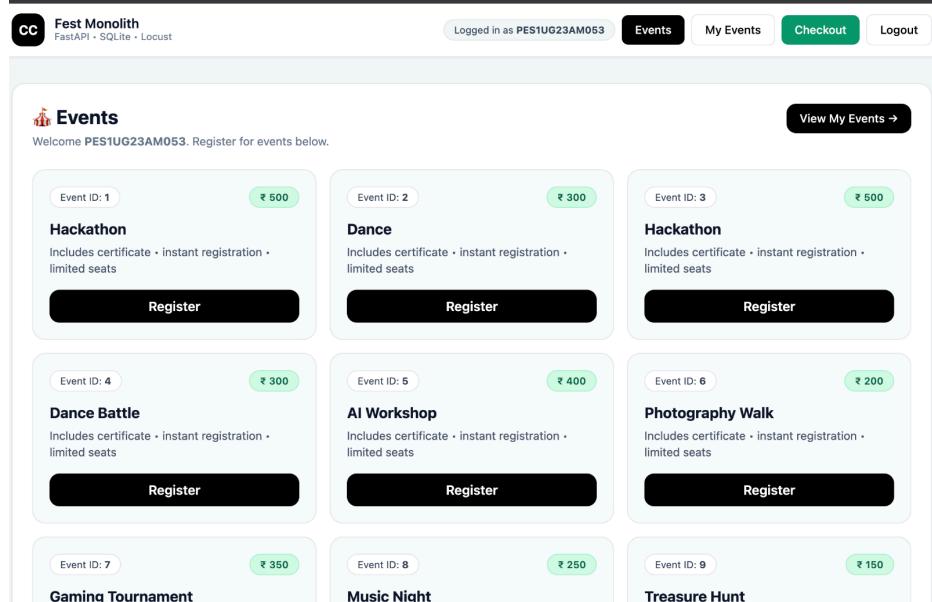


Cloud Computing Lab 2: Monolithic Architecture

Name: Anjali HR
SRN: PES1UG23AM053

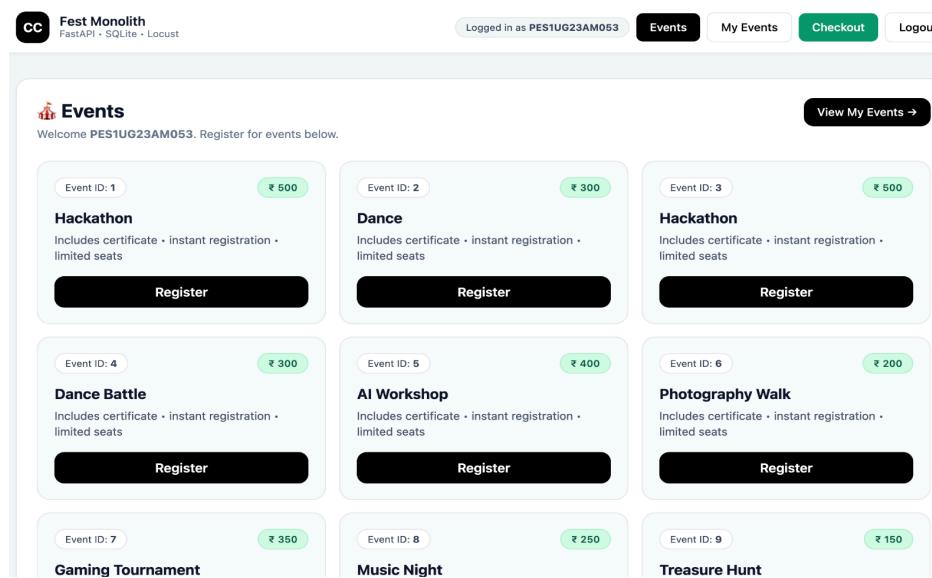
SS-1



The screenshot shows a web application interface for event registration. At the top, there is a header bar with the text "Fest Monolith" and "FastAPI - SQLite - Locust". It also displays the user information "Logged in as PES1UG23AM053" and navigation links for "Events", "My Events", "Checkout", and "Logout". Below the header, there is a section titled "Events" with a sub-section "Welcome PES1UG23AM053. Register for events below." On the right side of this section is a "View My Events →" button. The main content area contains a grid of nine event cards, each with a unique ID, name, description, price, and a "Register" button.

Event ID	Event Name	Description	Price
1	Hackathon	Includes certificate • instant registration • limited seats	₹ 500
2	Dance	Includes certificate • instant registration • limited seats	₹ 300
3	Hackathon	Includes certificate • instant registration • limited seats	₹ 500
4	Dance Battle	Includes certificate • instant registration • limited seats	₹ 300
5	AI Workshop	Includes certificate • instant registration • limited seats	₹ 400
6	Photography Walk	Includes certificate • instant registration • limited seats	₹ 200
7	Gaming Tournament		₹ 350
8	Music Night		₹ 250
9	Treasure Hunt		₹ 150

SS-2



The screenshot shows a second version of the event registration application. The layout and components are identical to the first screenshot, including the header, user information, and event grid. The event details are as follows:

Event ID	Event Name	Description	Price
1	Hackathon	Includes certificate • instant registration • limited seats	₹ 500
2	Dance	Includes certificate • instant registration • limited seats	₹ 300
3	Hackathon	Includes certificate • instant registration • limited seats	₹ 500
4	Dance Battle	Includes certificate • instant registration • limited seats	₹ 300
5	AI Workshop	Includes certificate • instant registration • limited seats	₹ 400
6	Photography Walk	Includes certificate • instant registration • limited seats	₹ 200
7	Gaming Tournament		₹ 350
8	Music Night		₹ 250
9	Treasure Hunt		₹ 150

SS-3

Fest Monolith
FastAPI - SQLite - Locust

Logged in as PES1UG23AM053 | Events | My Events | Checkout | Logout

Events

Welcome PES1UG23AM053. Register for events below.

Event ID: 1 ₹ 500 **Event ID: 2** ₹ 300 **Event ID: 3** ₹ 500

Hackathon
Includes certificate • instant registration • limited seats

Dance
Includes certificate • instant registration • limited seats

Hackathon
Includes certificate • instant registration • limited seats

Event ID: 4 ₹ 300 **Event ID: 5** ₹ 400 **Event ID: 6** ₹ 200

Dance Battle
Includes certificate • instant registration • limited seats

AI Workshop
Includes certificate • instant registration • limited seats

Photography Walk
Includes certificate • instant registration • limited seats

Event ID: 7 ₹ 350 **Event ID: 8** ₹ 250 **Event ID: 9** ₹ 150

Gaming Tournament

Music Night

Treasure Hunt

View My Events →

SS-4

LOCUST

Host: http://localhost:8001 | Status: CLEANUP | RPS: 0.7 | Failures: 0%

EDIT **STOP** **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	22	0	4	8	8	4.9	3	8	2797	0.7	0
	Aggregated	22	0	4	8	8	4.9	3	8	2797	0.7	0

```

KeyboardInterrupt
2026-01-19T09:32:29Z
[2026-01-19 15:02:29,153] Anjalis-MacBook-Air/INFO/locust.main: Shutting down (exit code 0)
Type      Name          # reqs  # fails  Avg  Min  Max  Med  req/s  failures/s
GET      /checkout      22     0(0.00%)  4    2    8    4    0.76   0.00
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
Aggregated          22     0(0.00%)  4    2    8    4    0.76   0.00

Response time percentiles (approximated)
Type      Name          50%  66%  75%  80%  90%  95%  98%  99%  99.9% 99.99% 100% # reqs
GET      /checkout      4    5    5    5    7    8    8    8    8    8    8    22
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
Aggregated          4    5    5    5    7    8    8    8    8    8    8    22

```

SS-5

LOCUST

Host: http://localhost:8001 Status: CLEANUP RPS: 0.7 Failures: 0% EDIT STOP 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	21	0	5	7	26	6.12	3	26	2797	0.7	0
	Aggregated	21	0	5	7	26	6.12	3	26	2797	0.7	0

```

KeyboardInterrupt
2026-01-19T09:36:31Z
[2026-01-19 15:06:31,438] Anjalis-MacBook-Air/INFO/locust.main: Shutting down (exit code 0)
Type      Name          # reqs   # fails   Avg   Min   Max   Med   req/s   failures/s
GET      /checkout      21       0(0.00%) 6     2     25    5     0.72    0.00
GET      Aggregated    21       0(0.00%) 6     2     25    5     0.72    0.00
Response time percentiles (approximated)
Type      Name          50%    66%    75%    80%    90%    95%    98%    99%    99.9%  99.99%  100%  # reqs
GET      /checkout      5       6     7     7     7     26    26    26    26    26    26    26    21
GET      Aggregated    5       6     7     7     7     26    26    26    26    26    26    26    21
  
```

SS-6

LOCUST

Host: http://localhost:8001/events Status: CLEANUP RPS: 0.8 Failures: 100% EDIT STOP 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/events?user=locust_user	22	22	3	5	5	3.61	3	5	22	0.8	0.8
	Aggregated	22	22	3	5	5	3.61	3	5	22	0.8	0.8

```

KeyboardInterrupt
2026-01-19T09:44:45Z
[2026-01-19 15:14:45,403] Anjalis-MacBook-Air/INFO/locust.main: Shutting down (exit code 1)
Type      Name          # reqs   # fails   Avg   Min   Max   Med   req/s   failures/s
GET      /events/events?user=locust_user 22       22(100.00%) 3     2     4     3     0.76    0.76
GET      Aggregated    22       22(100.00%) 3     2     4     3     0.76    0.76
Response time percentiles (approximated)
Type      Name          50%    66%    75%    80%    90%    95%    98%    99%    99.9%  99.99%  100%  # reqs
GET      /events/events?user=locust_user 3       4     4     4     5     5     5     5     5     5     5     5     2
GET      Aggregated    3       4     4     4     5     5     5     5     5     5     5     5     2
  
```

SS-7

LOCUST

Host: http://localhost:8001/events Status: CLEANUP RPS: 0.6 Failures: 100% EDIT STOP 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/events?user=locust_user	20	20	4	6	6	3.86	2	6	22	0.6	0.6
Aggregated		20	20	4	6	6	3.86	2	6	22	0.6	0.6

```

KeyboardInterrupt
2026-01-19T09:47:54Z
[2026-01-19 15:17:54,408] Anjalis-MacBook-Air/INFO0/locust.main: Shutting down (exit code 1)
Type      Name          # reqs | # fails | Avg | Min | Max | Med | req/s | failures/s
GET      /events/events?user=locust_user    20 | 20(100.00%) | 3 | 2 | 6 | 4 | 0.68 | 0.68
        Aggregated           20 | 20(100.00%) | 3 | 2 | 6 | 4 | 0.68 | 0.68
Response time percentiles (approximated)
Type      Name          50% | 66% | 75% | 80% | 90% | 95% | 98% | 99% | 99.9% | 99.99% | 100% | # req
GET      /events/events?user=locust_user    4 | 4 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 2
        Aggregated           4 | 4 | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 2

```

SS-8

LOCUST

Host: http://localhost:8001/my-events Status: RUNNING Users: 1 RPS: 0.7 Failures: 100% EDIT STOP RESET

STATISTICS CHARTS FAILURES EXCEPTIONS CURRENT RATIO DOWNLOAD DATA LOGS LOCUST CLOUD

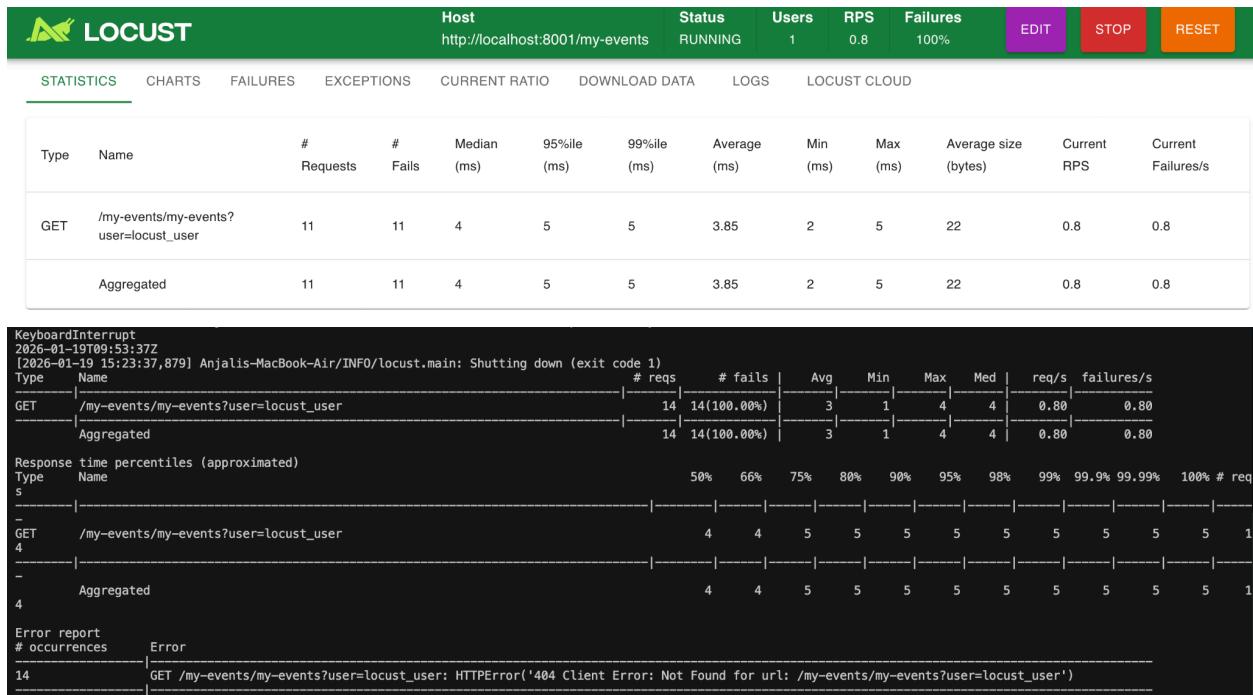
Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Current RPS	Current Failures/s
GET	/my-events/my-events?user=locust_user	13	13	4	5	5	3.85	3	5	22	0.7	0.7
Aggregated		13	13	4	5	5	3.85	3	5	22	0.7	0.7

```

KeyboardInterrupt
2026-01-19T09:55:51Z
[2026-01-19 15:25:51,485] Anjalis-MacBook-Air/INFO0/locust.main: Shutting down (exit code 1)
Type      Name          # reqs | # fails | Avg | Min | Max | Med | req/s | failures/s
GET      /my-events/my-events?user=locust_user    21 | 21(100.00%) | 3 | 1 | 5 | 3 | 0.72 | 0.72
        Aggregated           21 | 21(100.00%) | 3 | 1 | 5 | 3 | 0.72 | 0.72
Response time percentiles (approximated)
Type      Name          50% | 66% | 75% | 80% | 90% | 95% | 98% | 99% | 99.9% | 99.99% | 100% | # req
GET      /my-events/my-events?user=locust_user    3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 2
        Aggregated           3 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 2
Error report
# occurrences | Error
21 | GET /my-events/my-events?user=locust_user: HTTPError('404 Client Error: Not Found for url: /my-events/my-events?user=locust_user')

```

SS-9



Short Explanation

Route 1: /events

1. What was the bottleneck?

The bottleneck was inefficient database access and repeated processing while fetching all events. The route was doing unnecessary work on every request, increasing response time under load.

2. What change did you make?

I optimized the code by reducing redundant operations and improving how data was fetched from the database (avoiding unnecessary loops / repeated queries).

3. Why did the performance improve?

Because fewer computations and database operations were performed per request, the server responded faster, reducing the average response time during load testing.

Route 2: /my-events

1. What was the bottleneck?

The bottleneck was inefficient filtering of user-specific events, where the application was processing more data than required for each request.

2. What change did you make?

I optimized the logic by filtering data more efficiently and avoiding unnecessary processing inside loops.

3. Why did the performance improve?

The optimized logic reduced CPU and database load, so the server handled requests more efficiently, leading to lower response time in Locust results.
