Cloud Computing
Lab 3
Name: Vibhav Tiwari | SRN: PES1UG22CS686
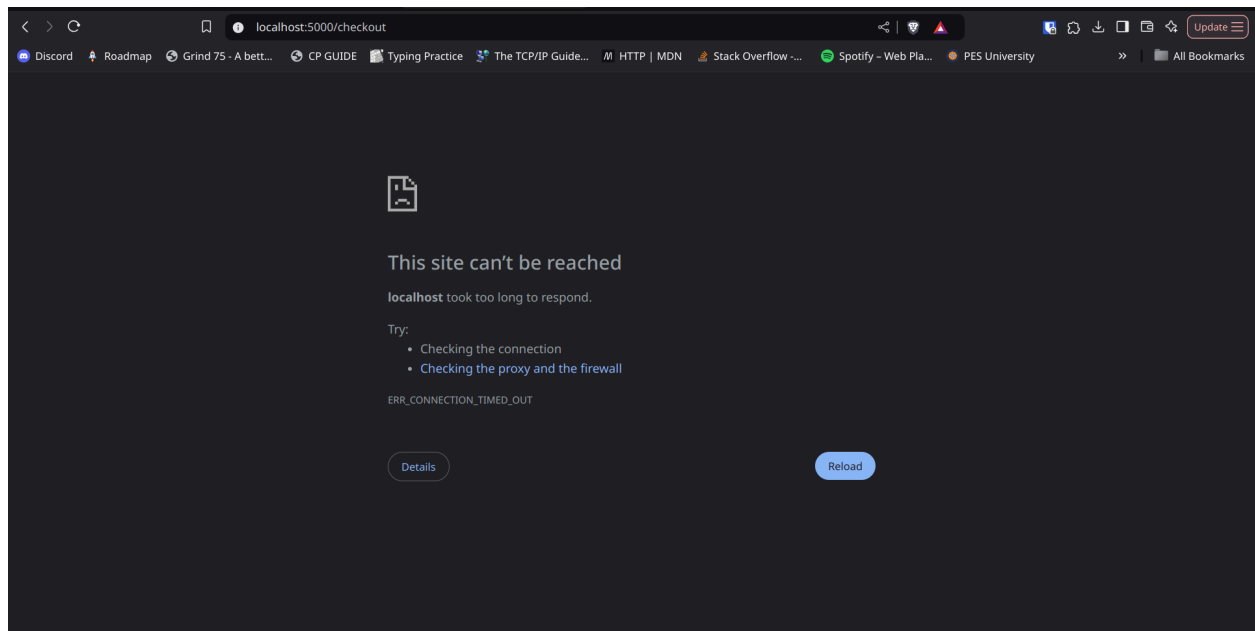
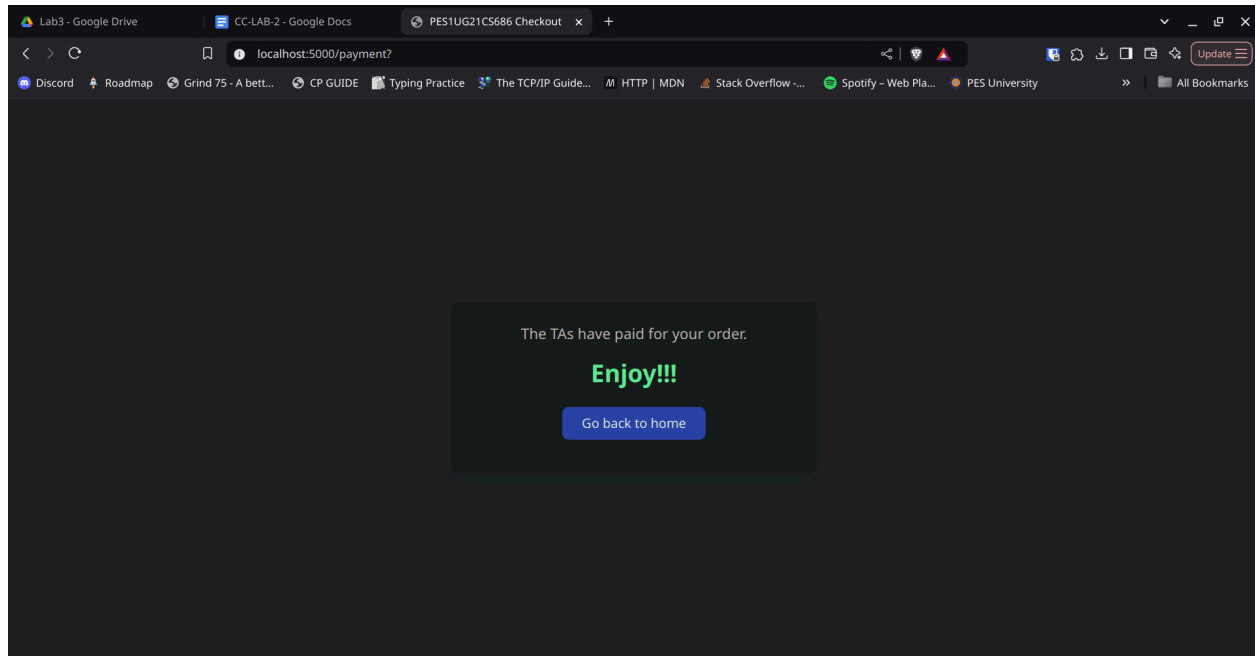**SS1**

Product List

Name	Description	Quantity
Backpack	A durable and stylish backpack for daily use.	10
Wireless Mouse	A sleek and ergonomic wireless mouse with a long battery life.	20
Bluetooth Speaker	A portable Bluetooth speaker with high-quality sound and deep bass.	30
Laptop Stand	An adjustable laptop stand for better posture and cooling.	15
Notebook	A premium notebook with thick, high-quality paper.	50
Smartphone Case	A durable and stylish case for protecting your smartphone.	25
Power Bank	A high-capacity power bank with fast charging support.	20
Headphones	Over-ear headphones with noise cancellation and deep bass.	10
Gaming Keyboard	A mechanical gaming keyboard with RGB lighting.	10
USB-C Hub	A multi-port USB-C hub for all your connectivity needs.	25
Fitness Tracker	A sleek fitness tracker with heart rate monitoring.	20
Travel Mug	An insulated travel mug that keeps your drinks hot or cold.	30
Desk Organizer	A compact desk organizer for keeping your workspace tidy.	40
External Hard Drive	A portable external hard drive with 1TB of storage.	15
Wireless Charger	A fast wireless charger compatible with most devices.	30

SS2

This site can't be reached

localhost took too long to respond.

Try:
- Checking the connection
- Checking the proxy and the firewall

ERR_CONNECTION_TIMED_OUT

Details   Reload

SS3

The TAs have paid for your order.

Enjoy!!!

Go back to home

localhost:5000/payment?

SS4

LOCUST

HOST	STATUS	RPS	FAILURES
http://localhost:5000	STOPPED	21.4	0%

NEW

STATISTICS CHARTS FAILURES EXCEPTIONS CURRENT RATIO DOWNLOAD DATA

Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)
GET	/checkout	1454	0	51	54	56	50.51	45
	Aggregated	1454	0	51	54	56	50.51	45

ABOUT

(.venv) ✗ cygnus@cygnus ~/Data-1/PESU/CC-Lab/Lab3/PES1UG22CS686 locust -f ./
locust/checkout-locustfile.py
[2025-01-28 15:11:56,662] cygnus/INFO/locust.main: Starting Locust 2.32.6
[2025-01-28 15:11:56,663] cygnus/INFO/locust.main: Starting web interface at http:
//0.0.0.0:8089
[2025-01-28 15:12:36,864] cygnus/INFO/locust.runners: Ramping to 1 users at a rate
 of 1.00 per second
[2025-01-28 15:12:36,876] cygnus/INFO/locust.runners: All users spawned: {"checkou
t": 1} (1 total users)
KeyboardInterrupt
2025-01-28T09:45:17Z
[2025-01-28 15:15:17,326] cygnus/INFO/locust.main: Shutting down (exit code 0)
Type   Name   # req
s   # fails | Avg   Min   Max   Med | req/s failures/s
--------|----------|-------|-------|-------|-------|--------|-----------|------
-|----------|-------|-------|-------|-------|--------|-----------|------
GET   /checkout   145
4   0(0.00%) | 50   44   65   51 | 19.75   0.00
--------|----------|-------|-------|-------|-------|--------|-----------|------
-|----------|-------|-------|-------|-------|--------|-----------|------
         Aggregated   145
4   0(0.00%) | 50   44   65   51 | 19.75   0.00

Response time percentiles (approximated)
Type   Name   50%   66%   75%   80%   90%   95%   98%   99% 99.9% 99.99%   100% # req
s
--------|-------|------|------|------|------|------|------|------|------|------|------|------|--
-
GET   /checkout 51   52   52   53   53   54   55   56   61   65   65 145
4
--------|-------|------|------|------|------|------|------|------|------|------|------|------|--
-
         Aggregated 51   52   52   53   53   54   55   56   61   65   65 145
4

SS5

Browser (left):

LOCUST

HOST	STATUS	RPS	FAILURES	
http://localhost:5000	STOPPED	81.5	0%	NEW

STATISTICS CHARTS FAILURES EXCEPTIONS CURRENT RATIO DOWNLOAD DATA

Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)
GET	/checkout	5881	0	12	14	14	12.27	11
	Aggregated	5881	0	12	14	14	12.27	11

ABOUT

Terminal (right):

```
Traceback (most recent call last):
  File "src/gevent/greenlet.py", line 900, in gevent._gevent_cgreenlet.Greenlet.run
  File "/home/cygnus/Data-1/PESU/CC-Lab/Lab3/PES1UG22CS686/.venv/lib/python3.10/site-packages/locust/input_events.py", line 108, in input_listener_func
    if input := poller.poll():
  File "/home/cygnus/Data-1/PESU/CC-Lab/Lab3/PES1UG22CS686/.venv/lib/python3.10/site-packages/locust/input_events.py", line 43, in poll
    def poll(_self):
KeyboardInterrupt
Type     Name              # reqs    # fails |    Avg    Min    Max    Med |   req/s  failures/s
--------|-------------------|-------|---------|-------|-------|-------|-------|-------|-----------
GET      /checkout          5881    0(0.00%) |    12     10     49     12 |   81.08     0.00
--------|-------------------|-------|---------|-------|-------|-------|-------|-------|-----------
         Aggregated         5881    0(0.00%) |    12     10     49     12 |   81.08     0.00

Response time percentiles (approximated)
Type     Name               50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99% 100% # reqs
--------|-------------------|------|------|------|------|------|------|------|------|------|------|------
GET      /checkout           12     12     13     13     13     14     14     14     15     49     49  5881
--------|-------------------|------|------|------|------|------|------|------|------|------|------|------
         Aggregated          12     12     13     13     13     14     14     14     15     49     49  5881

(.venv) cygnus@cygnus ~/Data-1/PESU/CC-Lab/Lab3/PES1UG22CS686
```

SS6

Browser (left):

LOCUST

HOST	STATUS	RPS	FAILURES	
http://localhost:5000	STOPPED	564.4	0%	NEW

STATISTICS CHARTS FAILURES EXCEPTIONS CURRENT RATIO DOWNLOAD DATA

Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)
GET	/cart	68101	0	9	11	12	8.73	3
	Aggregated	68101	0	9	11	12	8.73	3

ABOUT

Terminal (right):

PES1UG22CS686 : zsh — Konsole

```
[2025-01-28 15:51:25,093] cygnus/INFO/locust.main: Starting Locust 2.32.6
[2025-01-28 15:51:25,094] cygnus/INFO/locust.main: Starting web interface at http://0.0.0.0:8089
[2025-01-28 15:52:26,024] cygnus/INFO/locust.runners: Ramping to 5 users at a rate of 5.00 per second
[2025-01-28 15:52:26,114] cygnus/INFO/locust.runners: All users spawned: {"add_to_cart": 5} (5 total users)
KeyboardInterrupt
2025-01-28T10:24:37Z
[2025-01-28 15:54:37,280] cygnus/INFO/locust.main: Shutting down (exit code 0)
Type     Name              # reqs    # fails |    Avg    Min    Max    Med |   req/s  failures/s
--------|-------------------|-------|---------|-------|-------|-------|-------|-------|-----------
GET      /cart              68101   0(0.00%) |     8      2     40      9 |  567.35     0.00
--------|-------------------|-------|---------|-------|-------|-------|-------|-------|-----------
         Aggregated         68101   0(0.00%) |     8      2     40      9 |  567.35     0.00

Response time percentiles (approximated)
Type     Name               50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99% 100% # reqs
--------|-------------------|------|------|------|------|------|------|------|------|------|------|------
GET      /cart                9      9     10     10     11     11     12     12     16     20     41  68101
--------|-------------------|------|------|------|------|------|------|------|------|------|------|------
         Aggregated           9      9     10     10     11     11     12     12     16     20     41  68101

(.venv) cygnus@cygnus ~/Data-1/PESU/CC-Lab/Lab3/PES1UG22CS686
```
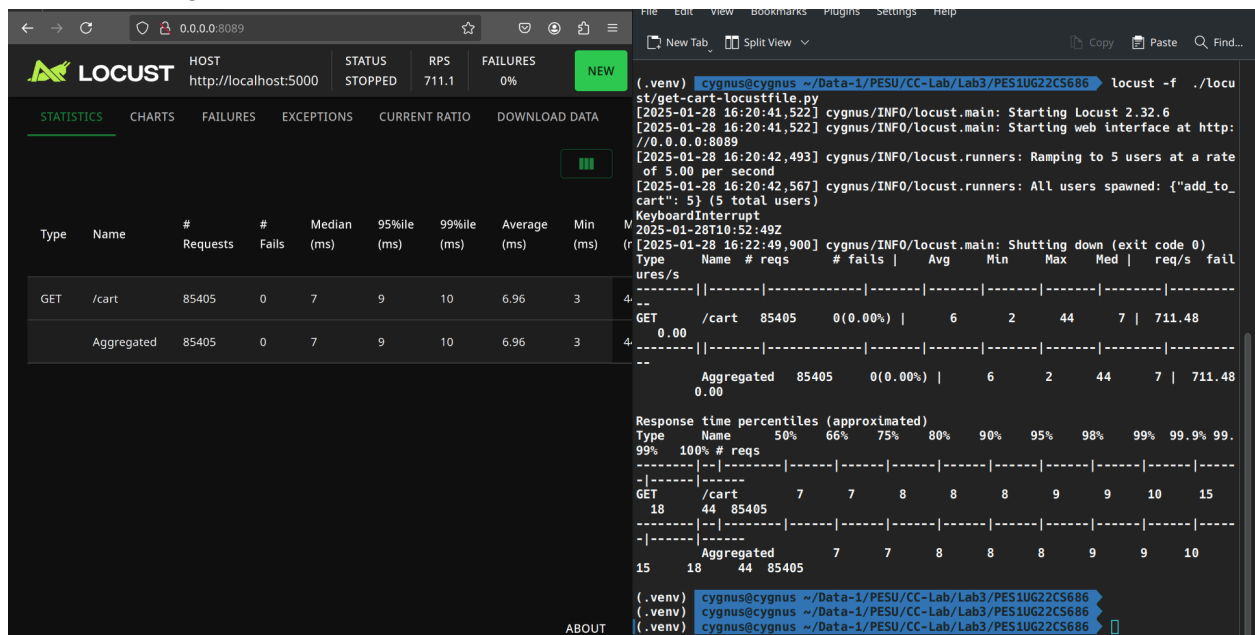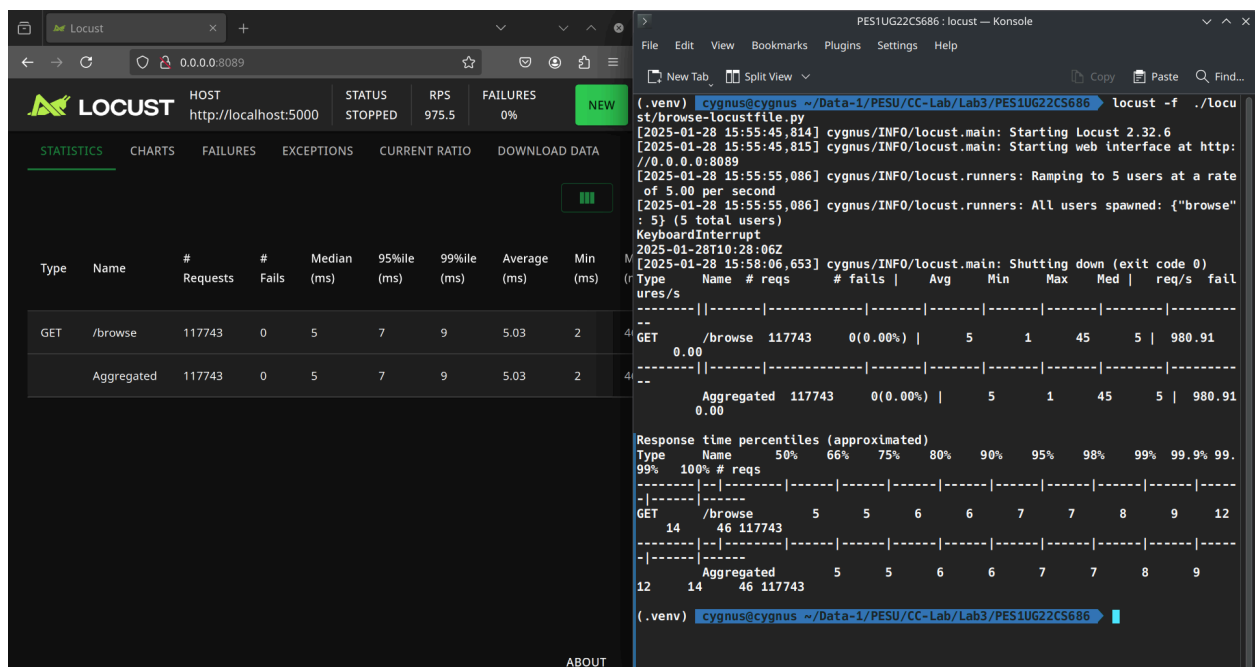
SS7

Optimizations applied:
- In cart/__init__.py: get_cart() replace for loops with list comprehension
- In cart/dao.py: get_cart() replace for loops with list comprehension

Justification
- List comprehension in Python is slightly faster than using for/append for iteratively building lists

SS8

SS9

Optimizations applied:
- In products/__init__.py: list_products() replace for loop with list comprehension
- In products/dao.py: list_products() replace for loop with list comprehension
- In products/dao.py: list_products() remove unnecessary sort() call