CLOUD COMPUTING

LAB – 2: MONOLITHIC ARCHITECTURE

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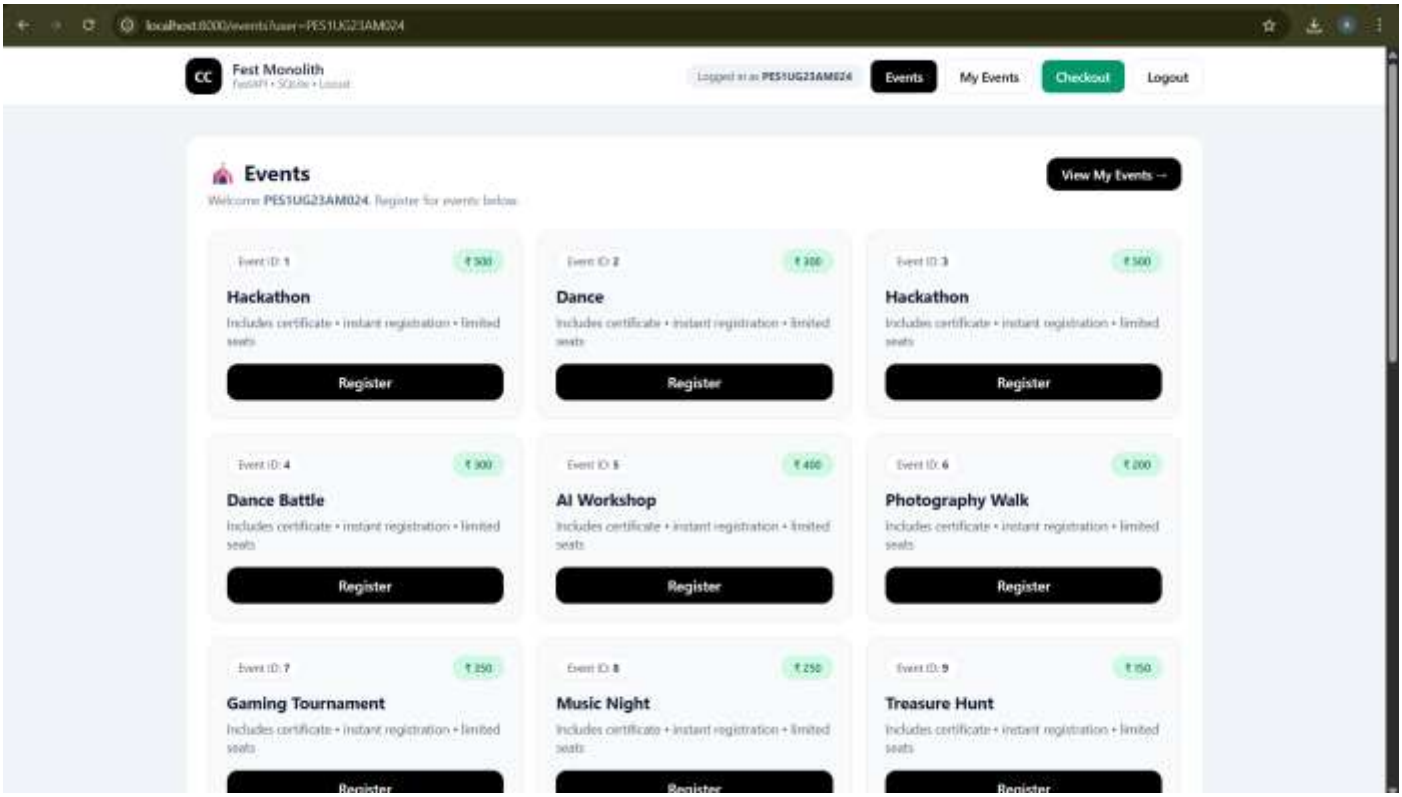
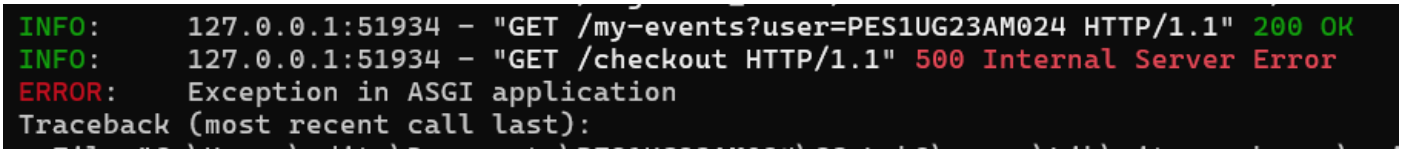
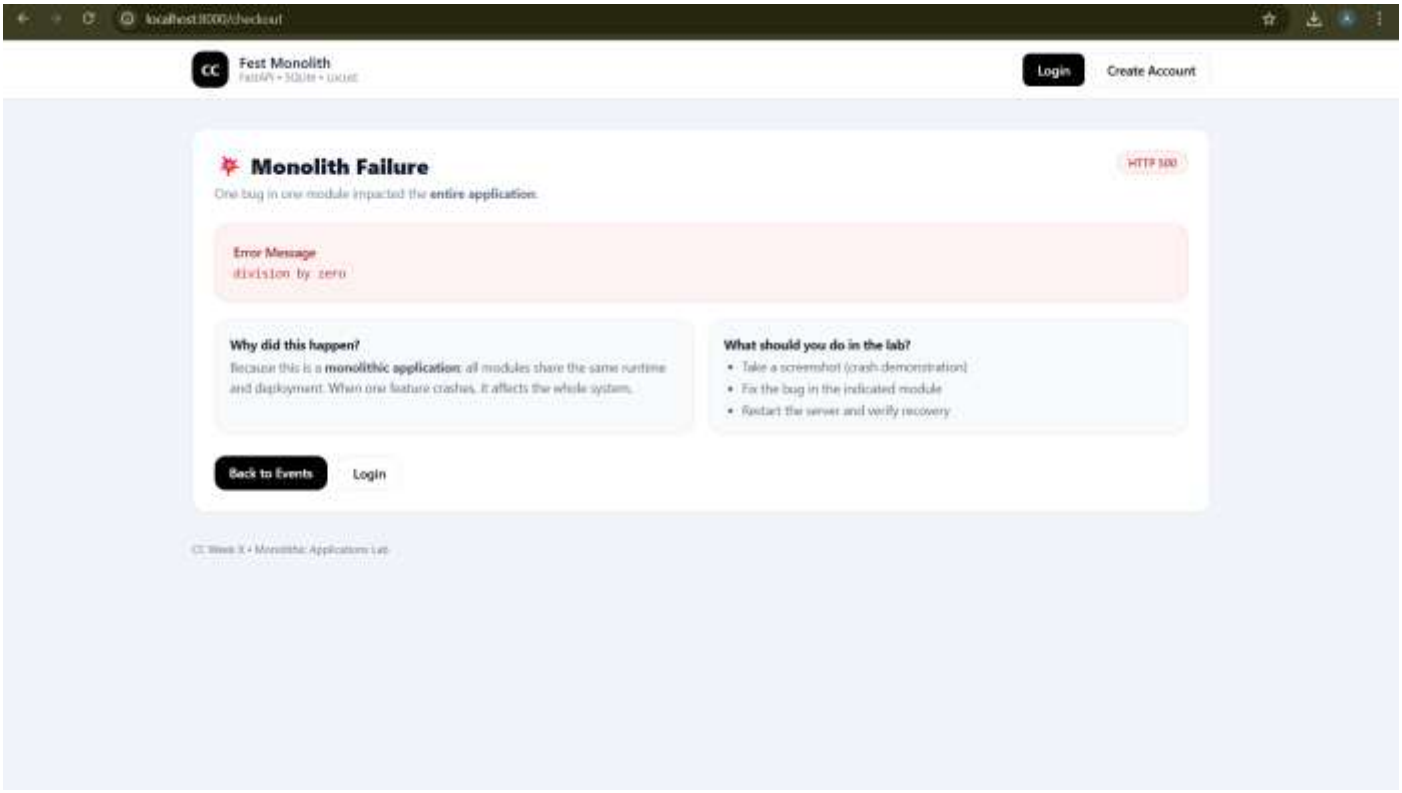
SCREENSHOT – 1: EVENTS PAGE LOADED

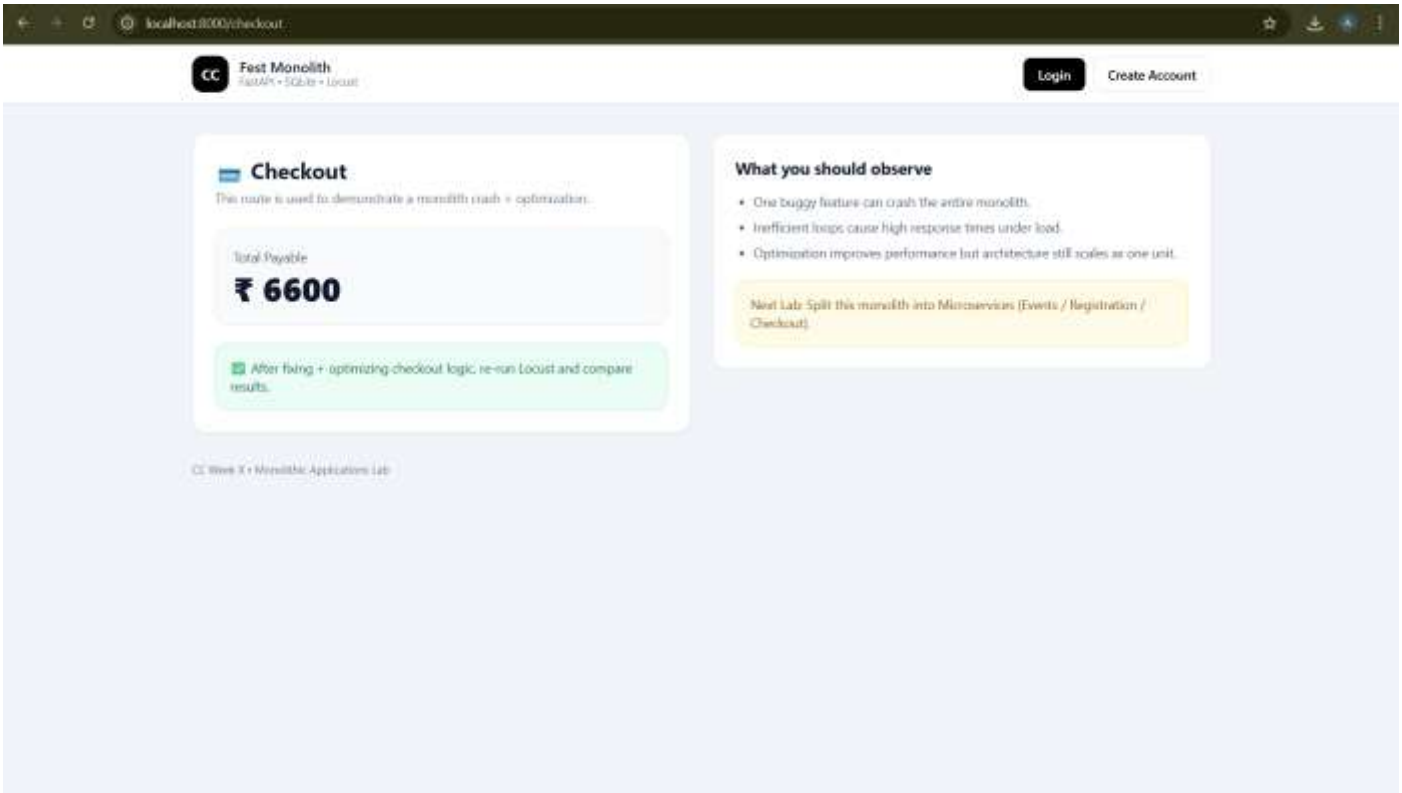


SCREENSHOT – 2: MONOLITH FAILURE

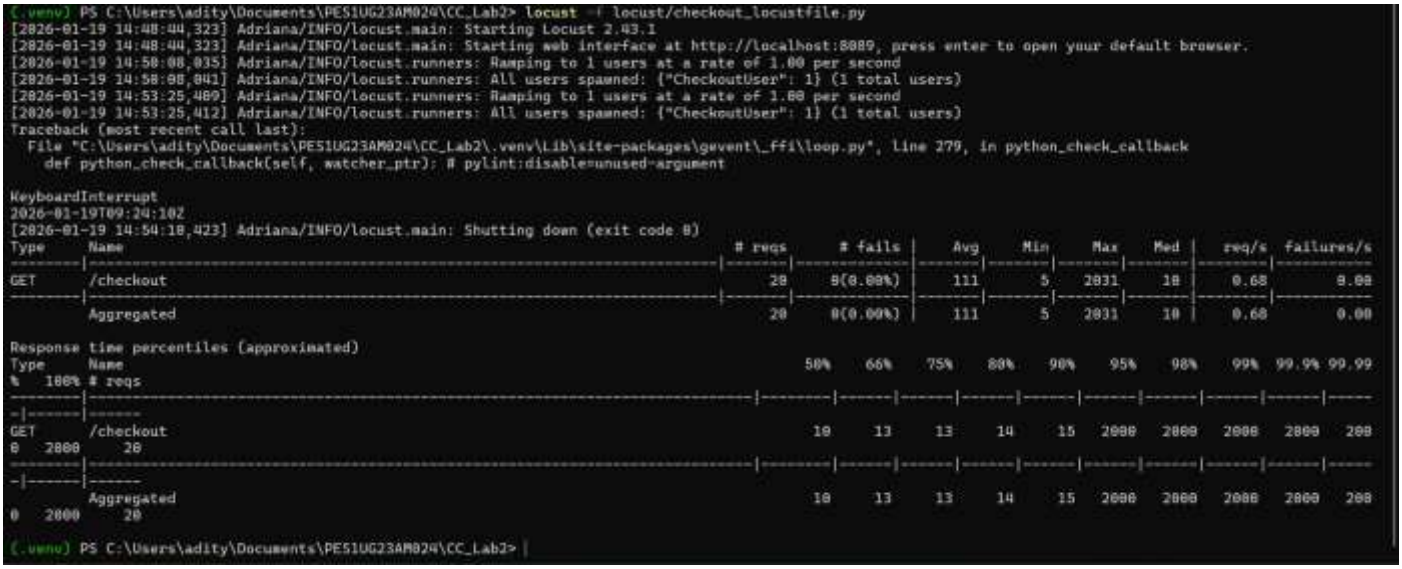




SCREENSHOT – 3: FIXED PAGE

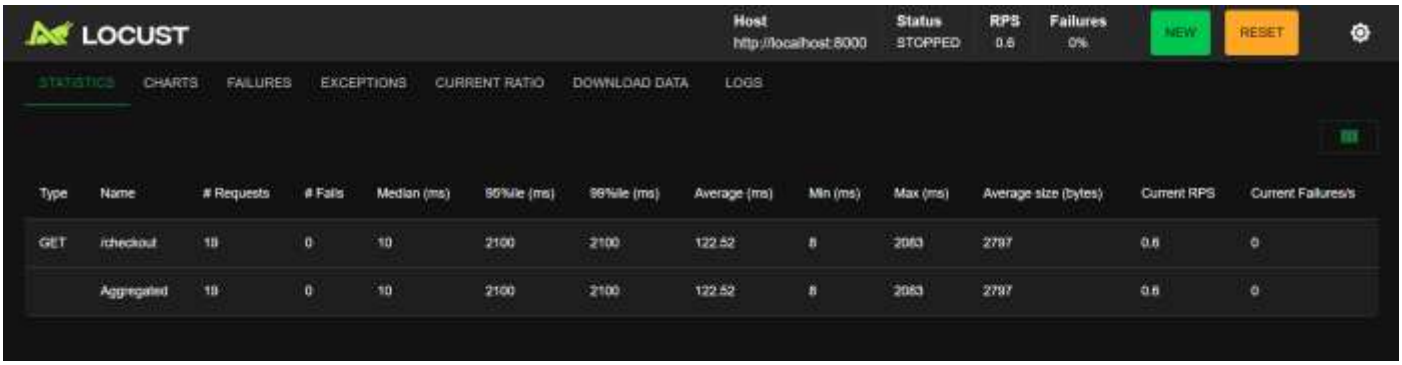


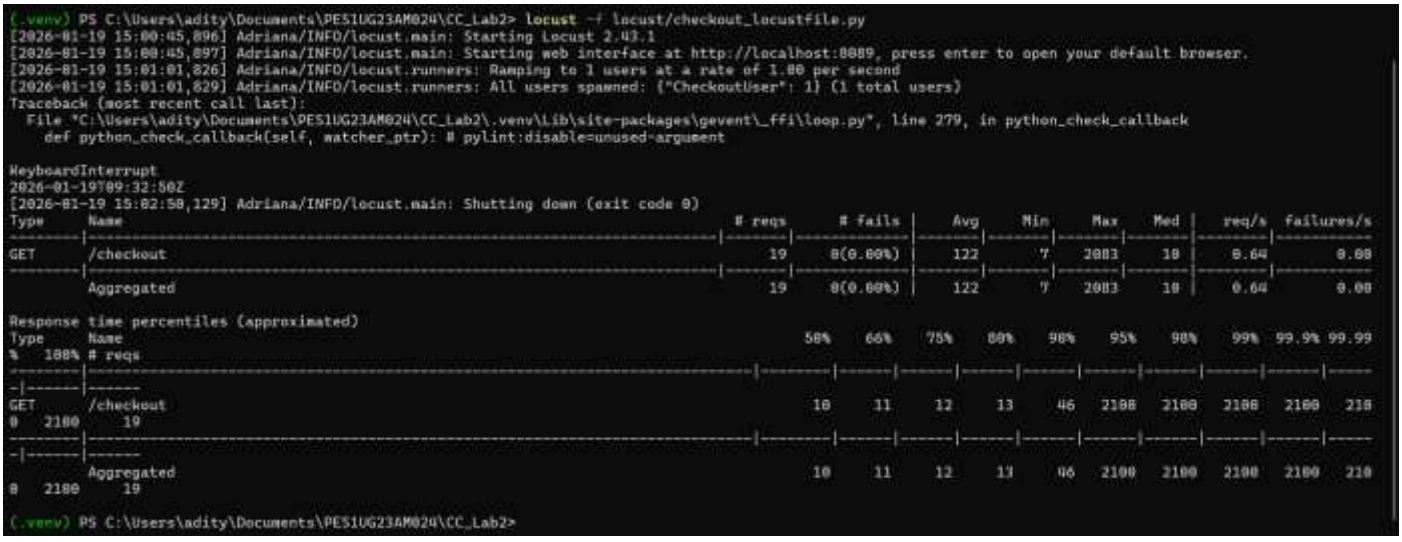
SCREENSHOT – 4: LOCUST DASHBOARD AND TERMINAL



```
(.venv) PS C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2> locust -f locust/checkout_locustfile.py
[2026-01-19 14:48:44,323] Adriana/INFO/locust.main: Starting Locust 2.43.1
[2026-01-19 14:48:44,323] Adriana/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-19 14:50:08,035] Adriana/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-19 14:50:08,041] Adriana/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
[2026-01-19 14:53:25,400] Adriana/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-19 14:53:25,412] Adriana/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2\.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
2026-01-19T09:24:10Z
[2026-01-19 14:54:10,423] Adriana/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                                                          # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /checkout                                                                        20     0(0.00%) |    111       5    2831     10 |    0.68        0.00
--------|----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                                                                       20     0(0.00%) |    111       5    2831     10 |    0.68        0.00

Response time percentiles (approximated)
Type     Name                                                                             50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
% 100% # reqs
--------|----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /checkout                                                                        10     13     13     14     15   2000   2000   2000   2000   200
0   2000     20
--------|----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                                                       10     13     13     14     15   2000   2000   2000   2000   200
0   2000     20

(.venv) PS C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2>
```

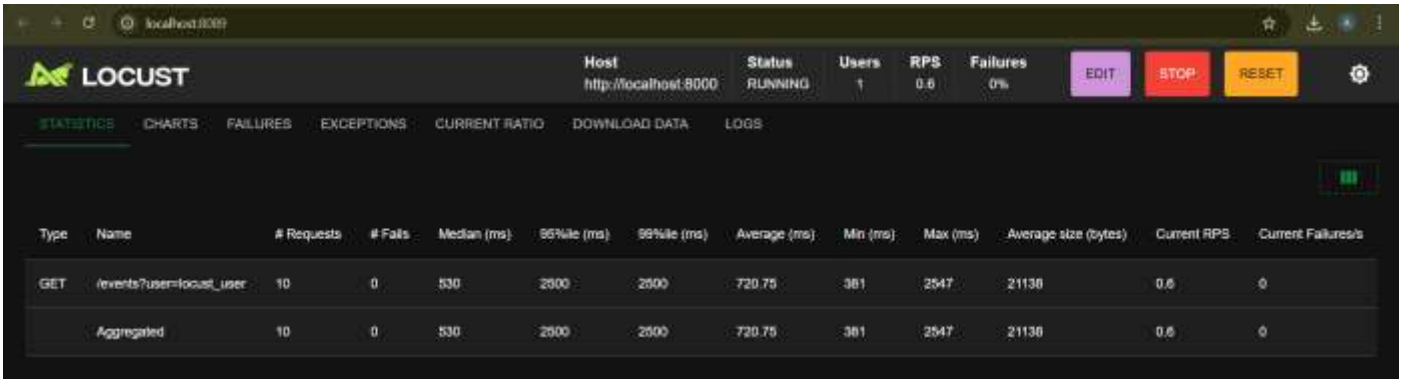
SCREENSHOT – 5: DASHBOARD AFTER CODE UPDATE





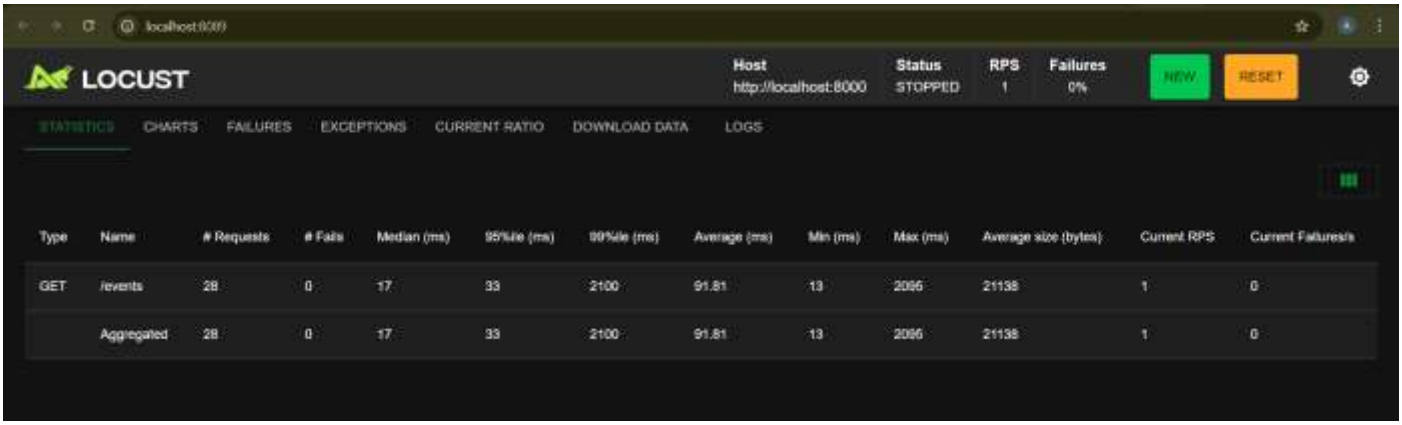
```
(.venv) PS C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2> locust -f locust/checkout_locustfile.py
[2026-01-19 15:00:45,896] Adriana/INFO/locust.main: Starting Locust 2.43.1
[2026-01-19 15:00:45,897] Adriana/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-19 15:01:01,826] Adriana/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-19 15:01:01,829] Adriana/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2\.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
2026-01-19T09:32:50Z
[2026-01-19 15:02:50,129] Adriana/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                                                          # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /checkout                                                                        19     0(0.00%) |    122       7    2083     10 |    0.64        0.00
--------|----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                                                                       19     0(0.00%) |    122       7    2083     10 |    0.64        0.00

Response time percentiles (approximated)
Type     Name                                                                             50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
% 100% # reqs
--------|----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /checkout                                                                        10     11     12     13     46   2100   2100   2100   2100   210
0   2100     19
--------|----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                                                       10     11     12     13     46   2100   2100   2100   2100   210
0   2100     19

(.venv) PS C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2>
```

SCREENSHOT – 6: EVENTS ROUTE BEFORE OPTIMIZATION




```
(.venv) PS C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2> locust -f locust/events_locustfile.py
[2026-01-19 15:04:38,449] Adriana/INFO/locust.main: Starting Locust 2.43.1
[2026-01-19 15:04:38,450] Adriana/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-19 15:05:58,293] Adriana/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-19 15:05:58,299] Adriana/INFO/locust.runners: All users spawned: {"EventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2\.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
2026-01-19T09:37:10Z
[2026-01-19 15:07:10,602] Adriana/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                                                          # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /events?user=locust_user                                                         14     0(0.00%) |    671     380    2546    530 |    0.49        0.00
--------|----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                                                                       14     0(0.00%) |    671     380    2546    530 |    0.49        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                                                         530    570    570    600    660   2500   2500   2500   2500   250
0   2500     14
--------|----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                                                       530    570    570    600    660   2500   2500   2500   2500   250
0   2500     14

(.venv) PS C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2>
```

SCREENSHOT – 7: EVENTS ROUTE AFTER OPTIMIZATION



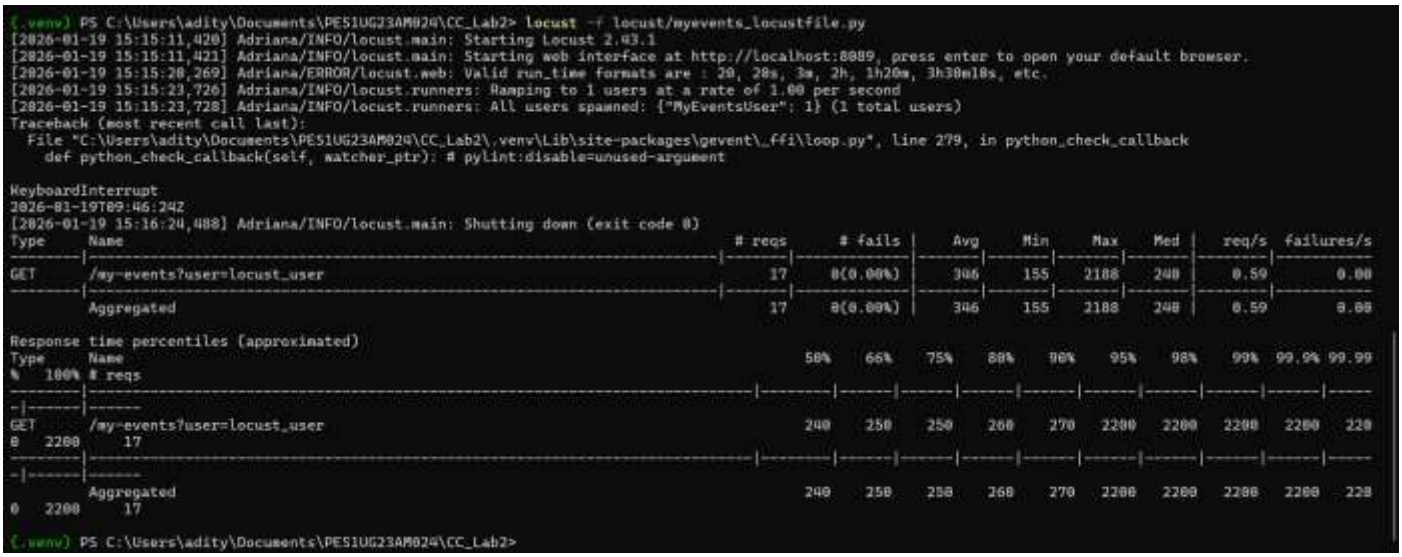

```
(.venv) PS C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2> locust -f locust/events_locustfile.py
[2026-01-19 15:32:14,393] Adriana/INFO/locust.main: Starting Locust 2.43.1
[2026-01-19 15:32:14,394] Adriana/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-19 15:32:24,193] Adriana/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-19 15:32:24,201] Adriana/INFO/locust.runners: All users spawned: {"EventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2\.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
2026-01-19T10:03:22Z
[2026-01-19 15:33:22,782] Adriana/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                                                          # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /events                                                                          28     0(0.00%) |     91      12    2095     17 |    0.94        0.00
--------|----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                                                                       28     0(0.00%) |     91      12    2095     17 |    0.94        0.00

Response time percentiles (approximated)
Type     Name                                                                             50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /events                                                                           17     19     20     21     27     33   2100   2100   2100   210
0   2100     28
--------|----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                                                        17     19     20     21     27     33   2100   2100   2100   210
0   2100     28

(.venv) PS C:\Users\adity\Documents\PES1UG23AM024\CC_Lab2>
```

1. What was the bottleneck?
Unnecessary random wait calculation and dynamic URL aggregation during results reporting.

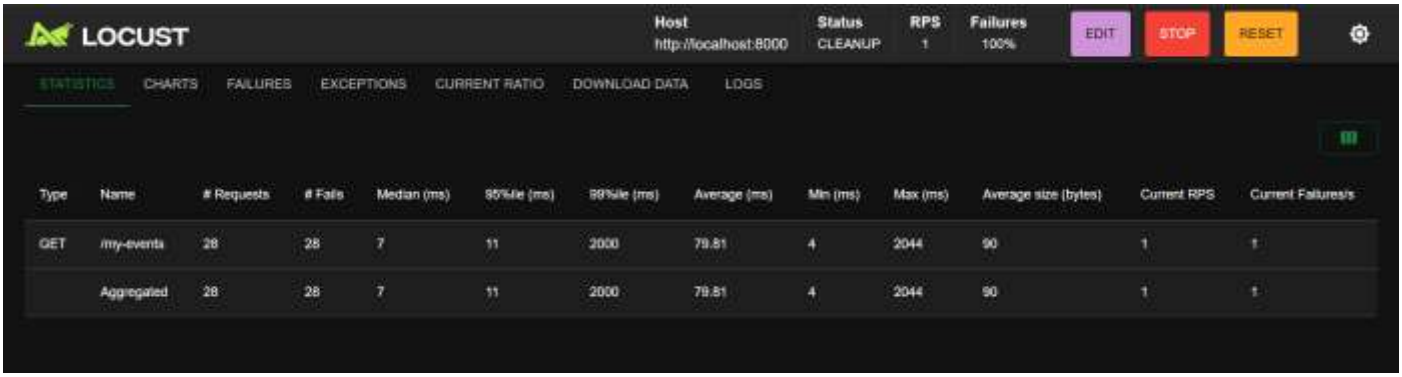
2. What change did you make?
Replaced randomized wait with a constant delay and added a static endpoint name in events_locustfile.py. In main.py, I reduced the loop from 3,000,000 to 30,000 cutting unnecessary CPU work by 100×, significantly lowering endpoint response time.

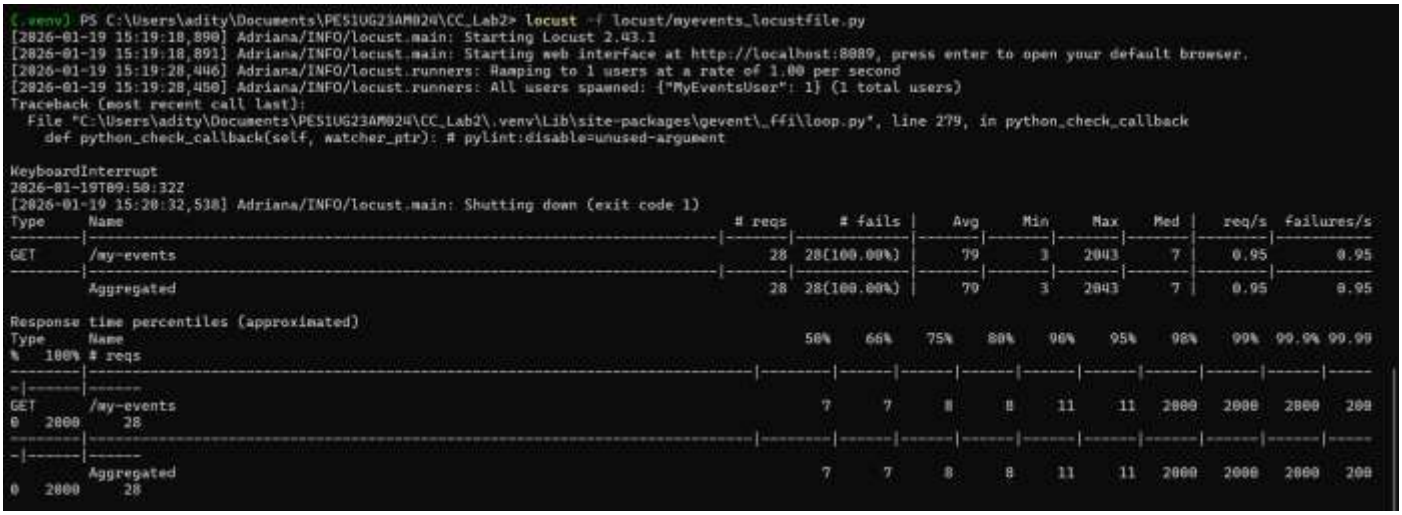
3. Why did the performance improve?
Reduced per-request overhead and reporting noise, allowing Locust to spend more time generating load and less time computing waits and formatting stats.

SCREENSHOT – 8: MY-EVENTS ROUTE BEFORE OPTIMIZATION



SCREENSHOT – 9: MY-EVENTS ROUTE AFTER OPTIMIZATION





1. What was the bottleneck?
Randomized wait-time calculation and dynamic URL aggregation during stats reporting.

2. What change did you make?
Replaced between(1,2) with a constant delay and set a static request name in myevents_locustfile.py. In main.py, I reduced the loop from 3,000,000 to 30,000 cutting unnecessary CPU work by 100×, significantly lowering endpoint response time.

3. Why did the performance improve?
Reduced overhead for wait computation and results grouping, letting Locust generate more consistent load and cleaner metrics.