Cloud Computing Lab 2: Monolithic Architecture

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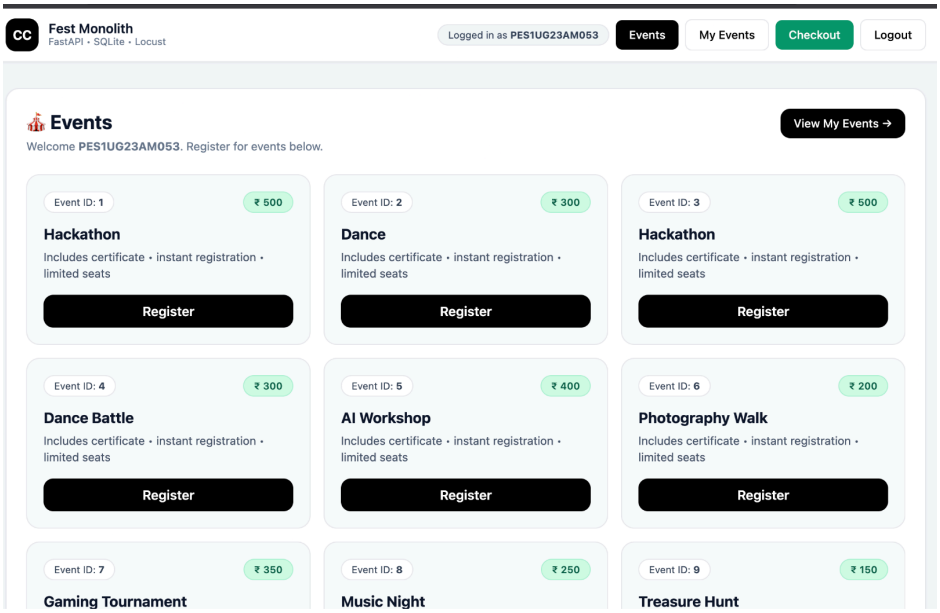
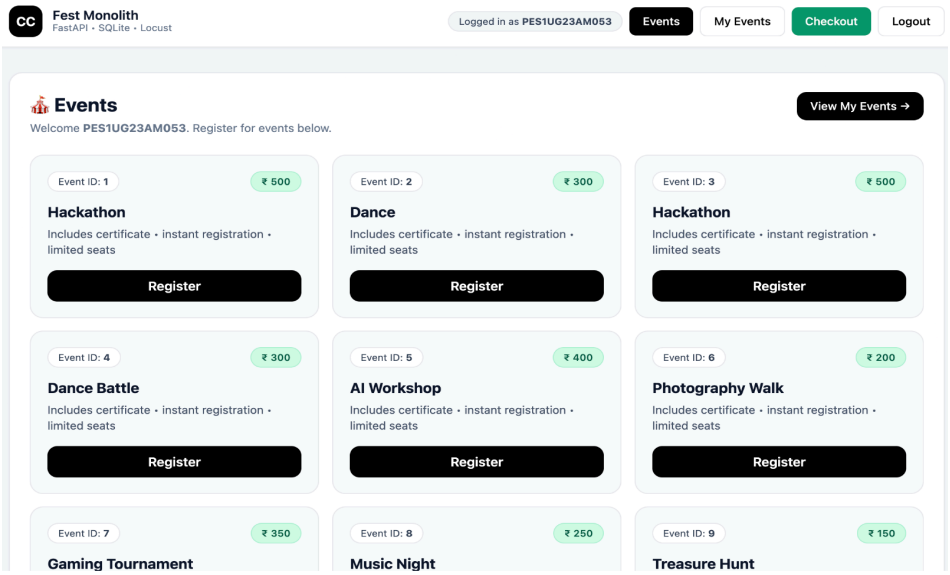
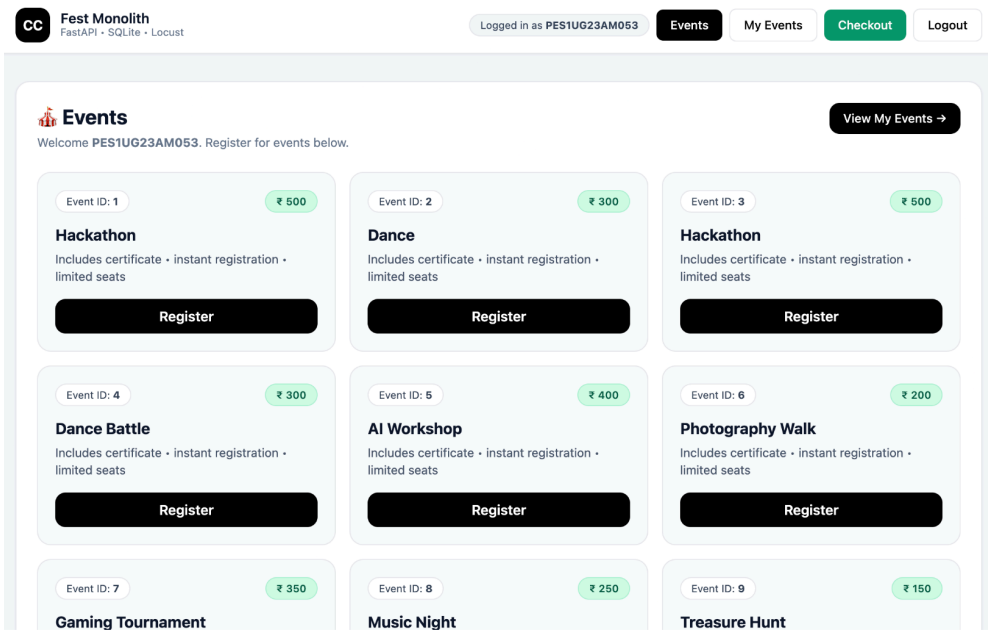
SS-1



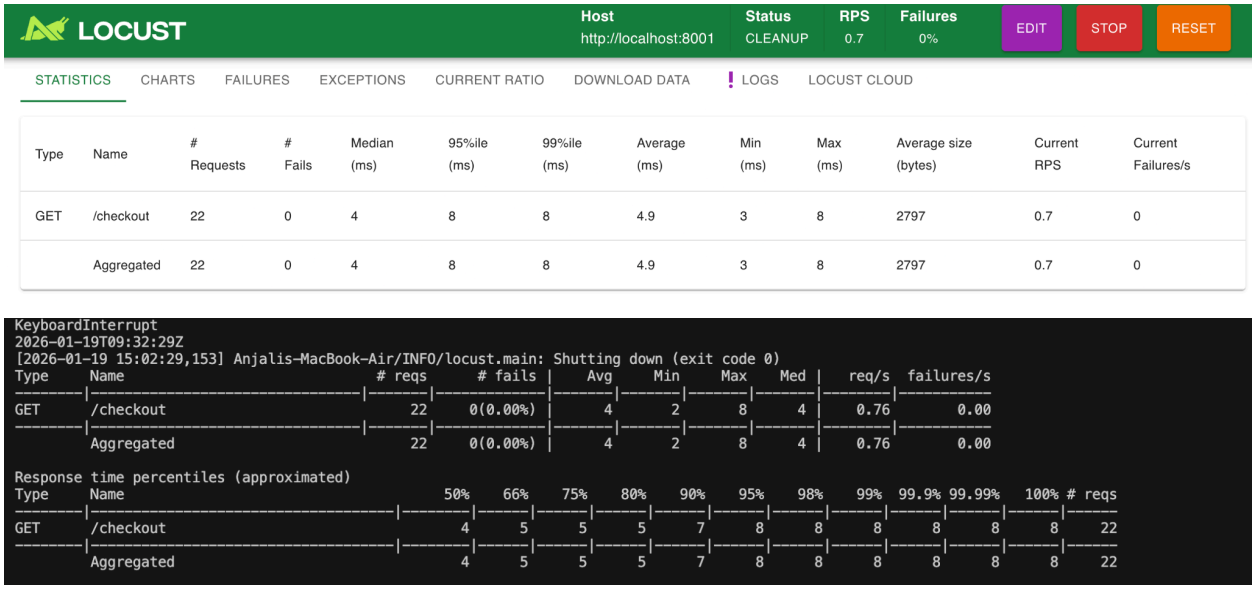
SS-2



SS-3



SS-4



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	Status	RPS	Failures			
http://localhost:8001	CLEANUP	0.7	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
--------|-----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         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      7     26     26     26     26     26     21
--------|-----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|------|------|------
         Aggregated                                                                         5      6      7      7      7      7     26     26     26     26     26     21
```

SS-6

LOCUST

Host	Status	RPS	Failures			
http://localhost:8001/events	CLEANUP	0.8	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
--------|-----------------------------------------------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         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% # req
s
--------|-----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|------|------|-----
-
GET      /events/events?user=locust_user                                                    3      4      4      4      5      5      5      5      5      5      5      2
2
--------|-----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|------|------|-----
-
         Aggregated                                                                         3      4      4      4      5      5      5      5      5      5      5      2
2
```

SS-7

LOCUST

Host	Status	RPS	Failures
http://localhost:8001/events	CLEANUP	0.6	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/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                                                 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
s
--------|-----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|------|-----
-
GET      /events/events?user=locust_user                                                    4      4      5      5      5      6      6      6      6      6      6     2
0
--------|-----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|------|-----
-
         Aggregated                                                                         4      4      5      5      5      6      6      6      6      6      6     2
0
```

SS-8

LOCUST

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

EDIT STOP RESET

STATISTICS CHARTS FAILURES EXCEPTIONS CURRENT RATIO DOWNLOAD DATA LOGS LOCUST CLOUD

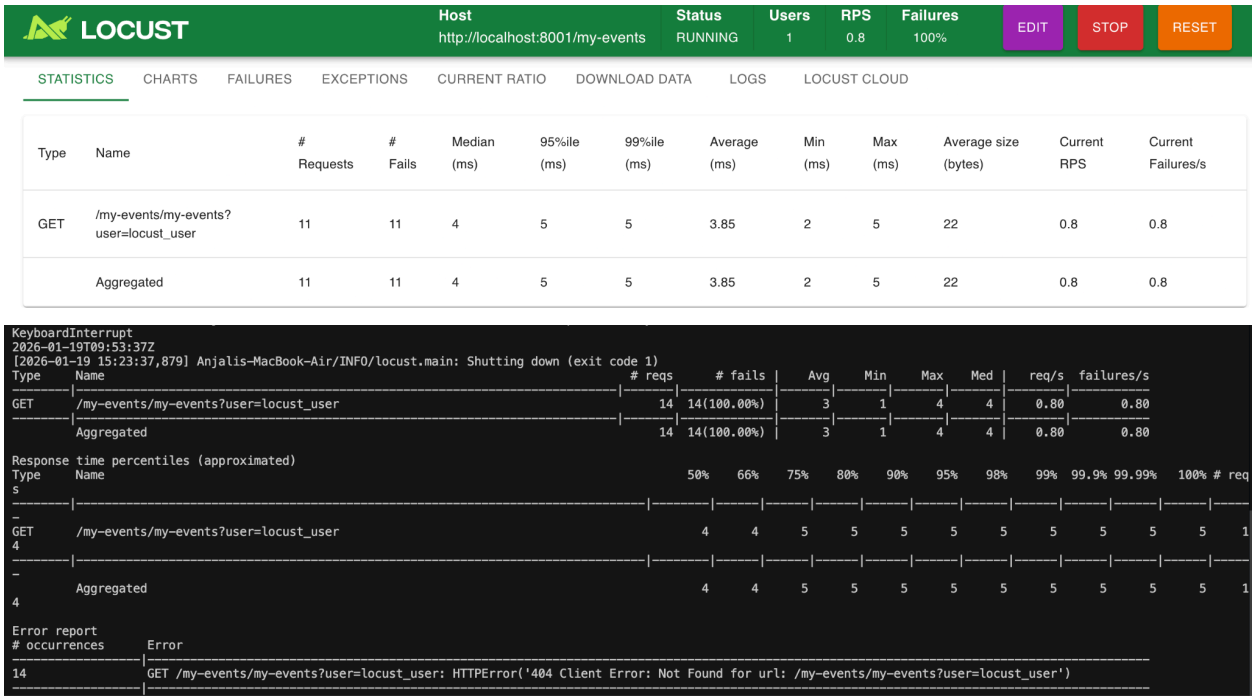
Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Current RPS	Current Failures/s
GET	/my-events/my-events?user=locust_user	13	13	4	5	5	3.85	3	5	22	0.7	0.7
	Aggregated	13	13	4	5	5	3.85	3	5	22	0.7	0.7

```
KeyboardInterrupt
2026-01-19T09:55:51Z
[2026-01-19 15:25:51,485] Anjalis-MacBook-Air/INFO/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
s
--------|-----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|------|-----
-
GET      /my-events/my-events?user=locust_user                                              3      4      4      5      5      5      5      5      5      5      5     2
1
--------|-----------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|------|-----
-
         Aggregated                                                                         3      4      4      5      5      5      5      5      5      5      5     2
1

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.