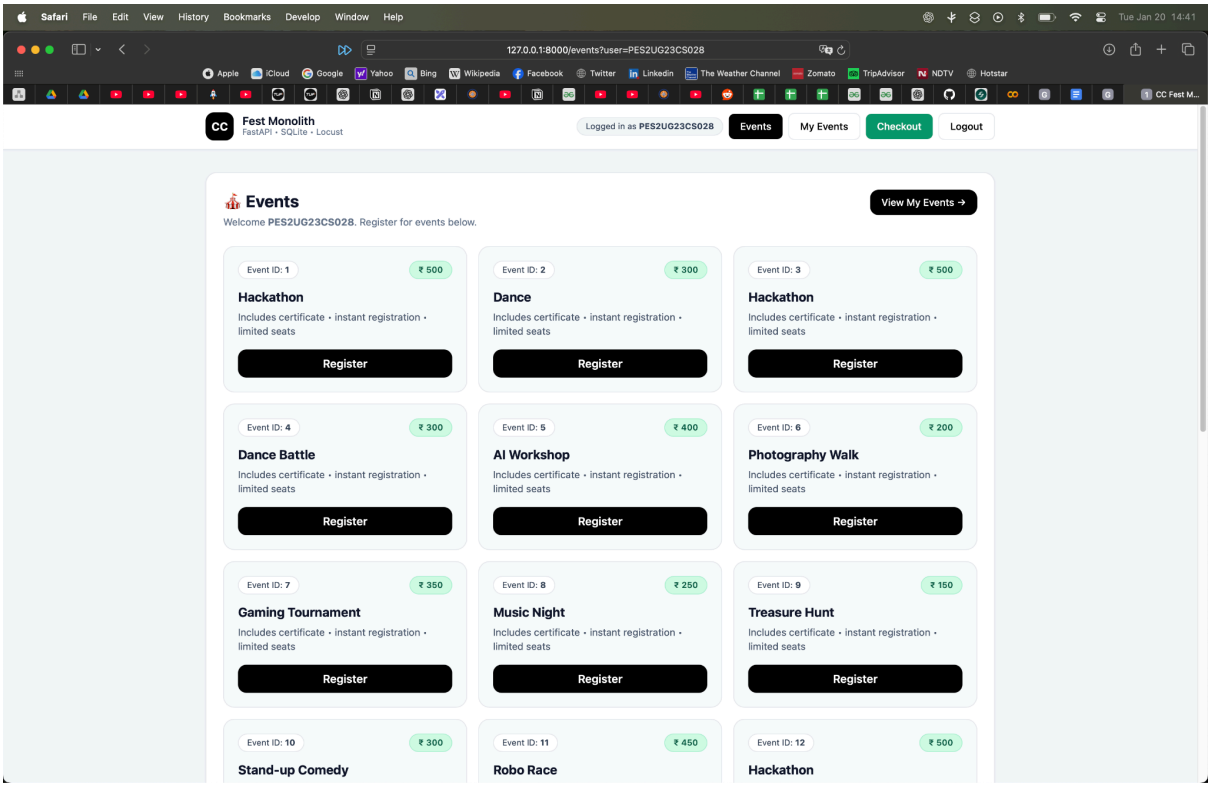
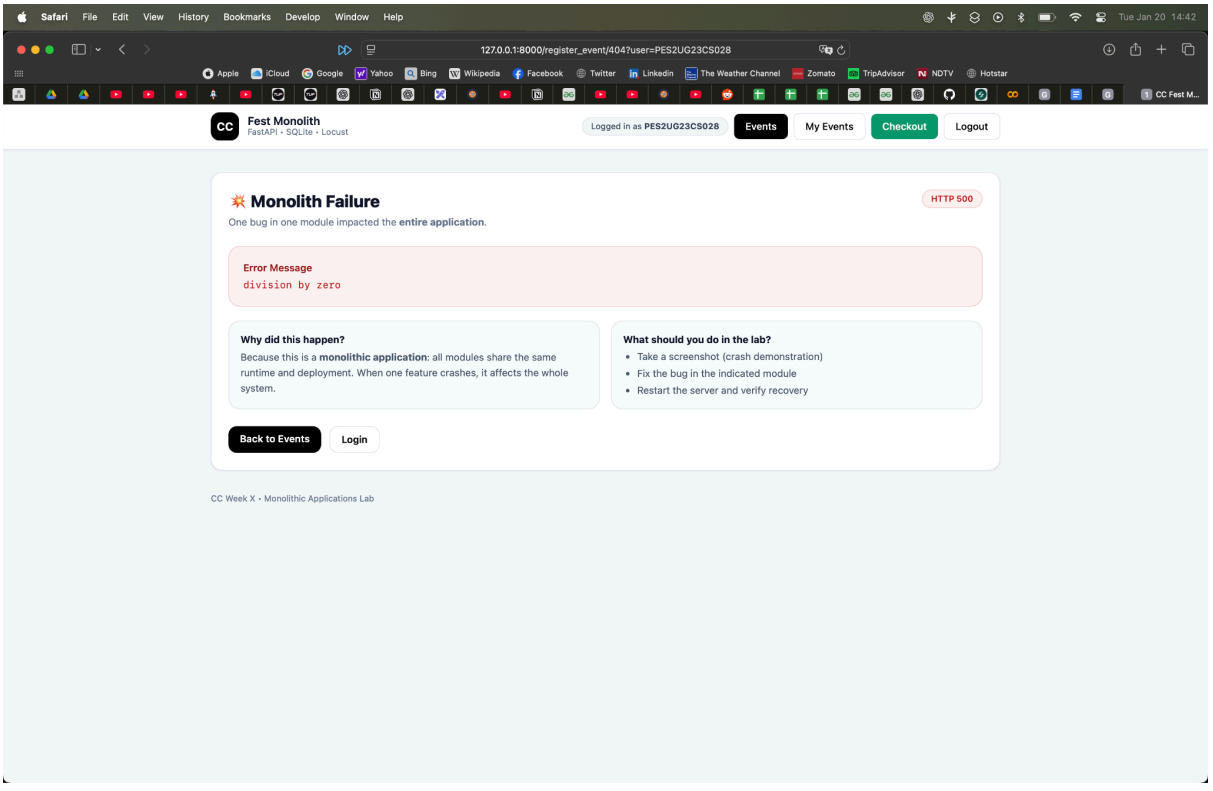
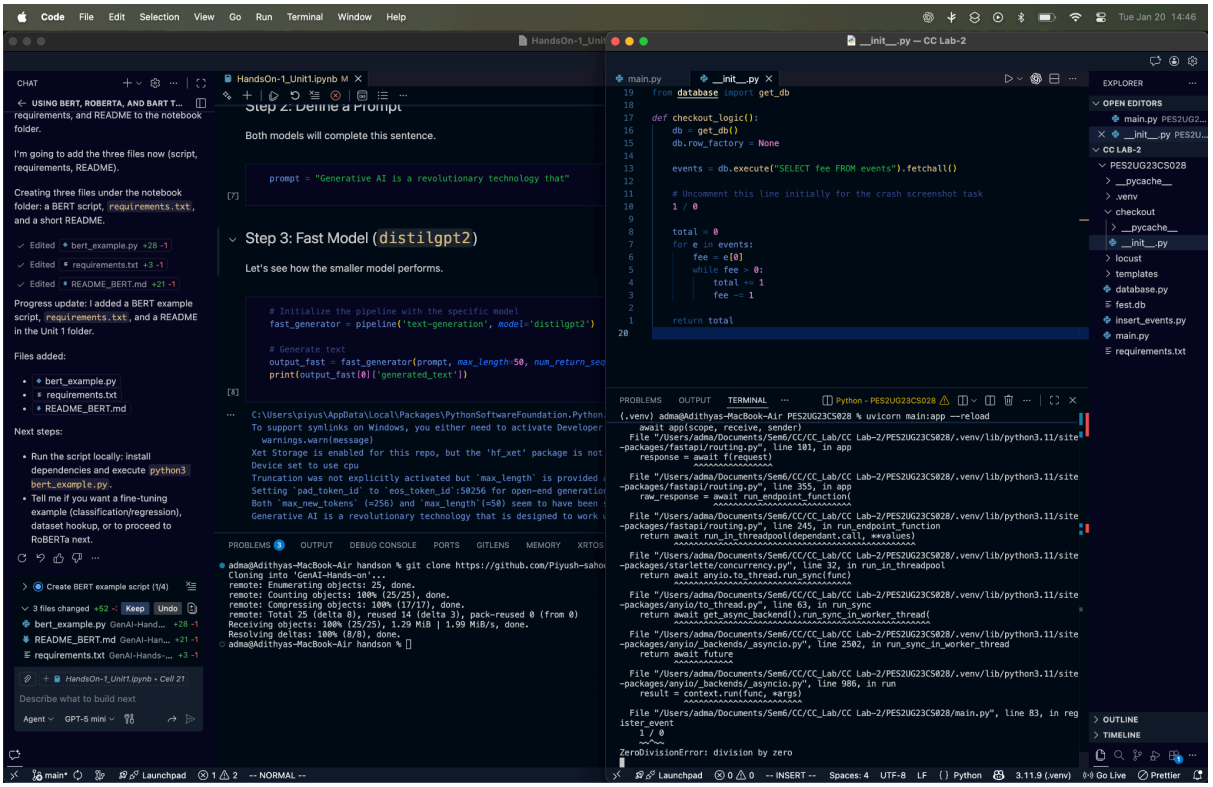
CC- LAB - SEM 6

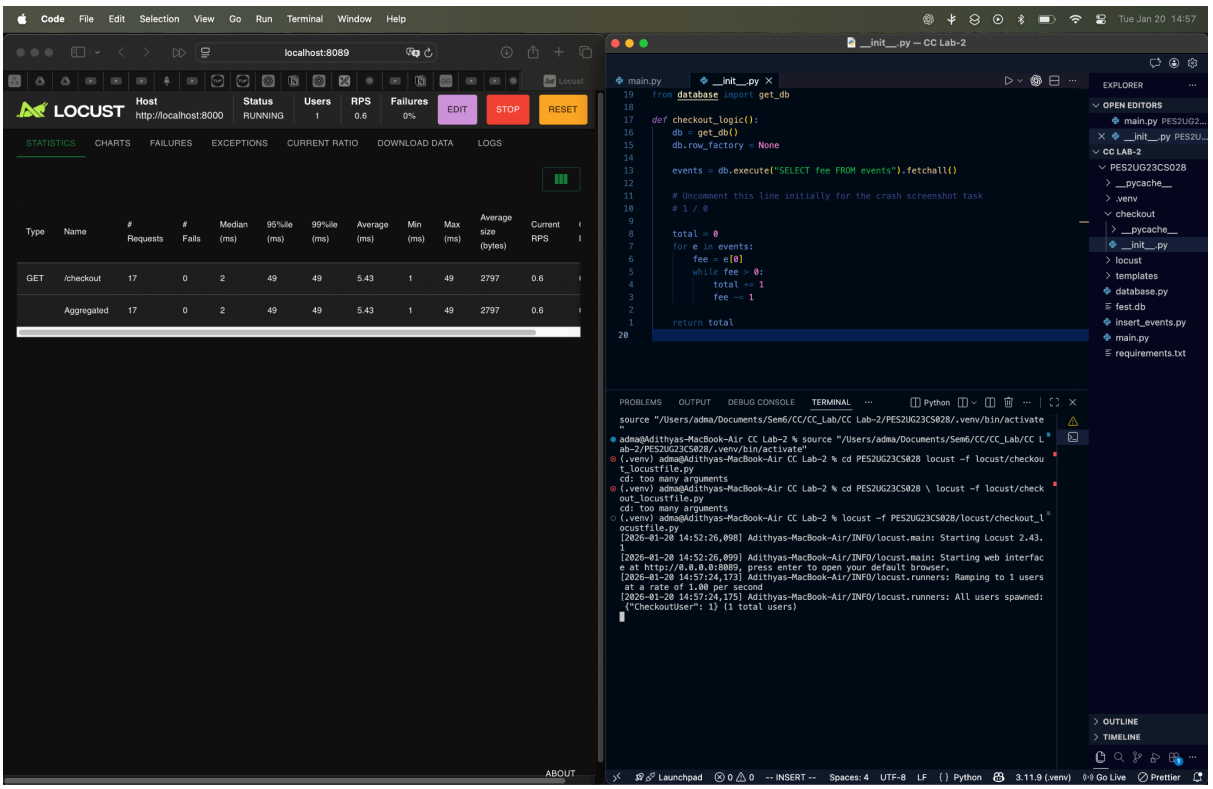
https://github.com/adma77ya/CC_Lab_PES2UG23CS028

Name: Adithya Mallya	SRN: PES2UG23CS028	Section:A

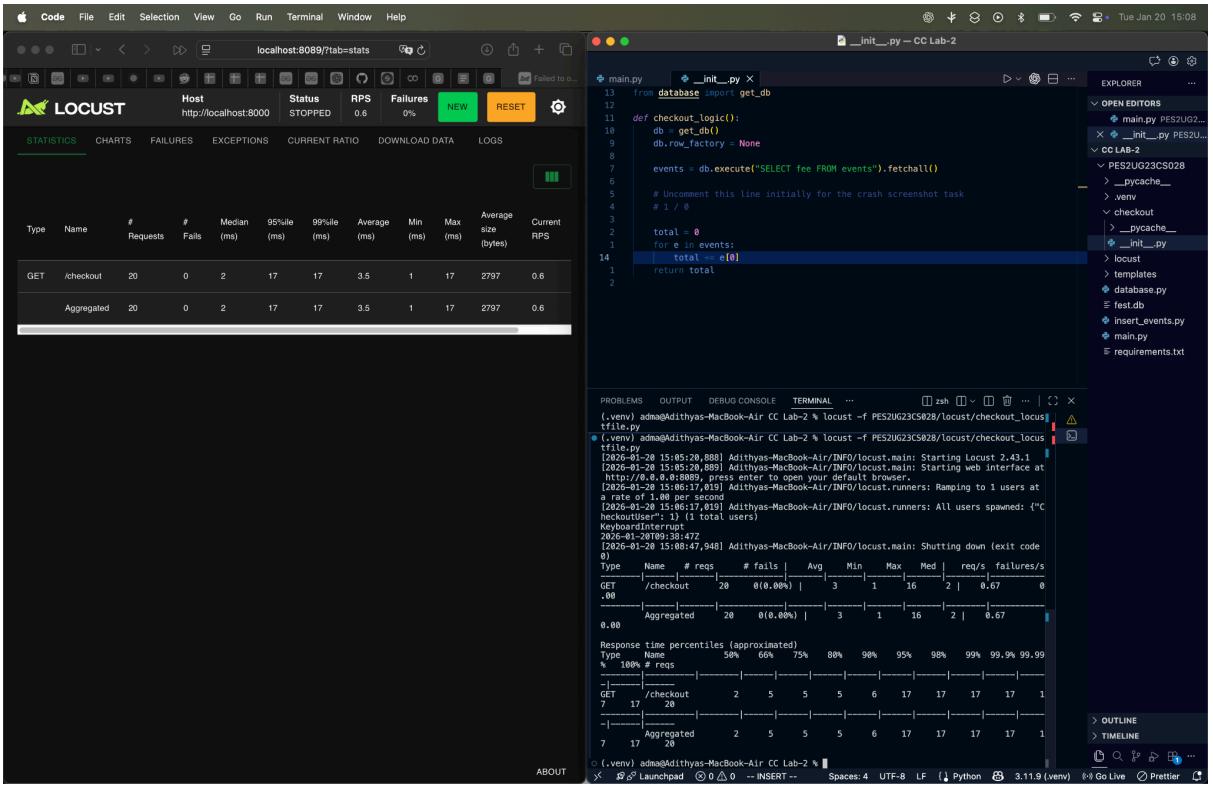




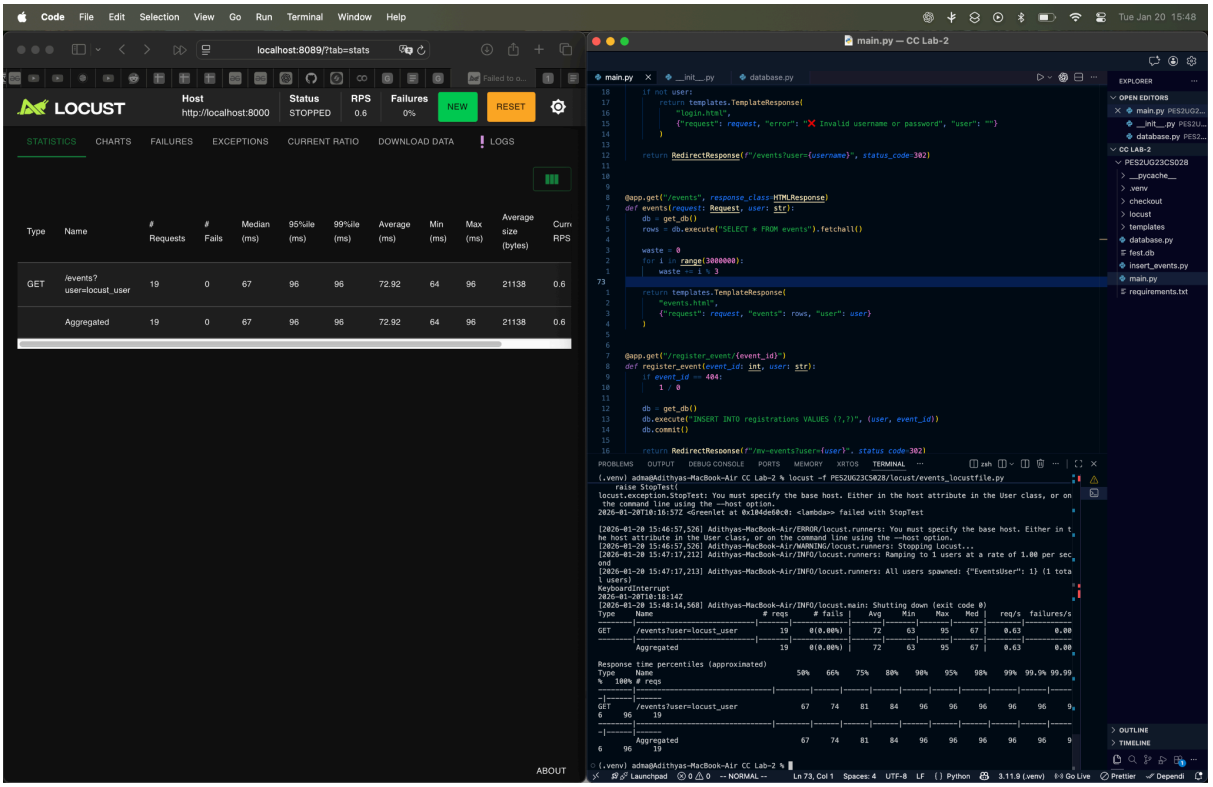

Code File Edit Selection View Go Run Terminal Window Help
Tue Jan 20 14:46
CHAT
USING BERT, ROBERTA, AND BART T...
requirements, and README to the notebook folder.
I'm going to add the three files now (script, requirements, README).
Creating three files under the notebook folder: a BERT script, requirements.txt, and a short README.
Edited bert_example.py +28 -1
Edited requirements.txt +3 -1
Edited README_BERT.md +21 -1
Progress update: I added a BERT example script, requirements.txt, and a README in the Unit 1 folder.
Files added:
bert_example.py
requirements.txt
README_BERT.md
Next steps:
Run the script locally: install dependencies and execute python3 bert_example.py.
Tell me if you want a fine-tuning example (classification/regression), dataset hookup, or to proceed to RoBERTa next.
Create BERT example script (1/4)
3 files changed +52 -- Keep Undo
bert_example.py GenAI-Hand... +28 -1
README_BERT.md GenAI-Han... +21 -1
requirements.txt GenAI-Hands-... +3 -1
HandsOn-1_Unit1.ipynb • Cell 21
Describe what to build next
Agent GPT-5 mini
HandsOn-1_Unit1.ipynb M
Step 2: Define a Prompt
Both models will complete this sentence.
prompt = "Generative AI is a revolutionary technology that"
Step 3: Fast Model (distilgpt2)
Let's see how the smaller model performs.
# Initialize the pipeline with the specific model
fast_generator = pipeline('text-generation', model='distilgpt2')
# Generate text
output_fast = fast_generator(prompt, max_length=50, num_return_seq
print(output_fast[0]['generated_text'])
C:\Users\piyus\AppData\Local\Packages\PythonSoftwareFoundation.Python
To support symlinks on Windows, you either need to activate Developer
warnings.warn(message)
Xet Storage is enabled for this repo, but the 'hf_xet' package is not
Device set to use cpu
Truncation was not explicitly activated but `max_length` is provided
Setting `pad_token_id` to `eos_token_id`:50256 for open-end generatio
Both `max_new_tokens` (=256) and `max_length`(=50) seem to have been
Generative AI is a revolutionary technology that is designed to work
PROBLEMS 3 OUTPUT DEBUG CONSOLE PORTS GITLENS MEMORY XRTOS
adma@Adithyas-MacBook-Air handson % git clone https://github.com/Piyush-sahoo
Cloning into 'GenAI-Hands-on'...
remote: Enumerating objects: 25, done.
remote: Counting objects: 100% (25/25), done.
remote: Compressing objects: 100% (17/17), done.
remote: Total 25 (delta 8), reused 14 (delta 3), pack-reused 0 (from 0)
Receiving objects: 100% (25/25), 1.29 MiB | 1.99 MiB/s, done.
Resolving deltas: 100% (8/8), done.
adma@Adithyas-MacBook-Air handson %
__init__.py — CC Lab-2
main.py
__init__.py
from database import get_db
def checkout_logic():
db = get_db()
db.row_factory = None
events = db.execute("SELECT fee FROM events").fetchall()
# Uncomment this line initially for the crash screenshot task
1 / 0
total = 0
for e in events:
fee = e[0]
while fee > 0:
total += 1
fee -= 1
return total
EXPLORER
OPEN EDITORS
main.py PES2UG2...
__init__.py PES2U...
CC LAB-2
PES2UG23CS028
__pycache__
.venv
checkout
__pycache__
__init__.py
locust
templates
database.py
fest.db
insert_events.py
main.py
requirements.txt
PROBLEMS OUTPUT TERMINAL
Python - PES2UG23CS028
(.venv) adma@Adithyas-MacBook-Air PES2UG23CS028 % uvicorn main:app --reload
await app(scope, receive, sender)
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/fastapi/routing.py", line 101, in app
response = await f(request)
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/fastapi/routing.py", line 355, in app
raw_response = await run_endpoint_function(
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/fastapi/routing.py", line 245, in run_endpoint_function
return await run_in_threadpool(dependant.call, **values)
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/starlette/concurrency.py", line 32, in run_in_threadpool
return await anyio.to_thread.run_sync(func)
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/anyio/to_thread.py", line 63, in run_sync
return await get_async_backend().run_sync_in_worker_thread(
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/anyio/_backends/_asyncio.py", line 2502, in run_sync_in_worker_thread
return await future
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/anyio/_backends/_asyncio.py", line 986, in run
result = context.run(func, *args)
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/main.py", line 83, in register_event
1 / 0
ZeroDivisionError: division by zero
OUTLINE
TIMELINE
main* Launchpad 1 2 -- NORMAL --
Launchpad 0 0 -- INSERT -- Spaces: 4 UTF-8 LF Python 3.11.9 (.venv) Go Live Prettier


Code File Edit Selection View Go Run Terminal Window Help
Tue Jan 20 14:57
localhost:8089
LOCUST
Host http://localhost:8000
Status RUNNING
Users 1
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
GET /checkout 17 0 2 49 49 5.43 1 49 2797 0.6
Aggregated 17 0 2 49 49 5.43 1 49 2797 0.6
ABOUT
__init__.py — CC Lab-2
main.py
__init__.py
from database import get_db
def checkout_logic():
db = get_db()
db.row_factory = None
events = db.execute("SELECT fee FROM events").fetchall()
# Uncomment this line initially for the crash screenshot task
# 1 / 0
total = 0
for e in events:
fee = e[0]
while fee > 0:
total += 1
fee -= 1
return total
EXPLORER
OPEN EDITORS
main.py PES2UG2...
__init__.py PES2U...
CC LAB-2
PES2UG23CS028
__pycache__
.venv
checkout
__pycache__
__init__.py
locust
templates
database.py
fest.db
insert_events.py
main.py
requirements.txt
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python
source "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/bin/activate"
adma@Adithyas-MacBook-Air CC Lab-2 % source "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/bin/activate"
(.venv) adma@Adithyas-MacBook-Air CC Lab-2 % cd PES2UG23CS028 locust -f locust/checkout_locustfile.py
cd: too many arguments
(.venv) adma@Adithyas-MacBook-Air CC Lab-2 % cd PES2UG23CS028 \ locust -f locust/checkout_locustfile.py
cd: too many arguments
(.venv) adma@Adithyas-MacBook-Air CC Lab-2 % locust -f PES2UG23CS028/locust/checkout_locustfile.py
[2026-01-20 14:52:26,098] Adithyas-MacBook-Air/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 14:52:26,099] Adithyas-MacBook-Air/INFO/locust.main: Starting web interface at http://0.0.0.0:8089, press enter to open your default browser.
[2026-01-20 14:57:24,173] Adithyas-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 14:57:24,175] Adithyas-MacBook-Air/INFO/locust.runners: All users spawned: {"CheckoutUser": 1} (1 total users)
OUTLINE
TIMELINE
Launchpad 0 0 -- INSERT -- Spaces: 4 UTF-8 LF Python 3.11.9 (.venv) Go Live Prettier

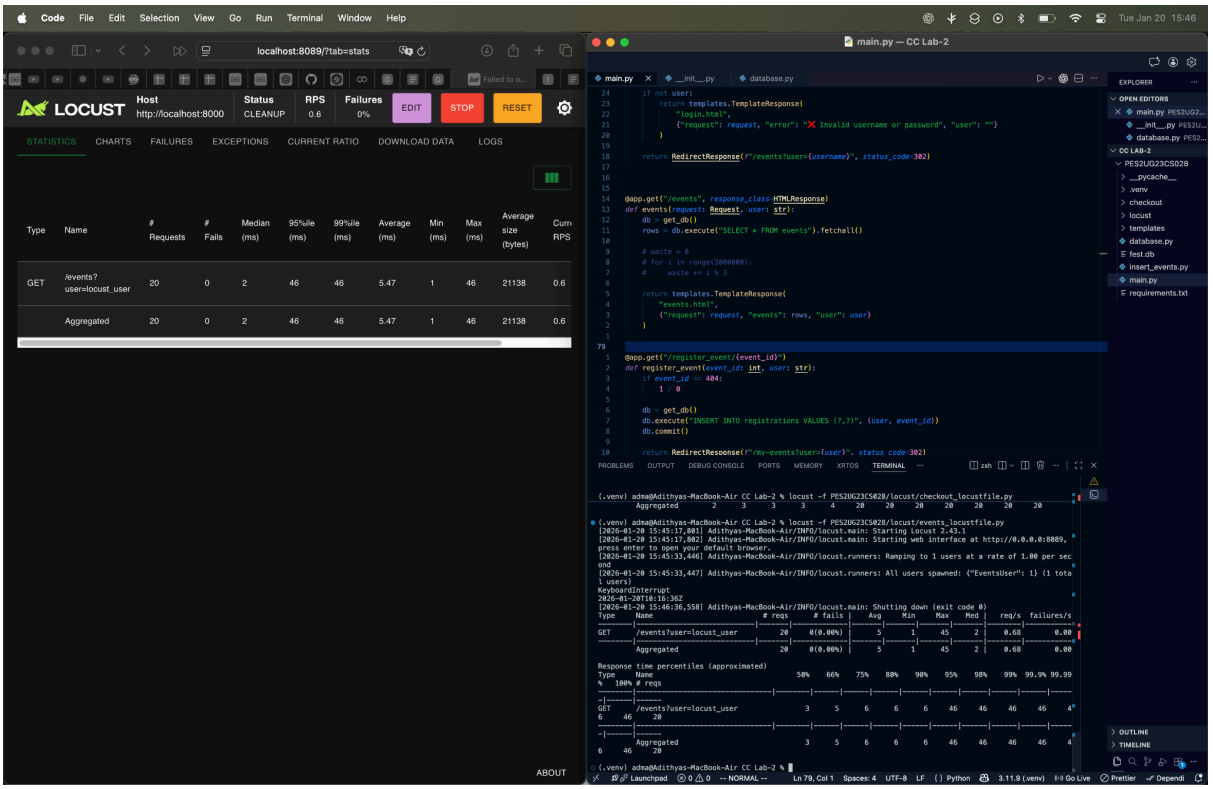
SS5 AFTER:



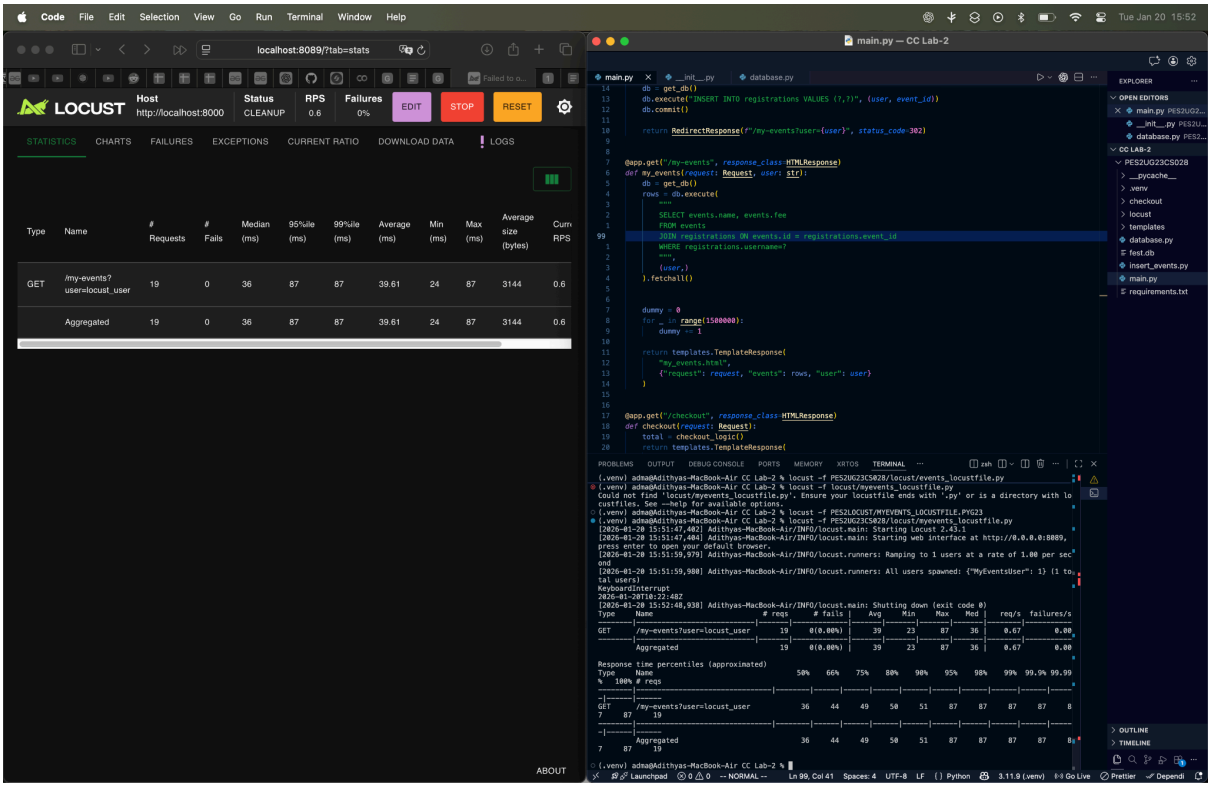
SS6: BEFORE


Code File Edit Selection View Go Run Terminal Window Help
Tue Jan 20 15:48
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
Type
Name
Requests
Fails
Median (ms)
95%ile (ms)
99%ile (ms)
Average (ms)
Min (ms)
Max (ms)
Average size (bytes)
GET
/events?user=locust_user
19
0
67
96
96
72.92
64
96
21138
0.6
Aggregated
19
0
67
96
96
72.92
64
96
21138
0.6
ABOUT
main.py — CC Lab-2
Aggregated 19 0(0.00%) | 72 63 95 67 | 0.63 0.00
Aggregated 67 74 81 84 96 96 96 96 96 9
Aggregated 19
Ln 73, Col 1 Spaces: 4 UTF-8 LF Python 3.11.9 (venv) Go Live Prettier Dependi

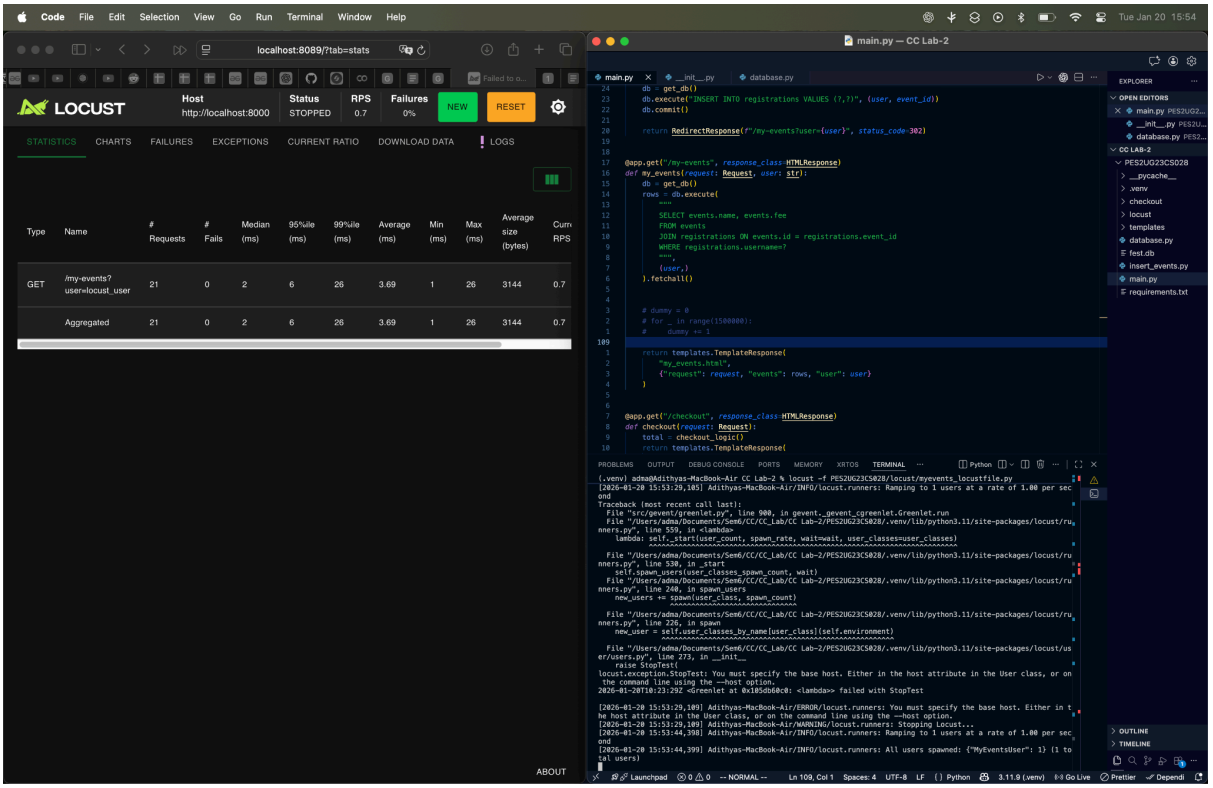
AFTER:


Code File Edit Selection View Go Run Terminal Window Help
Tue Jan 20 15:46
localhost:8089/?tab=stats
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)
GET
/events?user=locust_user
20
0
2
46
46
5.47
1
46
21138
0.6
Aggregated
20
0
2
46
46
5.47
1
46
21138
0.6
ABOUT
main.py — CC Lab-2
Aggregated 20 0(0.00%) | 5 1 45 2 | 0.68 0.00
Aggregated 3 5 6 6 6 46 46 46 46 4
Aggregated 20
Ln 79, Col 1 Spaces: 4 UTF-8 LF Python 3.11.9 (venv) Go Live Prettier Dependi

SS8:


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)
GET
/my-events?user=locust_user
19
0
36
87
87
39.61
24
87
3144
0.6
Aggregated
19
0
36
87
87
39.61
24
87
3144
0.6
ABOUT
main.py — CC Lab-2
(.venv) adma@Adithyas-MacBook-Air CC Lab-2 % locust -f PES2UG23CS028/locust/events_locustfile.py
(.venv) adma@Adithyas-MacBook-Air CC Lab-2 % locust -f locust/myevents_locustfile.py
Could not find 'locust/myevents_locustfile.py'. Ensure your locustfile ends with '.py' or is a directory with locustfiles. See --help for available options.
(.venv) adma@Adithyas-MacBook-Air CC Lab-2 % locust -f PES2LOCUST/MYEVENTS_LOCUSTFILE.PYG23
(.venv) adma@Adithyas-MacBook-Air CC Lab-2 % locust -f PES2UG23CS028/locust/myevents_locustfile.py
[2026-01-20 15:51:47,402] Adithyas-MacBook-Air/INFO/locust.main: Starting Locust 2.43.1
[2026-01-20 15:51:47,404] Adithyas-MacBook-Air/INFO/locust.main: Starting web interface at http://0.0.0.0:8089, press enter to open your default browser.
[2026-01-20 15:51:59,979] Adithyas-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 15:51:59,980] Adithyas-MacBook-Air/INFO/locust.runners: All users spawned: {"MyEventsUser": 1} (1 total users)
KeyboardInterrupt
2026-01-20T10:22:48Z
[2026-01-20 15:52:48,930] Adithyas-MacBook-Air/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 19 0(0.00%) | 39 23 87 36 | 0.67 0.00
Aggregated 19 0(0.00%) | 39 23 87 36 | 0.67 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 36 44 49 50 51 87 87 87 87 87 19
Aggregated 36 44 49 50 51 87 87 87 87 87 19

After:


LOCUST
Host
http://localhost:8000
Status
STOPPED
RPS
0.7
Failures
0%
NEW
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)
GET
/my-events?user=locust_user
21
0
2
6
26
3.69
1
26
3144
0.7
Aggregated
21
0
2
6
26
3.69
1
26
3144
0.7
ABOUT
main.py — CC Lab-2
[2026-01-20 15:53:29,105] Adithyas-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
Traceback (most recent call last):
File "src/gevent/greenlet.py", line 900, in gevent._gevent_cgreenlet.Greenlet.run
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/locust/runners.py", line 559, in <lambda>
lambda: self._start(user_count, spawn_rate, wait=wait, user_classes=user_classes)
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/locust/runners.py", line 530, in _start
self.spawn_users(user_classes_spawn_count, wait)
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/locust/runners.py", line 240, in spawn_users
new_users += spawn(user_class, spawn_count)
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/locust/runners.py", line 220, in spawn
new_user = self.user_classes_by_name[user_class](self.environment)
File "/Users/adma/Documents/Sem6/CC/CC_Lab/CC Lab-2/PES2UG23CS028/.venv/lib/python3.11/site-packages/locust/user/users.py", line 273, in __init__
raise StopTest(
locust.exception.StopTest: You must specify the base host. Either in the host attribute in the User class, or on the command line using the --host option.
2026-01-20T10:23:29Z <Greenlet at 0x105d50c0: <lambda>> failed with StopTest
[2026-01-20 15:53:29,109] Adithyas-MacBook-Air/ERROR/locust.runners: You must specify the base host. Either in the host attribute in the User class, or on the command line using the --host option.
[2026-01-20 15:53:29,109] Adithyas-MacBook-Air/WARNING/locust.runners: Stopping Locust...
[2026-01-20 15:53:44,398] Adithyas-MacBook-Air/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2026-01-20 15:53:44,399] Adithyas-MacBook-Air/INFO/locust.runners: All users spawned: {"MyEventsUser": 1} (1 total users)

i)In this case, the loop was wasting time and increasing the response time for each request.

1. ii)So in this case, we just remove the unnecessary loop
   iii)his reduces the time complexity which in turn reduces the response time. This shows in the reduced average in the above screenshot.

```
total = 0
for e in events:
    fee = e[0]
    while fee > 0:
        total += 1
        fee -= 1

return total
```

```
total = 0
for e in events:
    total += e[0]
return total
```

i)In this case, the loop was wasting time and increasing the response time for each request.
ii)We just remove the waste cycle or comment it.
iii) The loop is removed and the time to send the response for each request decreases thus improving the performance

2.

```
@app.get("/events", response_class=HTMLResponse)
def events(request: Request, user: str):
    db = get_db()
    rows = db.execute("SELECT * FROM events").fetchall()

    waste = 0
    for i in range(3000000):
        waste += i % 3

    return templates.TemplateResponse(
        "events.html",
        {"request": request, "events": rows, "user": user}
    )
```

3.i)In this also, the loop was wasting time and increasing the response time for each request.
ii)We just remove the waste cycle or comment it.
iii) The loop is removed and the time to send the response for each request decreases thus improving the performance

```python
app.get("/my-events", response_class=HTMLResponse)
ef my_events(request: Request, user: str):
    db = get_db()
    rows = db.execute(
        """
        SELECT events.name, events.fee
        FROM events
        JOIN registrations ON events.id = registrations.event_id
        WHERE registrations.username=?
        """,
        (user,)
    ).fetchall()


    # dummy = 0
    # for _ in range(1500000):
    #     dummy += 1

    return templates.TemplateResponse(
        "my_events.html",
        {"request": request, "events": rows, "user": user}
    )
```