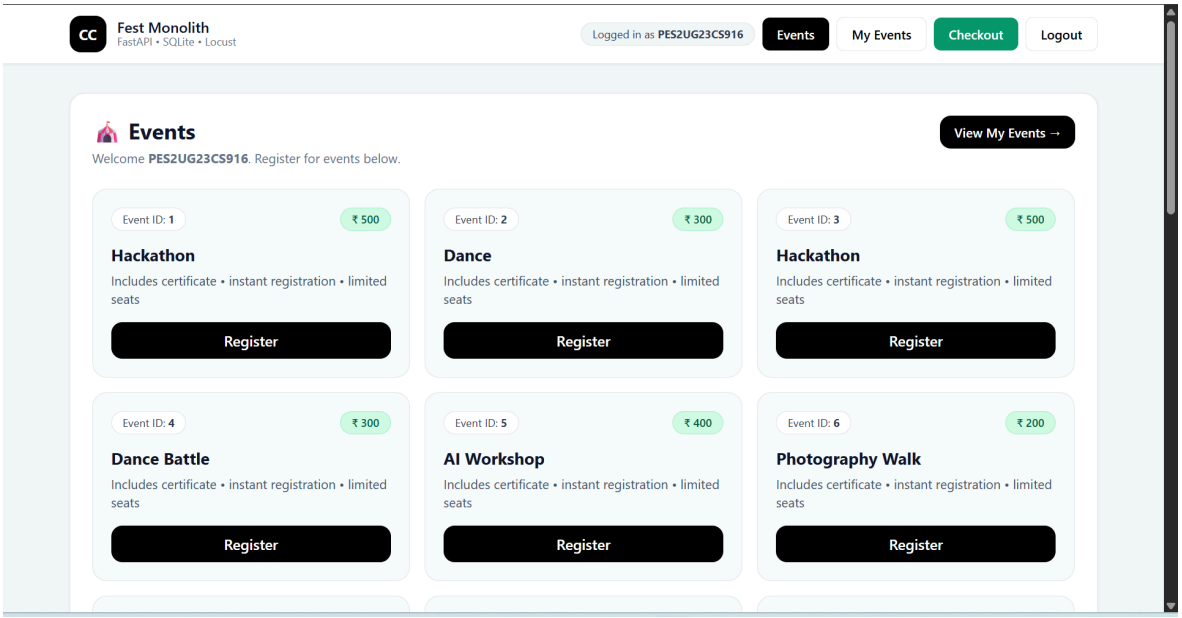
Cloud Computing Lab-2 Monolithic Architecture

Name: Pinisetti Sudhiksha

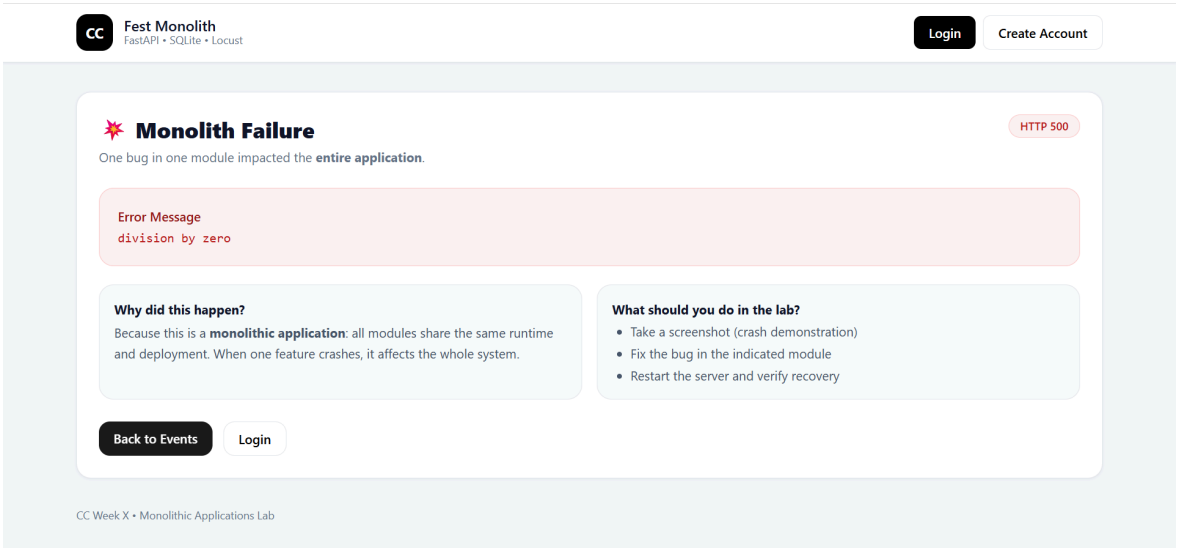
SRN: PES2UG23CS916

Section: 6F

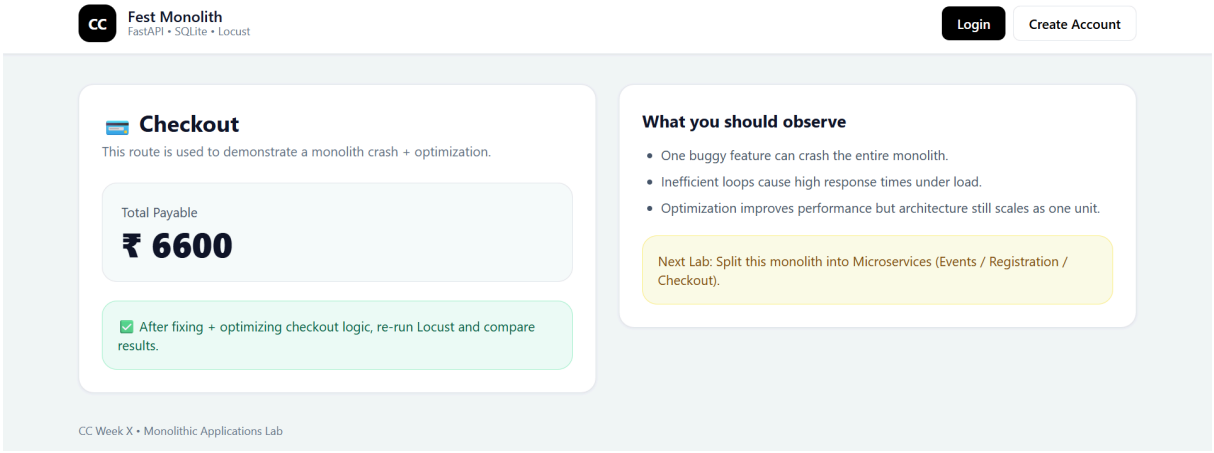
Screenshot 1



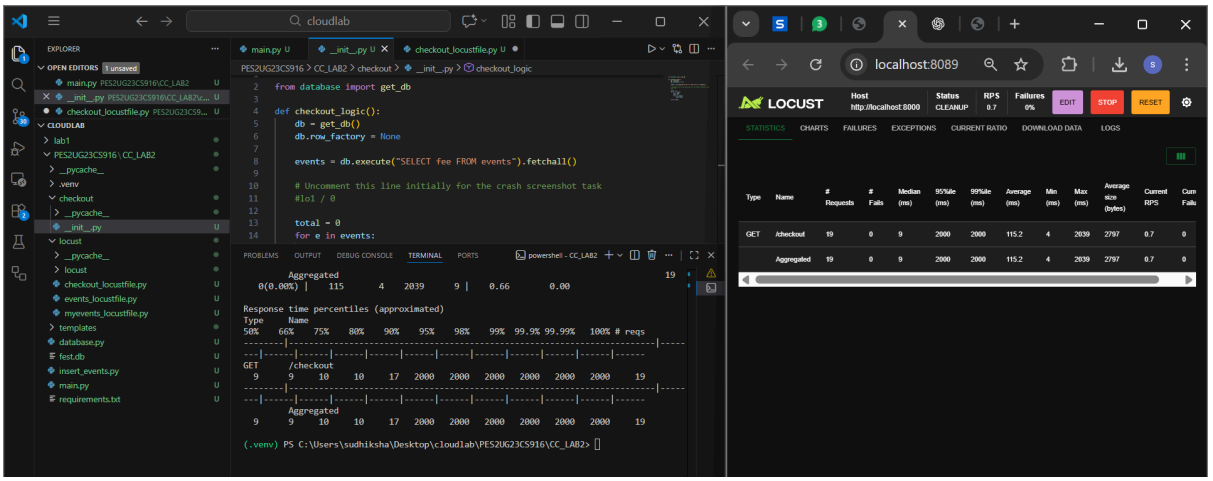
Screenshot 2



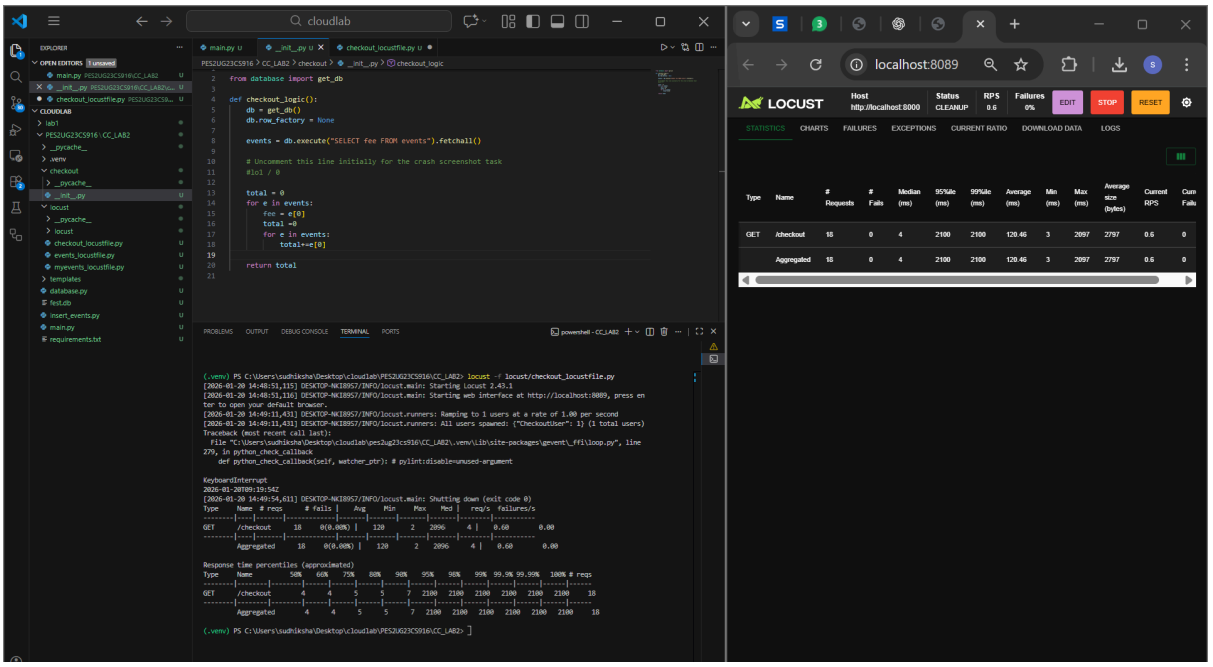
Screenshot 3



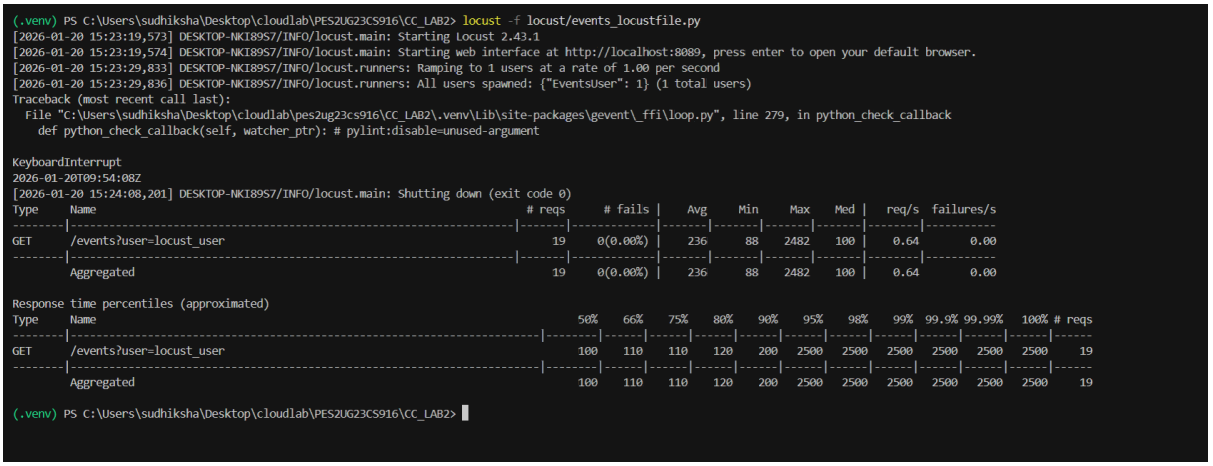
Screenshot 4



Screenshot 5



Screenshot 6



Screenshot 7

```
(.venv) PS C:\Users\sudhiksha\Desktop\cloudlab\PES2UG23CS916\CC_LAB2> locust -f locust/events_locustfile.py
  File "C:\Users\sudhiksha\Desktop\cloudlab\pes2ug23cs916\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
2026-01-20T09:56:35Z
[2026-01-20 15:26:35,688] DESKTOP-NKI89S7/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                                                         17     0(0.00%) |    149       8    2382     10 |    0.59        0.00
--------|----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                                                                       17     0(0.00%) |    149       8    2382     10 |    0.59        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                                                            10     11     12     12     19   2400   2400   2400   2400   2400   2400     17
--------|----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|------|------|------
         Aggregated                                                                          10     11     12     12     19   2400   2400   2400   2400   2400   2400     17

(.venv) PS C:\Users\sudhiksha\Desktop\cloudlab\PES2UG23CS916\CC_LAB2>
```

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	/events?user=locust_user	17	0	10	2400	2400	149.89	8	2383	21138	0.7	0
	Aggregated	17	0	10	2400	2400	149.89	8	2383	21138	0.7	0

Screenshot 8

```
(.venv) PS C:\Users\sudhiksha\Desktop\cloudlab\PES2UG23CS916\CC_LAB2> locust -f locust/myevents_locustfile.py
[2026-01-20 15:28:21,192] DESKTOP-NKI89S7/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 15:28:21,192] DESKTOP-NKI89S7/INFO/locust.main: Starting web interface at http://localhost:8089, press enter to open your default browser.
[2026-01-20 15:28:31,496] DESKTOP-NKI89S7/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 15:28:31,527] DESKTOP-NKI89S7/INFO/locust.runners: All users spawned: {"MyEventsUser": 1} (1 total users)
Traceback (most recent call last):
  File "C:\Users\sudhiksha\Desktop\cloudlab\pes2ug23cs916\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
2026-01-20T09:59:08Z
[2026-01-20 15:29:08,526] DESKTOP-NKI89S7/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                                                          # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /my-events?user=locust_user                                                      18     0(0.00%) |    266     117    2279    140 |    0.63        0.00
--------|----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                                                                       18     0(0.00%) |    266     117    2279    140 |    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                                                         140    160    160    160    200   2300   2300   2300   2300   2300   2300     18
--------|----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|------|------|------
         Aggregated                                                                          140    160    160    160    200   2300   2300   2300   2300   2300   2300     18

(.venv) PS C:\Users\sudhiksha\Desktop\cloudlab\PES2UG23CS916\CC_LAB2>
```

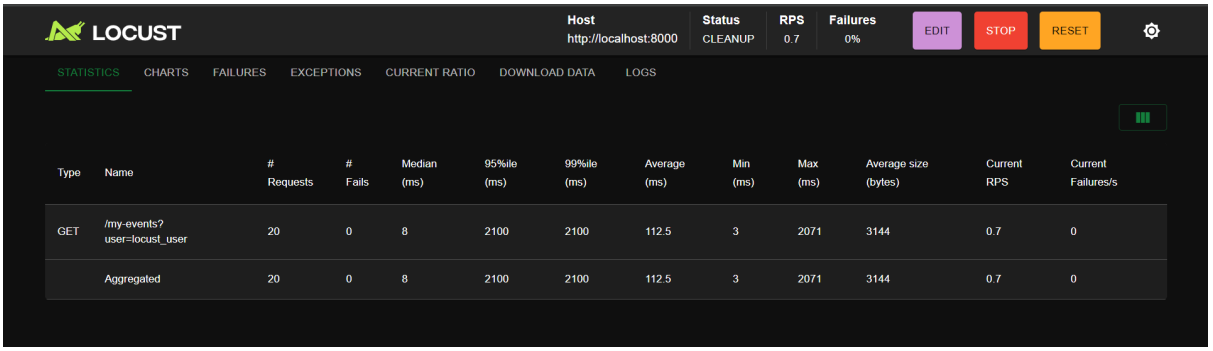
LOCUST

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	18	0	140	2300	2300	266.63	117	2279	3144	0.6	0
	Aggregated	18	0	140	2300	2300	266.63	117	2279	3144	0.6	0

Screenshot 9



Optimisations:

For events:

1. What was the bottleneck?

The route had an unnecessary CPU-intensive loop that ran millions of iterations for every request, even though it did not affect the response.

2. What change did you make?

Removed the wasteful loop:

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

3. Why did the performance improve?

The server no longer wastes CPU cycles on meaningless computation, so requests are processed faster, reducing average response time.

For my-events:

1. What was the bottleneck?

The route contained a dummy loop with 1.5 million iterations, which added artificial delay to every request.

2. What change did you make?

Removed the dummy loop:

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

3. Why did the performance improve?

By eliminating unnecessary processing, the route now returns results immediately after the database query, lowering response time and improving throughput.