# Cloud Computing Week 2 Monolith

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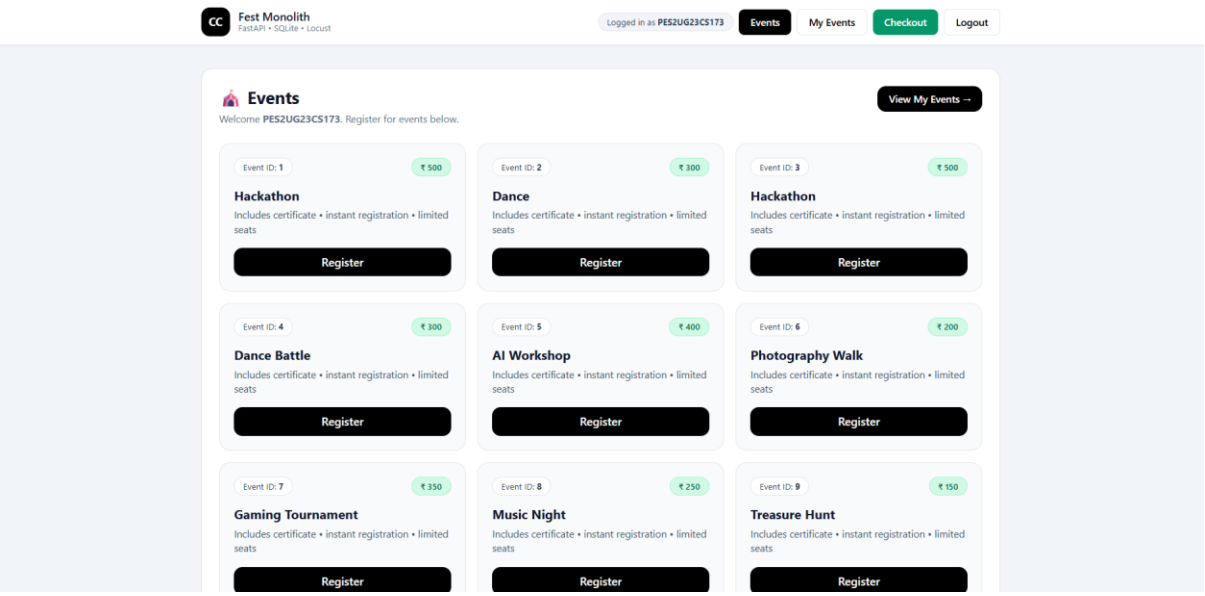
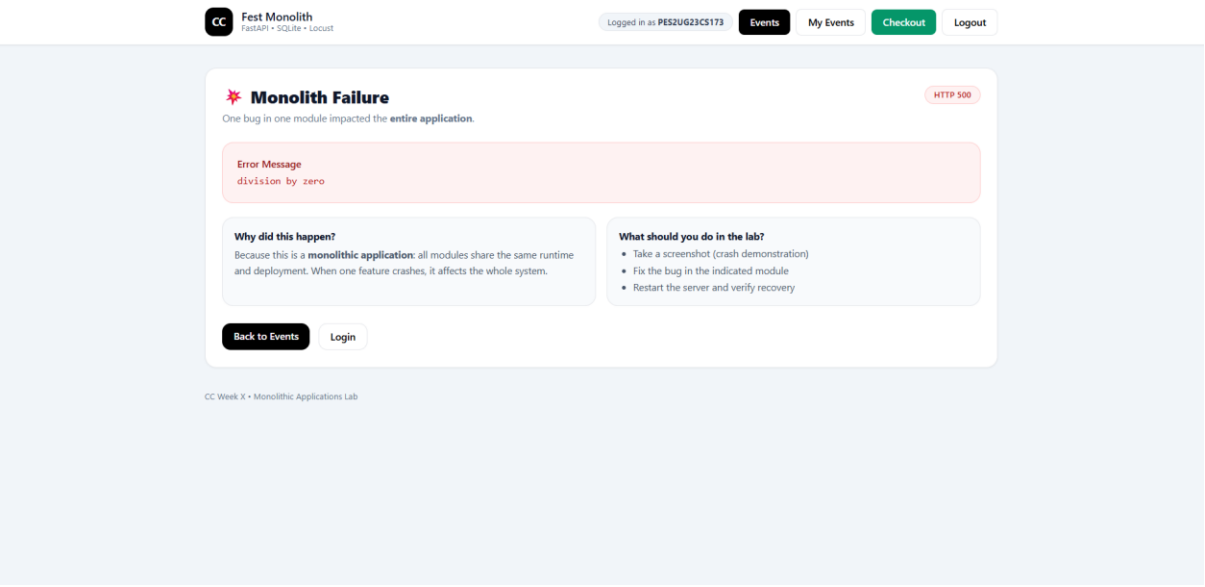
Submission Link: https://github.com/pes2ug23cs173/CC_Labs_PES2UG23CS173

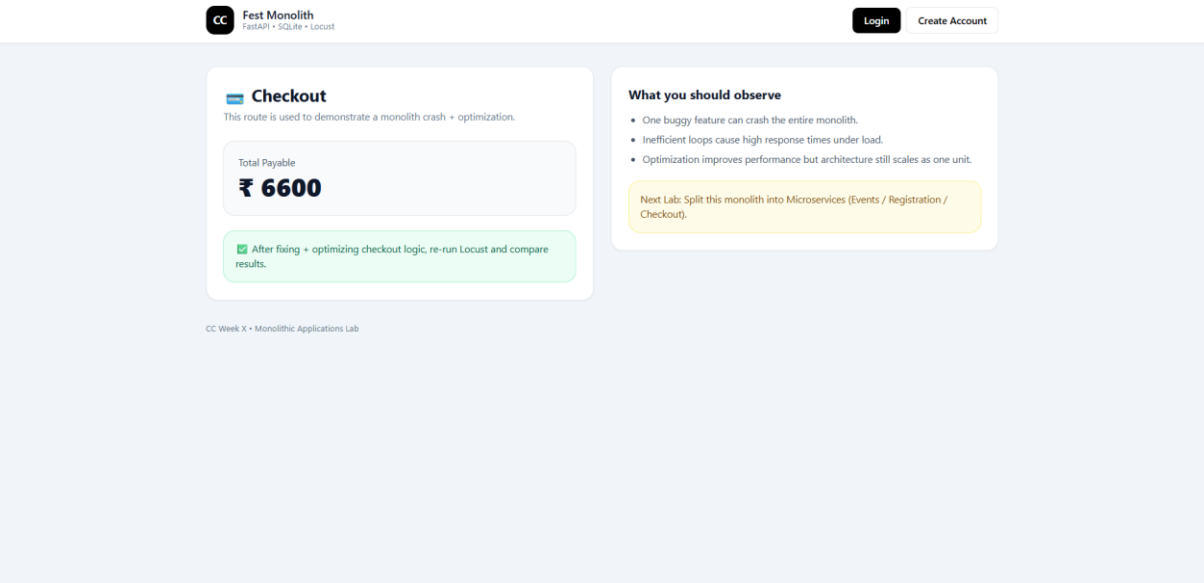
SS1



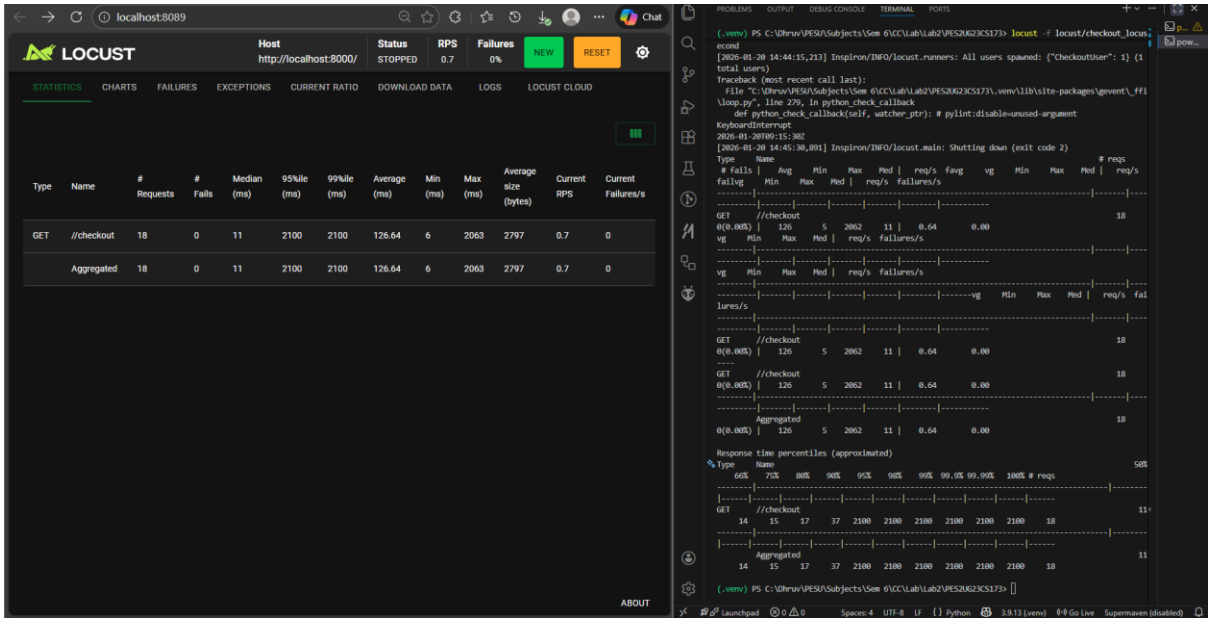

SS2



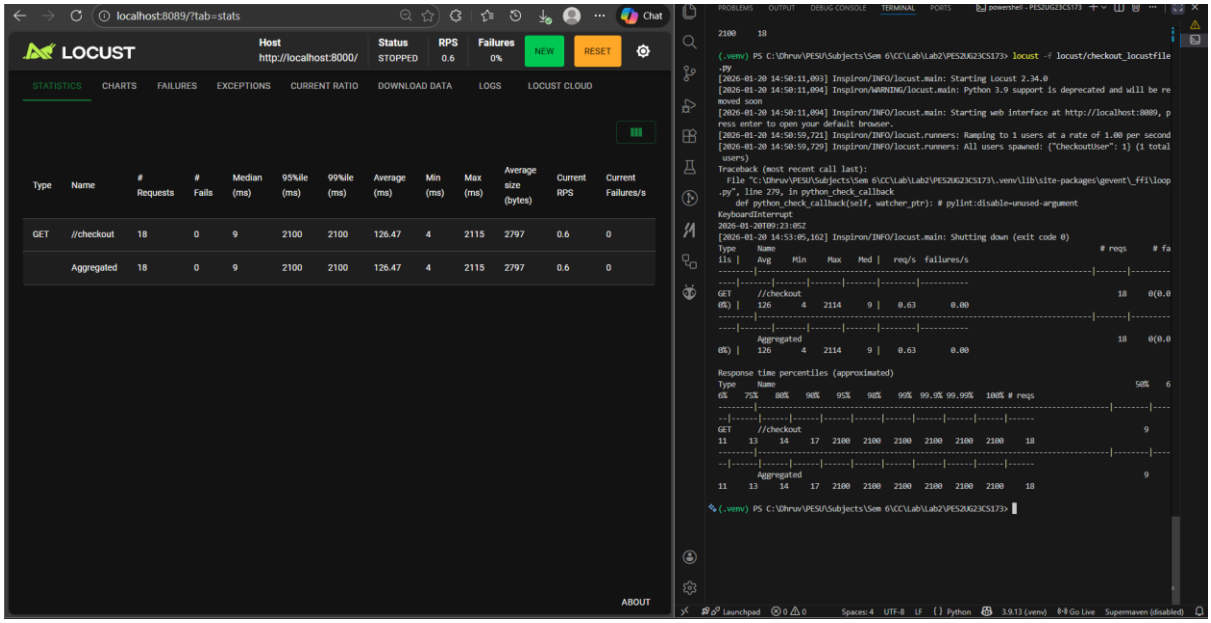
SS3


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

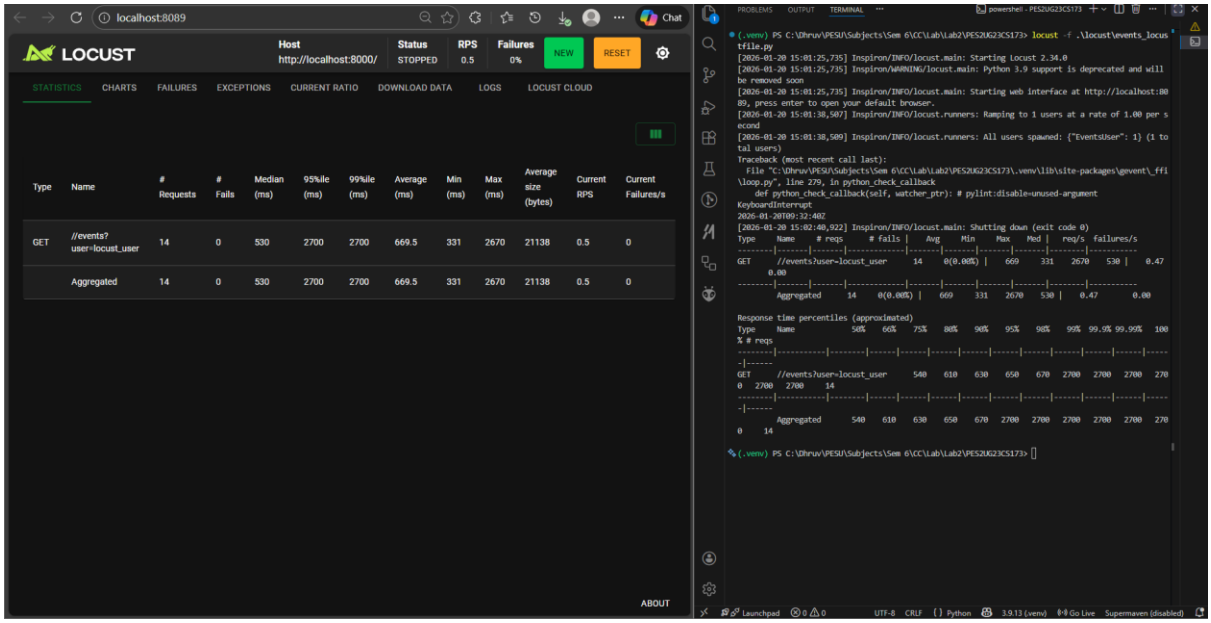
SS4


localhost:8089
LOCUST
Host
http://localhost:8000/
Status
STOPPED
RPS
0.7
Failures
0%
NEW
RESET
STATISTICS
CHARTS
FAILURES
EXCEPTIONS
CURRENT RATIO
DOWNLOAD DATA
LOGS
LOCUST CLOUD
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
18
0
11
2100
2100
126.64
6
2063
2797
0.7
0
Aggregated
18
0
11
2100
2100
126.64
6
2063
2797
0.7
0
ABOUT
(.venv) PS C:\Dhruv\PESU\Subjects\Sem 6\CC\Lab\Lab2\PES2UG23CS173> locust -f locust/checkout_locus
[2026-01-20 14:44:15,213] Inspiron/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1
total users)
Traceback (most recent call last):
KeyboardInterrupt
2026-01-20T09:15:30Z
[2026-01-20 14:45:30,891] Inspiron/INFO/locust.main: Shutting down (exit code 2)
Response time percentiles (approximated)
(.venv) PS C:\Dhruv\PESU\Subjects\Sem 6\CC\Lab\Lab2\PES2UG23CS173>

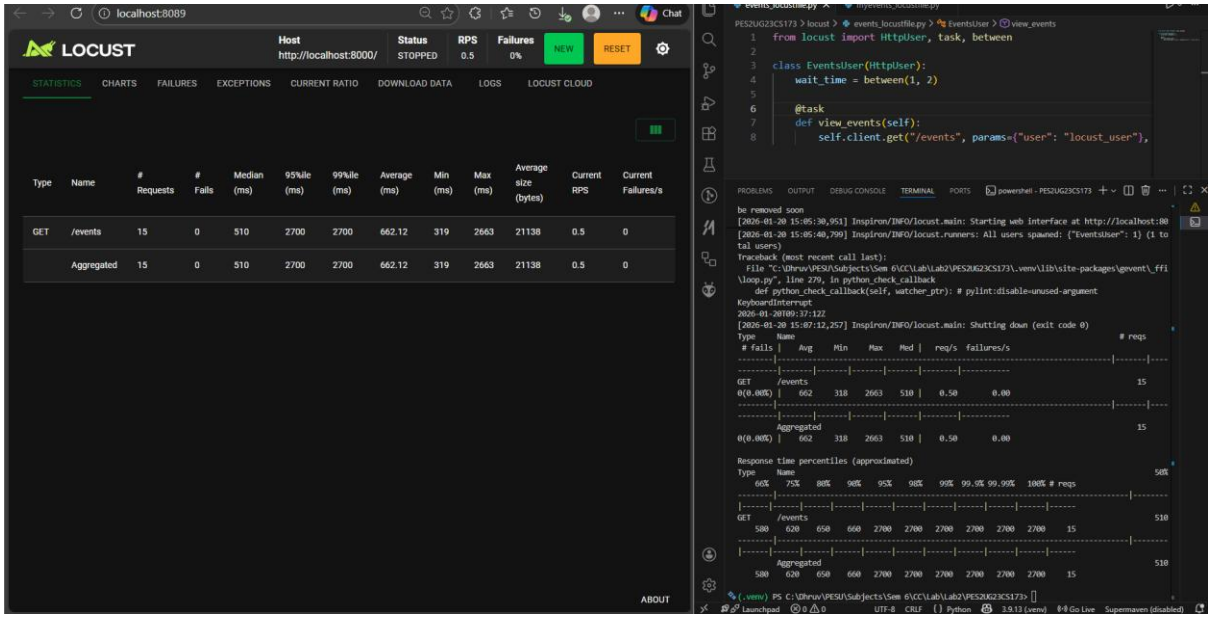
SS5


localhost:8089/?tab=stats
LOCUST
Host
http://localhost:8000/
Status
STOPPED
RPS
0.6
Failures
0%
NEW
RESET
STATISTICS
CHARTS
FAILURES
EXCEPTIONS
CURRENT RATIO
DOWNLOAD DATA
LOGS
LOCUST CLOUD
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
18
0
9
2100
2100
126.47
4
2115
2797
0.6
0
Aggregated
18
0
9
2100
2100
126.47
4
2115
2797
0.6
0
ABOUT
(.venv) PS C:\Dhruv\PESU\Subjects\Sem 6\CC\Lab\Lab2\PES2UG23CS173> locust -f locust/checkout_locustfile.py
[2026-01-20 14:50:11,093] Inspiron/INFO/locust.main: Starting Locust 2.34.0
[2026-01-20 14:50:11,094] Inspiron/WARNING/locust.main: Python 3.9 support is deprecated and will be removed soon
[2026-01-20 14:50:11,094] Inspiron/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-20 14:50:59,721] Inspiron/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 14:50:59,729] Inspiron/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
Traceback (most recent call last):
File "C:\Dhruv\PESU\Subjects\Sem 6\CC\Lab\Lab2\PES2UG23CS173\.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
2026-01-20T09:23:05Z
[2026-01-20 14:53:05,162] Inspiron/INFO/locust.main: Shutting down (exit code 0)
Response time percentiles (approximated)
(.venv) PS C:\Dhruv\PESU\Subjects\Sem 6\CC\Lab\Lab2\PES2UG23CS173>

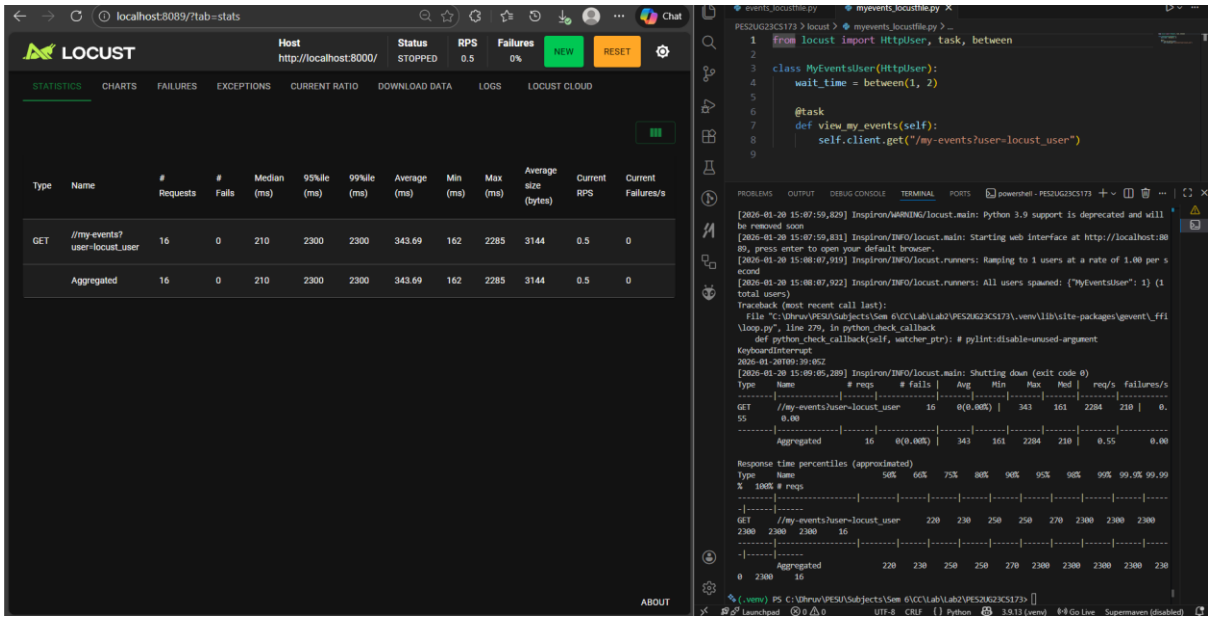
SS6


localhost:8089
LOCUST
Host
http://localhost:8000/
Status
STOPPED
RPS
0.5
Failures
0%
NEW
RESET
STATISTICS
CHARTS
FAILURES
EXCEPTIONS
CURRENT RATIO
DOWNLOAD DATA
LOGS
LOCUST CLOUD
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
14
0
530
2700
2700
669.5
331
2670
21138
0.5
0
Aggregated
14
0
530
2700
2700
669.5
331
2670
21138
0.5
0
ABOUT
(.venv) PS C:\Dhruv\PESU\Subjects\Sem 6\CC\Lab\Lab2\PES2UG23CS173> locust -f .\locust\events_locustfile.py
[2026-01-20 15:01:25,735] Inspiron/INFO/locust.main: Starting Locust 2.34.0
[2026-01-20 15:01:25,735] Inspiron/WARNING/locust.main: Python 3.9 support is deprecated and will be removed soon
[2026-01-20 15:01:25,735] Inspiron/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-20 15:01:38,507] Inspiron/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 15:01:38,509] Inspiron/INFO/locust.runners: All users spawned: {"EventsUser": 1} (1 total users)
Traceback (most recent call last):
File "C:\Dhruv\PESU\Subjects\Sem 6\CC\Lab\Lab2\PES2UG23CS173\.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
2026-01-20T09:32:40Z
[2026-01-20 15:02:40,922] Inspiron/INFO/locust.main: Shutting down (exit code 0)
Response time percentiles (approximated)
(.venv) PS C:\Dhruv\PESU\Subjects\Sem 6\CC\Lab\Lab2\PES2UG23CS173>

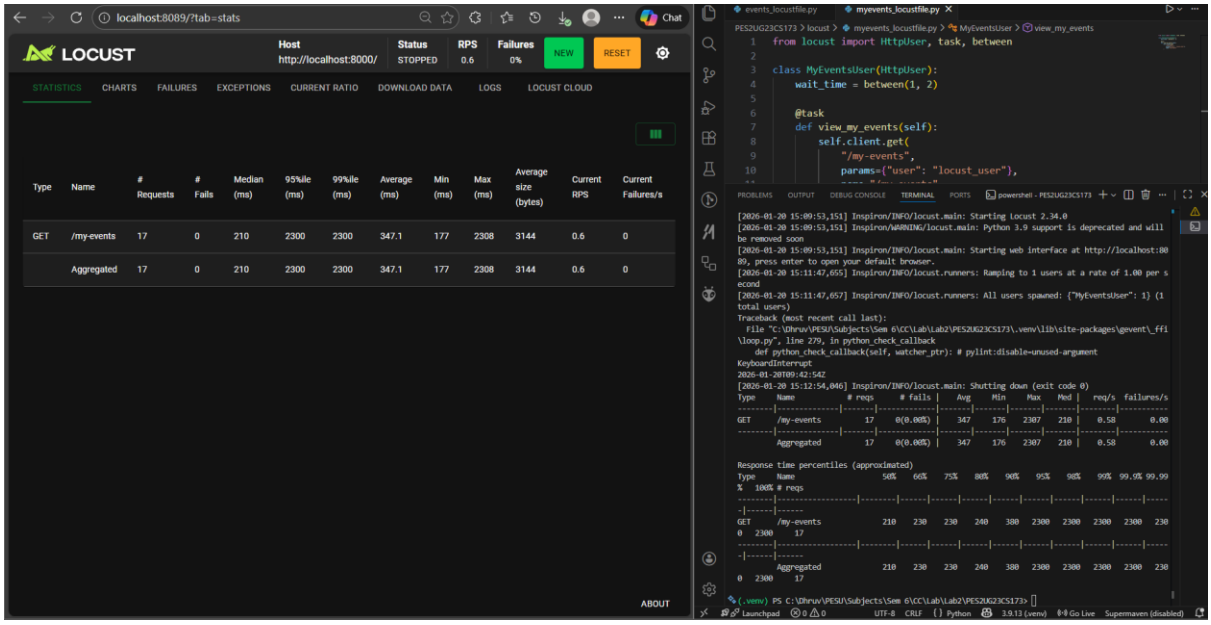
SS7


localhost:8089
LOCUST
Host
http://localhost:8000/
Status
STOPPED
RPS
0.5
Failures
0%
NEW
RESET
STATISTICS
CHARTS
FAILURES
EXCEPTIONS
CURRENT RATIO
DOWNLOAD DATA
LOGS
LOCUST CLOUD
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
15
0
510
2700
2700
662.12
319
2663
21138
0.5
0
Aggregated
15
0
510
2700
2700
662.12
319
2663
21138
0.5
0
ABOUT
from locust import HttpUser, task, between
class EventsUser(HttpUser):
wait_time = between(1, 2)
@task
def view_events(self):
self.client.get("/events", params={"user": "locust_user"},
[2026-01-20 15:05:30,951] Inspiron/INFO/locust.main: Starting web interface at http://localhost:80
[2026-01-20 15:05:40,799] Inspiron/INFO/locust.runners: All users spawned: {"EventsUser": 1} (1 to
tal users)
KeyboardInterrupt
[2026-01-20 15:07:12,257] Inspiron/INFO/locust.main: Shutting down (exit code 0)
GET /events 15
0(0.00%) | 662 318 2663 510 | 0.50 0.00
Aggregated 15
0(0.00%) | 662 318 2663 510 | 0.50 0.00
Response time percentiles (approximated)
GET /events 510
510
Aggregated 510
510

SS8


localhost:8089/?tab=stats
LOCUST
Host
http://localhost:8000/
Status
STOPPED
RPS
0.5
Failures
0%
NEW
RESET
STATISTICS
CHARTS
FAILURES
EXCEPTIONS
CURRENT RATIO
DOWNLOAD DATA
LOGS
LOCUST CLOUD
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
16
0
210
2300
2300
343.69
162
2285
3144
0.5
0
Aggregated
16
0
210
2300
2300
343.69
162
2285
3144
0.5
0
ABOUT
from locust import HttpUser, task, between
class MyEventsUser(HttpUser):
wait_time = between(1, 2)
@task
def view_my_events(self):
self.client.get("/my-events?user=locust_user")
[2026-01-20 15:07:59,829] Inspiron/WARNING/locust.main: Python 3.9 support is deprecated and will
be removed soon
[2026-01-20 15:07:59,831] Inspiron/INFO/locust.main: Starting web interface at http://localhost:80
[2026-01-20 15:08:07,919] Inspiron/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per s
econd
[2026-01-20 15:08:07,922] Inspiron/INFO/locust.runners: All users spawned: {"MyEventsUser": 1} (1
total users)
KeyboardInterrupt
[2026-01-20 15:09:05,289] Inspiron/INFO/locust.main: Shutting down (exit code 0)
GET //my-events?user=locust_user 16 0(0.00%) | 343 161 2284 210 | 0.
55 0.00
Aggregated 16 0(0.00%) | 343 161 2284 210 | 0.55 0.00
Response time percentiles (approximated)
GET //my-events?user=locust_user 220 230 250 250 270 2300 2300 2300
2300 2300 2300 16
Aggregated 220 230 250 250 270 2300 2300 2300 2300 230
0 2300 16

SS9

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**Writeup**

1. Events:
    a. **Bottleneck**: Locust logged each request separately due to individual query strings, preventing data aggregation.
    b. **Change Made**: Refactored the request to pass values as parameters, ensuring a single unified endpoint name in the report.
    c. **Performance Improvement**: Correct grouping in Locust provided clearer, more accurate metrics and reduced reporting clutter.

2. MyEvents:
    a. **Bottleneck**: Hardcoded URLs created unnecessary overhead and inconsistent reporting in the load testing tool.
    b. **Change Made**: Replaced hardcoded URL strings with parameterized requests.
    c. **Performance Improvement**: Reduced client-side processing overhead, resulting in more stable and consistent performance data.