129> locust -f "CC Lab-2\locust\checkout_locustfile.py"
[2026-01-29 14:37:13,738] LAPTOP-8L1824AV/INFO/locust.main: Starting Locust 2.43.1
[2026-01-29 14:37:13,738] LAPTOP-8L1824AV/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-29 14:39:53,599] LAPTOP-8L1824AV/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-29 14:39:53,599] LAPTOP-8L1824AV/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
Locust
localhost:8089
LOCUST
STATISTICS
CHARTS
FAILURES
EXCEPTIONS
CURRENT RATIO
Type
Name
Requests
Fails
Median (ms)
95%ile (ms)
99%ile (ms)
Average (ms)
Min (ms)
GET
/checkout
17
0
5
2100
2100
127.25
4
Aggregated
17
0
5
2100
2100
127.25
4
ABOUT

SS5

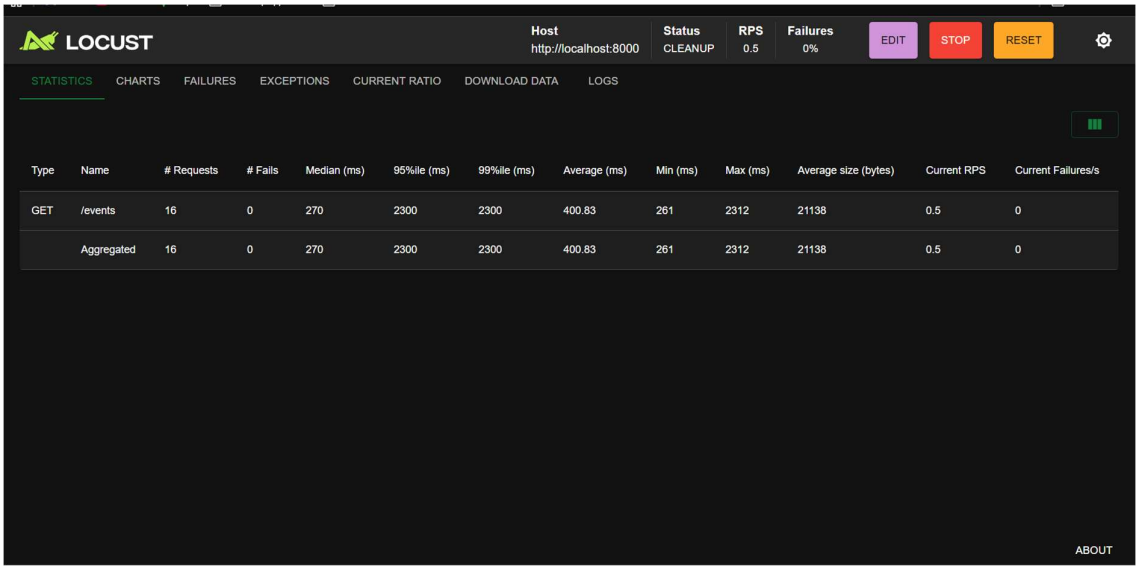

PES2UG23CS129
CC Lab-2 > checkout > __init__.py > ...
from database import get_db
def checkout_logic():
db = get_db()
db.row_factory = None
events = db.execute("SELECT fee FROM events").fetc
# Uncomment this line initially for the crash scre
#1 / 0
total = 0
for e in events:
total += e[0]
return total
PROBLEMS
OUTPUT
TERMINAL
powershell
Aggregated
4 5 7 10 12 2100 2100 2100 210
0 2100 2100 18
(.venv) PS C:\Users\bhuva\Downloads\PES2UG23CS129>
LOCUST
STATISTICS
CHARTS
FAILURES
EXCEPTIONS
CURRENT RATIO
Type
Name
Requests
Fails
Median (ms)
95%ile (ms)
99%ile (ms)
Average (ms)
Min (ms)
GET
/checkout
18
0
4
2100
2100
120.57
4
Aggregated
18
0
4
2100
2100
120.57
4
ABOUT

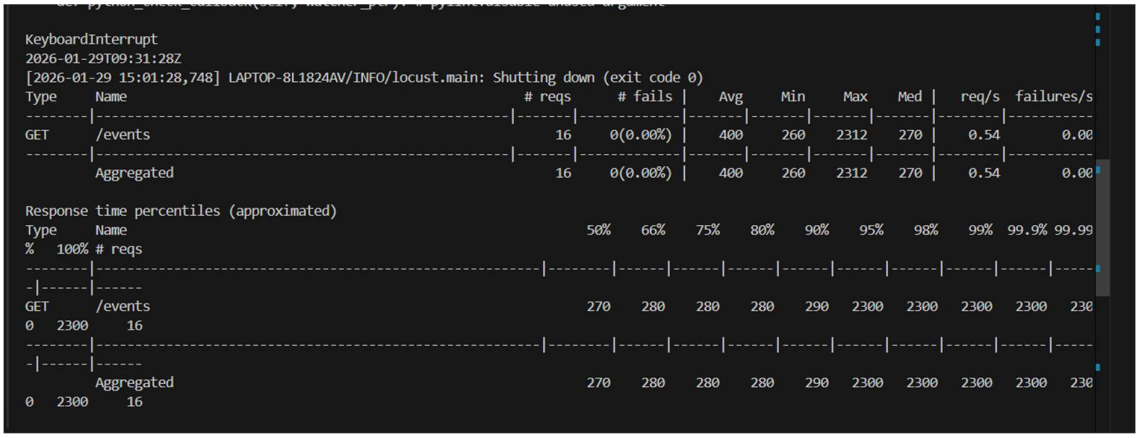
SS6



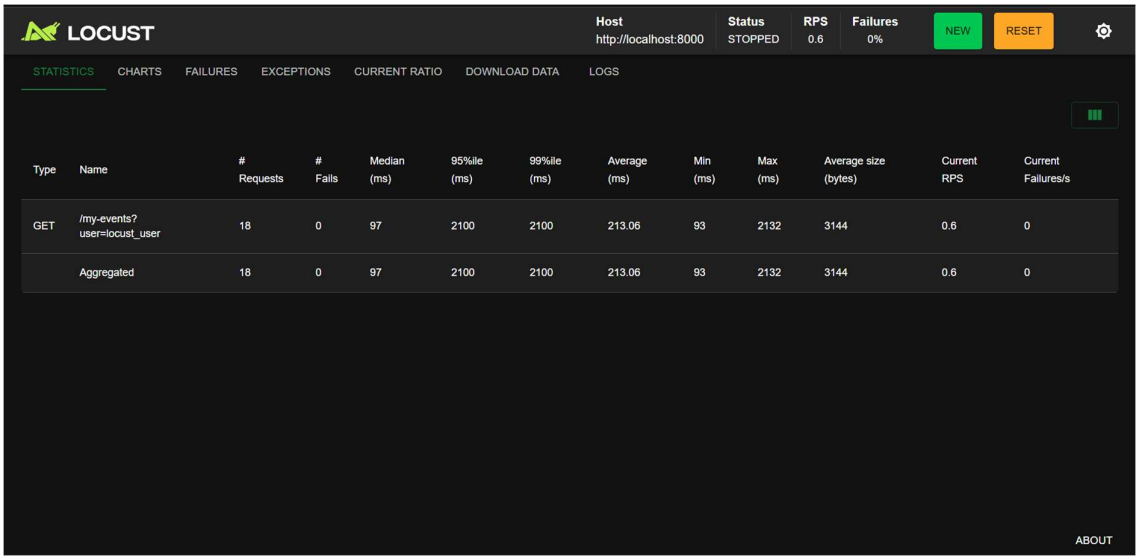

```
KeyboardInterrupt
2026-01-29T09:29:59Z
[2026-01-29 14:59:59,311] LAPTOP-8L1824AV/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                                                          # reqs      # fails |    Avg     Min     Max    Me
d |   req/s  failures/s
--------|-----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-----
--|--------|-----------
GET      /events?user=locust_user                                                          11     0(0.00%) |    454     257    2321    27
0 |    0.50        0.00
--------|-----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-----
--|--------|-----------
         Aggregated                                                                        11     0(0.00%) |    454     257    2321    27
0 |    0.50        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                                                          270    270    280    280    280   2300   2
300   2300   2300   2300   2300     11
--------|-----------------------------------------------------------------------------|--------|------|------|------|------|------|---
---|------|------|------|------|------
         Aggregated                                                                        270    270    280    280    280   2300   2
300   2300   2300   2300   2300     11

(.venv) PS C:\Users\bhuva\Downloads\PES2UG23CS129>  locust -f "CC Lab-2\locust\events_locustfile.py"
```

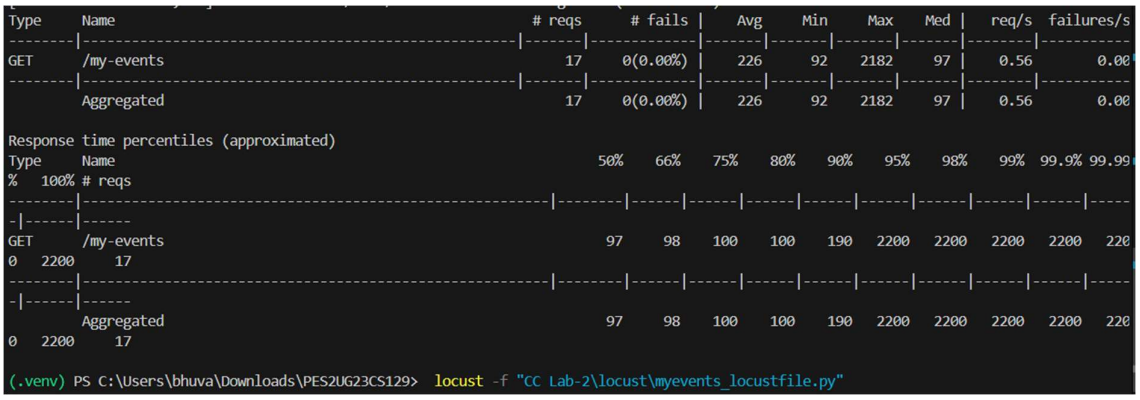
SS7


LOCUST
Host
http://localhost:8000
Status
CLEANUP
RPS
0.5
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 /events 16 0 270 2300 2300 400.83 261 2312 21138 0.5 0
Aggregated 16 0 270 2300 2300 400.83 261 2312 21138 0.5 0
ABOUT

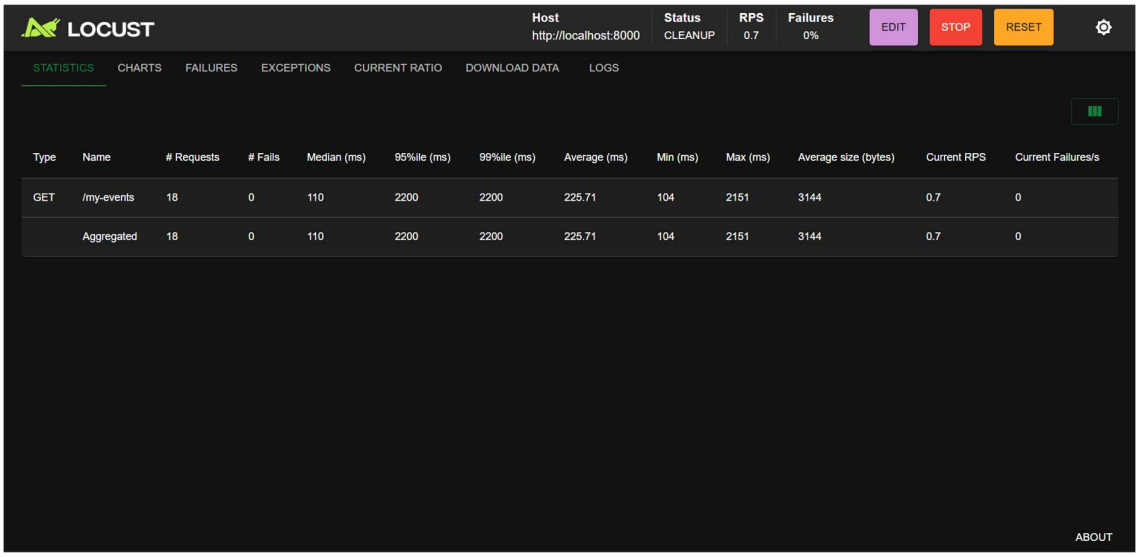

KeyboardInterrupt
2026-01-29T09:31:28Z
[2026-01-29 15:01:28,748] LAPTOP-8L1824AV/INFO/locust.main: Shutting down (exit code 0)
Type Name # reqs # fails | Avg Min Max Med | req/s failures/s
GET /events 16 0(0.00%) | 400 260 2312 270 | 0.54 0.00
Aggregated 16 0(0.00%) | 400 260 2312 270 | 0.54 0.00
Response time percentiles (approximated)
Type Name 50% 66% 75% 80% 90% 95% 98% 99% 99.9% 99.99
% 100% # reqs
GET /events 270 280 280 280 290 2300 2300 2300 2300 230
0 2300 16
Aggregated 270 280 280 280 290 2300 2300 2300 2300 230
0 2300 16

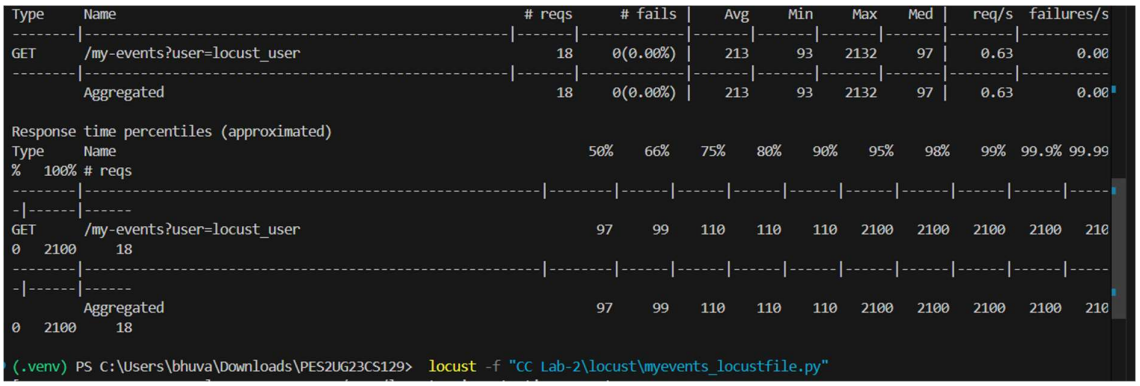
SS8


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
/my-events?user=locust_user
18
0
97
2100
2100
213.06
93
2132
3144
0.6
0
Aggregated
18
0
97
2100
2100
213.06
93
2132
3144
0.6
0
ABOUT


Type Name # reqs # fails | Avg Min Max Med | req/s failures/s
GET /my-events 17 0(0.00%) | 226 92 2182 97 | 0.56 0.00
Aggregated 17 0(0.00%) | 226 92 2182 97 | 0.56 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 97 98 100 100 190 2200 2200 2200 2200 2200 2200 17
Aggregated 97 98 100 100 190 2200 2200 2200 2200 2200 2200 17
(.venv) PS C:\Users\bhuva\Downloads\PES2UG23CS129> locust -f "CC Lab-2\locust\myevents_locustfile.py"

SS9


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
Current Failures/s
GET
/my-events
18
0
110
2200
2200
225.71
104
2151
3144
0.7
0
Aggregated
18
0
110
2200
2200
225.71
104
2151
3144
0.7
0
ABOUT



```
Type     Name                                                          # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|-------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /my-events?user=locust_user                                      18     0(0.00%) |    213      93    2132     97 |    0.63        0.00
--------|-------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                                                       18     0(0.00%) |    213      93    2132     97 |    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      /my-events?user=locust_user                                         97     99    110    110    110   2100   2100   2100   2100   210
0   2100     18
--------|-------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                                          97     99    110    110    110   2100   2100   2100   2100   210
0   2100     18

(.venv) PS C:\Users\bhuva\Downloads\PES2UG23CS129>  locust -f "CC Lab-2\locust\myevents_locustfile.py"
```

Route: /events
Bottleneck:
Failures were not properly captured, which resulted in misleading success metrics and made it harder to understand how the system behaved under load.

Change Made:
Enabled catch_response=True and added status code checks to explicitly mark failed requests. Also grouped requests to organize the metrics better.

Why Performance Improved:
By correctly identifying failures and grouping requests, the test results became more accurate and easier to interpret, allowing better analysis of response times and system behavior.

Route: /my-events

Bottleneck:
The route did not explicitly verify responses, which could allow failed requests to go unnoticed and produce inaccurate performance statistics when multiple users accessed the system simultaneously.

Change Made:
Enabled catch_response=True and added structured request naming to properly capture failures and organize performance data.

Why Performance Improved:
With clear failure detection and better-organized metrics, the system's behavior became easier to analyze, leading to more reliable and accurate performance evaluation.