CLOUD COMPUTING

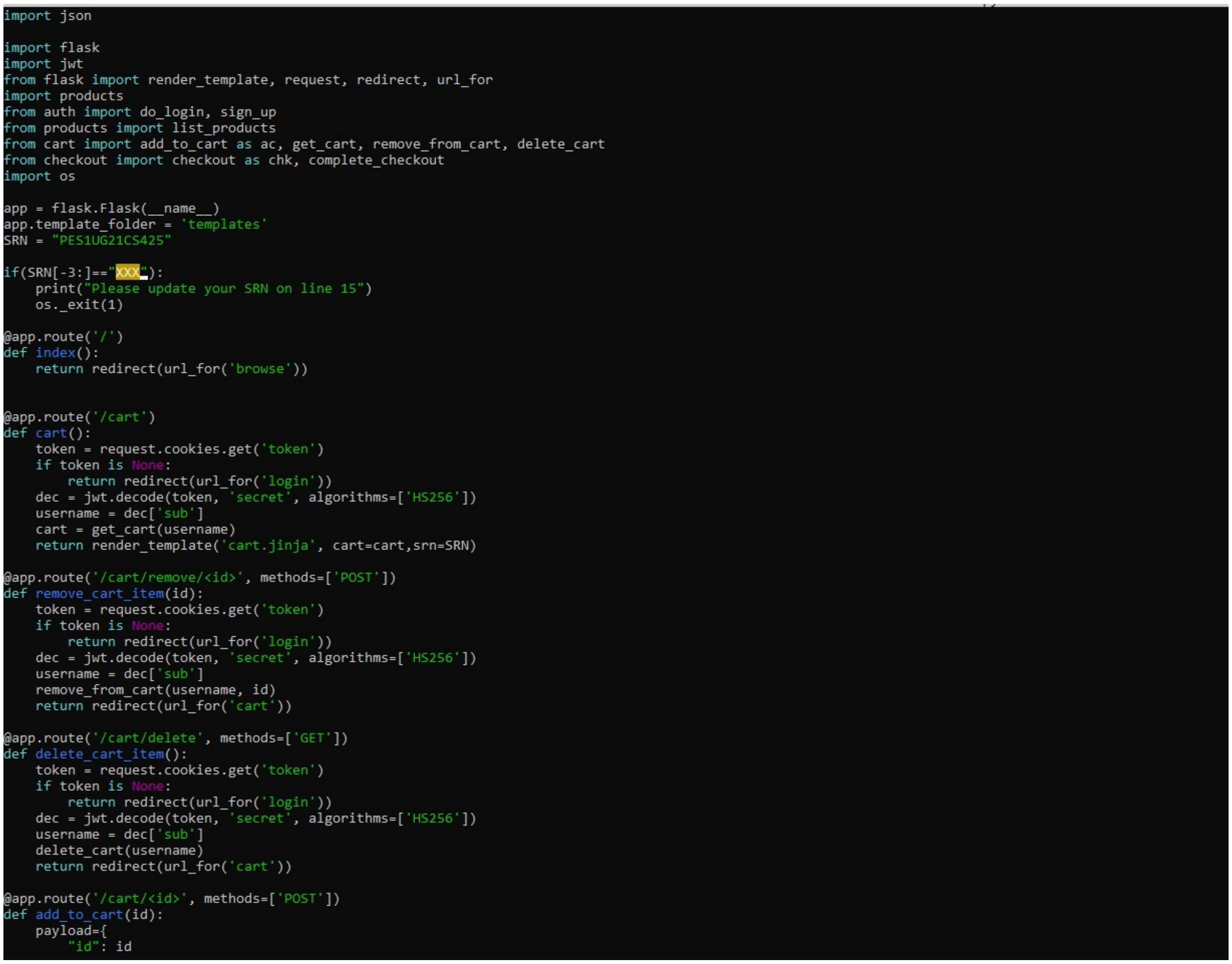
LAB -03

SRN: PES1UG22CS425

NAME : PRAKASH

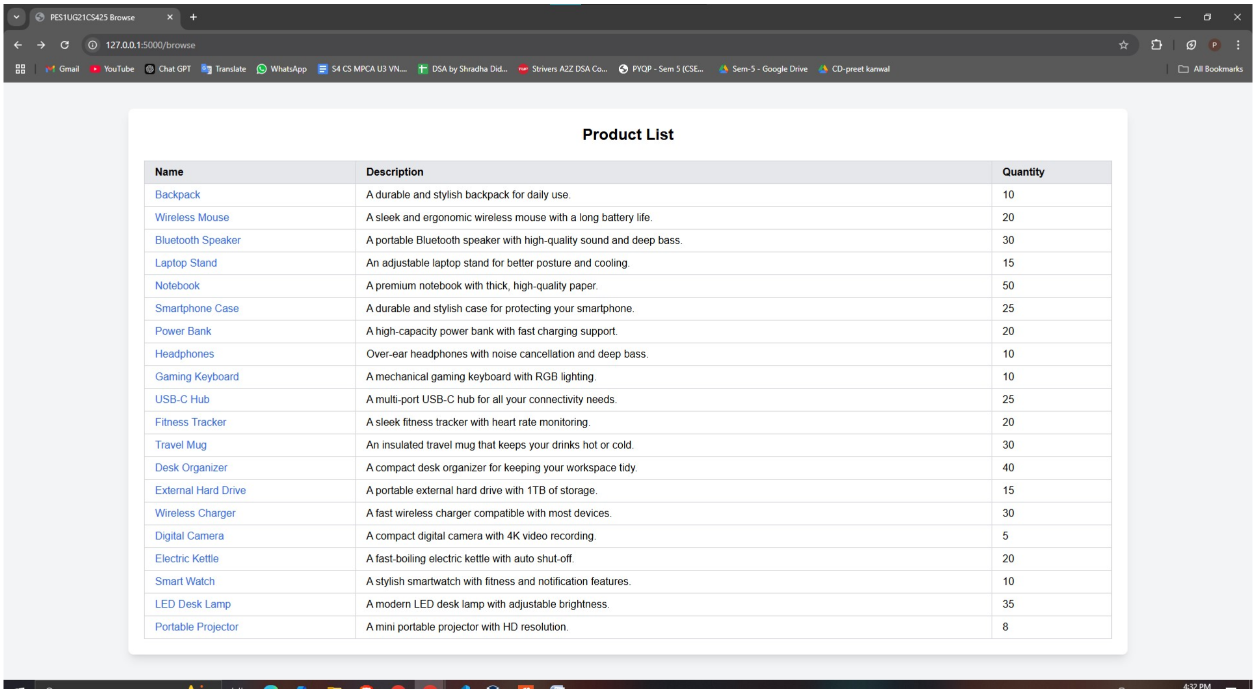
SECTION : G

CODE EDITED SCREENSHOT



```
import json

import flask
import jwt
from flask import render_template, request, redirect, url_for
import products
from auth import do_login, sign_up
from products import list_products
from cart import add_to_cart as ac, get_cart, remove_from_cart, delete_cart
from checkout import checkout as chk, complete_checkout
import os

app = flask.Flask(__name__)
app.template_folder = 'templates'
SRN = "PES1UG21CS425"

if(SRN[-3:]=="XXX"):
    print("Please update your SRN on line 15")
    os._exit(1)

@app.route('/')
def index():
    return redirect(url_for('browse'))


@app.route('/cart')
def cart():
    token = request.cookies.get('token')
    if token is None:
        return redirect(url_for('login'))
    dec = jwt.decode(token, 'secret', algorithms=['HS256'])
    username = dec['sub']
    cart = get_cart(username)
    return render_template('cart.jinja', cart=cart,srn=SRN)

@app.route('/cart/remove/<id>', methods=['POST'])
def remove_cart_item(id):
    token = request.cookies.get('token')
    if token is None:
        return redirect(url_for('login'))
    dec = jwt.decode(token, 'secret', algorithms=['HS256'])
    username = dec['sub']
    remove_from_cart(username, id)
    return redirect(url_for('cart'))

@app.route('/cart/delete', methods=['GET'])
def delete_cart_item():
    token = request.cookies.get('token')
    if token is None:
        return redirect(url_for('login'))
    dec = jwt.decode(token, 'secret', algorithms=['HS256'])
    username = dec['sub']
    delete_cart(username)
    return redirect(url_for('cart'))

@app.route('/cart/<id>', methods=['POST'])
def add_to_cart(id):
    payload={
        "id": id
```

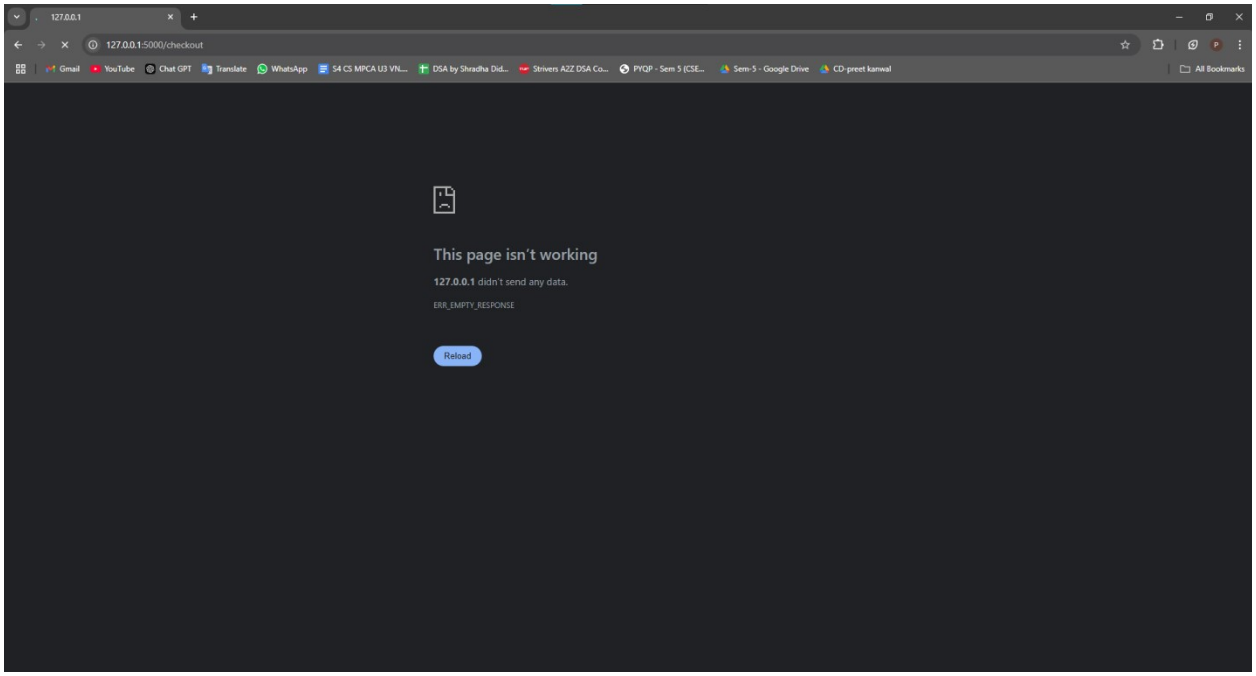
SS1)



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
Digital Camera	A compact digital camera with 4K video recording.	5
Electric Kettle	A fast-boiling electric kettle with auto shut-off.	20
Smart Watch	A stylish smartwatch with fitness and notification features.	10
LED Desk Lamp	A modern LED desk lamp with adjustable brightness.	35
Portable Projector	A mini portable projector with HD resolution.	8

SS2)

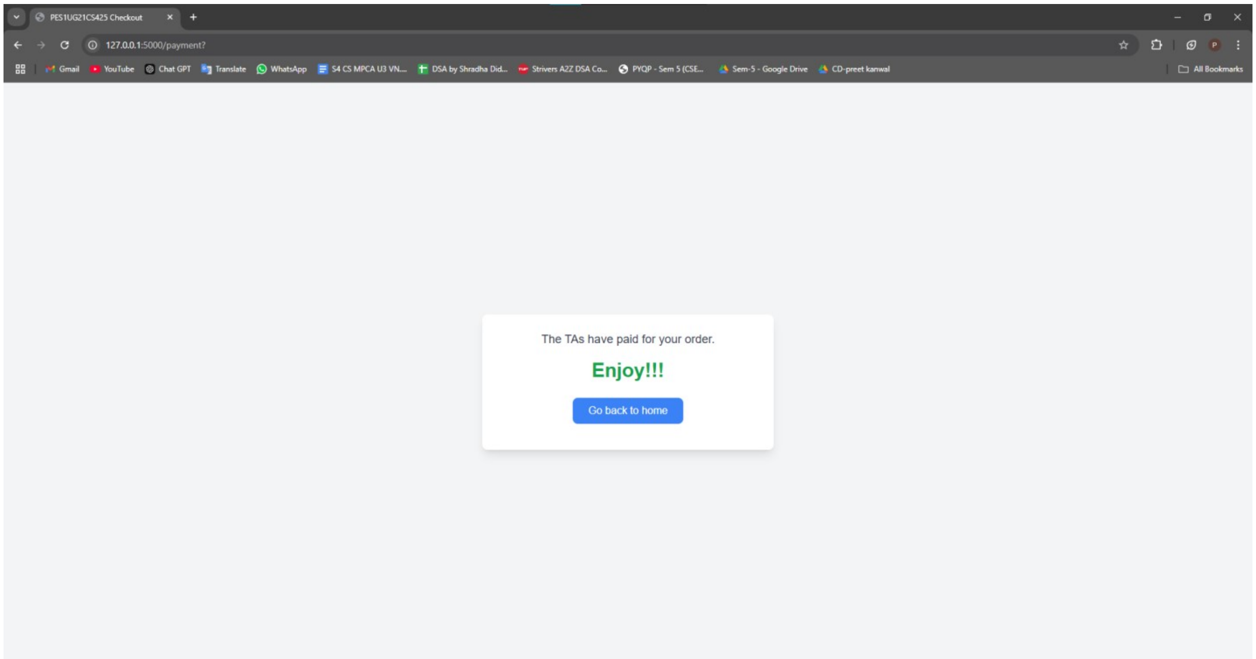


This page isn't working

127.0.0.1 didn't send any data.

ERR_EMPTY_RESPONSE

SS3)

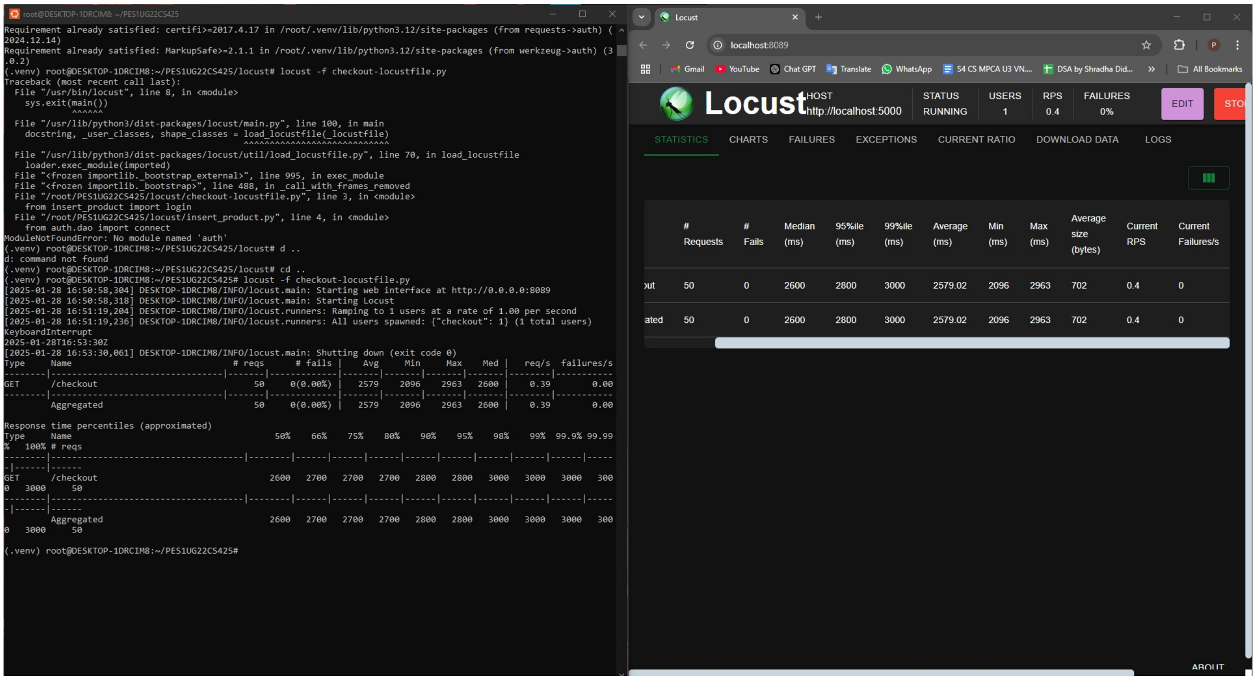


The TAs have paid for your order.

Enjoy!!!

Go back to home

SS4)

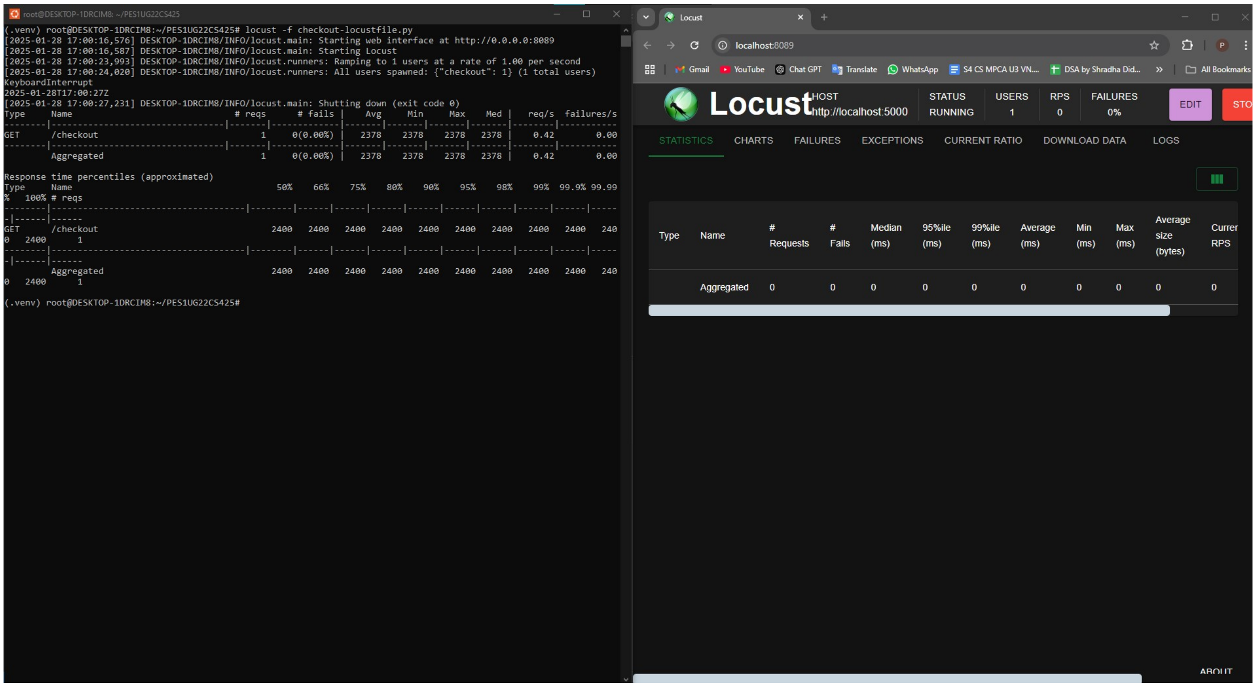


```
Requirement already satisfied: certifi>=2017.4.17 in /root/.venv/lib/python3.12/site-packages (from requests->auth) (
2024.12.14)
Requirement already satisfied: MarkupSafe>=2.1.1 in /root/.venv/lib/python3.12/site-packages (from werkzeug->auth) (3
.0.2)
(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425/locust# locust -f checkout-locustfile.py
Traceback (most recent call last):
  File "/usr/bin/locust", line 8, in <module>
    sys.exit(main())
             ^^^^^^
  File "/usr/lib/python3/dist-packages/locust/main.py", line 100, in main
    docstring, _user_classes, shape_classes = load_locustfile(_locustfile)
                                              ^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "/usr/lib/python3/dist-packages/locust/util/load_locustfile.py", line 70, in load_locustfile
    loader.exec_module(imported)
  File "<frozen importlib._bootstrap_external>", line 995, in exec_module
  File "<frozen importlib._bootstrap>", line 488, in _call_with_frames_removed
  File "/root/PES1UG22CS425/locust/checkout-locustfile.py", line 3, in <module>
    from insert_product import login
  File "/root/PES1UG22CS425/locust/insert_product.py", line 4, in <module>
    from auth.dao import connect
ModuleNotFoundError: No module named 'auth'
(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425/locust# d ..
d: command not found
(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425/locust# cd ..
(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425# locust -f checkout-locustfile.py
[2025-01-28 16:50:58,304] DESKTOP-1DRCIM8/INFO/locust.main: Starting web interface at http://0.0.0.0:8089
[2025-01-28 16:50:58,318] DESKTOP-1DRCIM8/INFO/locust.main: Starting Locust
[2025-01-28 16:51:19,204] DESKTOP-1DRCIM8/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2025-01-28 16:51:19,236] DESKTOP-1DRCIM8/INFO/locust.runners: All users spawned: {"checkout": 1} (1 total users)
KeyboardInterrupt
2025-01-28T16:53:30Z
[2025-01-28 16:53:30,061] DESKTOP-1DRCIM8/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                  # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|----------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /checkout                                 50     0(0.00%) |   2579    2096    2963   2600 |    0.39        0.00
--------|----------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                                50     0(0.00%) |   2579    2096    2963   2600 |    0.39        0.00

Response time percentiles (approximated)
Type     Name                                          50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /checkout                                    2600   2700   2700   2700   2800   2800   3000   3000   3000    300
0   3000     50
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                   2600   2700   2700   2700   2800   2800   3000   3000   3000    300
0   3000     50

(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425#
```

Locust HOST http://localhost:5000 | STATUS RUNNING | USERS 1 | RPS 0.4 | FAILURES 0%

	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Current RPS	Current Failures/s
out	50	0	2600	2800	3000	2579.02	2096	2963	702	0.4	0
ated	50	0	2600	2800	3000	2579.02	2096	2963	702	0.4	0

SS5)



```
(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425# locust -f checkout-locustfile.py
[2025-01-28 17:00:16,576] DESKTOP-1DRCIM8/INFO/locust.main: Starting web interface at http://0.0.0.0:8089
[2025-01-28 17:00:16,587] DESKTOP-1DRCIM8/INFO/locust.main: Starting Locust
[2025-01-28 17:00:23,993] DESKTOP-1DRCIM8/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2025-01-28 17:00:24,020] DESKTOP-1DRCIM8/INFO/locust.runners: All users spawned: {"checkout": 1} (1 total users)
KeyboardInterrupt
2025-01-28T17:00:27Z
[2025-01-28 17:00:27,231] DESKTOP-1DRCIM8/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                # reqs      # fails |    Avg     Min     Max     Med |   req/s  failures/s
--------|----------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /checkout                                1     0(0.00%) |   2378    2378    2378    2378 |    0.42        0.00
--------|----------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                               1     0(0.00%) |   2378    2378    2378    2378 |    0.42        0.00

Response time percentiles (approximated)
Type     Name                                                50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /checkout                                          2400   2400   2400   2400   2400   2400   2400   2400   2400   240
0   2400      1
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                         2400   2400   2400   2400   2400   2400   2400   2400   2400   240
0   2400      1

(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425#
```

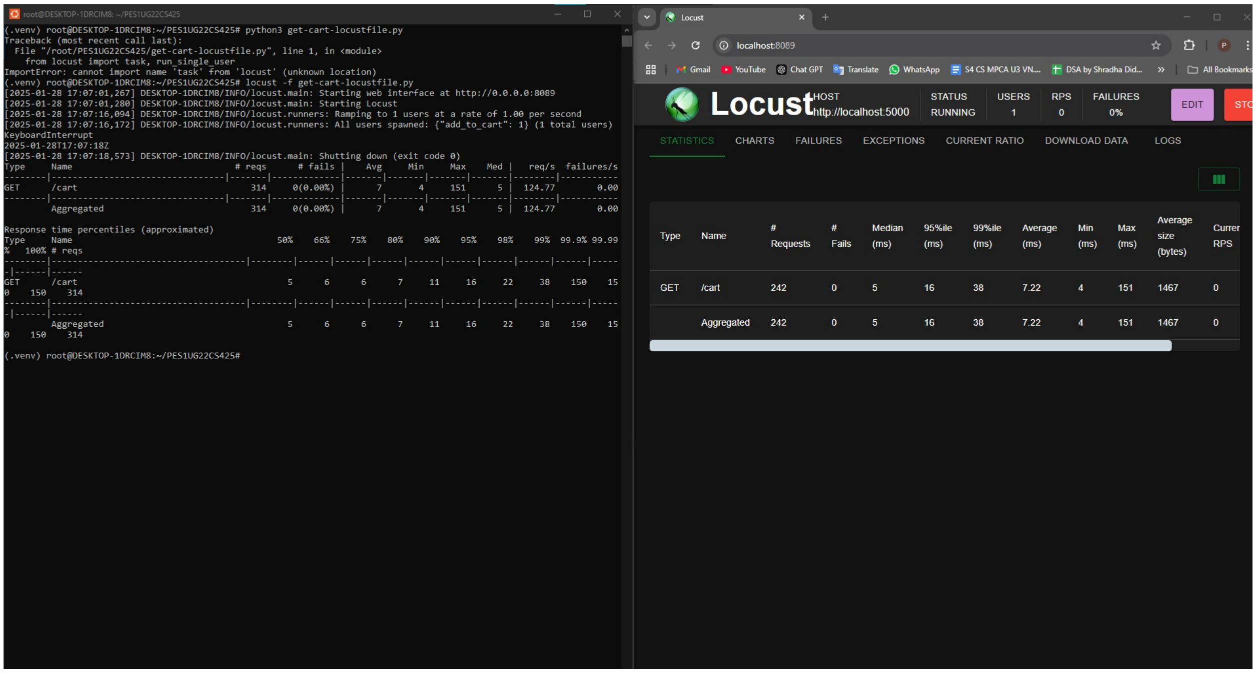
Locust HOST http://localhost:5000 STATUS RUNNING USERS 1 RPS 0 FAILURES 0%

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)	Curren RPS
	Aggregated	0	0	0	0	0	0	0	0	0	0

SS6)

Before : CART



```
(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425# python3 get-cart-locustfile.py
Traceback (most recent call last):
  File "/root/PES1UG22CS425/get-cart-locustfile.py", line 1, in <module>
    from locust import task, run_single_user
ImportError: cannot import name 'task' from 'locust' (unknown location)
(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425# locust -f get-cart-locustfile.py
[2025-01-28 17:07:01,267] DESKTOP-1DRCIM8/INFO/locust.main: Starting web interface at http://0.0.0.0:8089
[2025-01-28 17:07:01,280] DESKTOP-1DRCIM8/INFO/locust.main: Starting Locust
[2025-01-28 17:07:16,094] DESKTOP-1DRCIM8/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2025-01-28 17:07:16,172] DESKTOP-1DRCIM8/INFO/locust.runners: All users spawned: {"add_to_cart": 1} (1 total users)
KeyboardInterrupt
2025-01-28T17:07:18Z
[2025-01-28 17:07:18,573] DESKTOP-1DRCIM8/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                # reqs      # fails |    Avg     Min     Max     Med |   req/s  failures/s
--------|----------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /cart                                  314     0(0.00%) |      7       4     151       5 |  124.77        0.00
--------|----------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                             314     0(0.00%) |      7       4     151       5 |  124.77        0.00

Response time percentiles (approximated)
Type     Name                                                50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /cart                                                 5      6      6      7     11     16     22     38    150     15
0    150    314
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                            5      6      6      7     11     16     22     38    150     15
0    150    314

(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425#
```

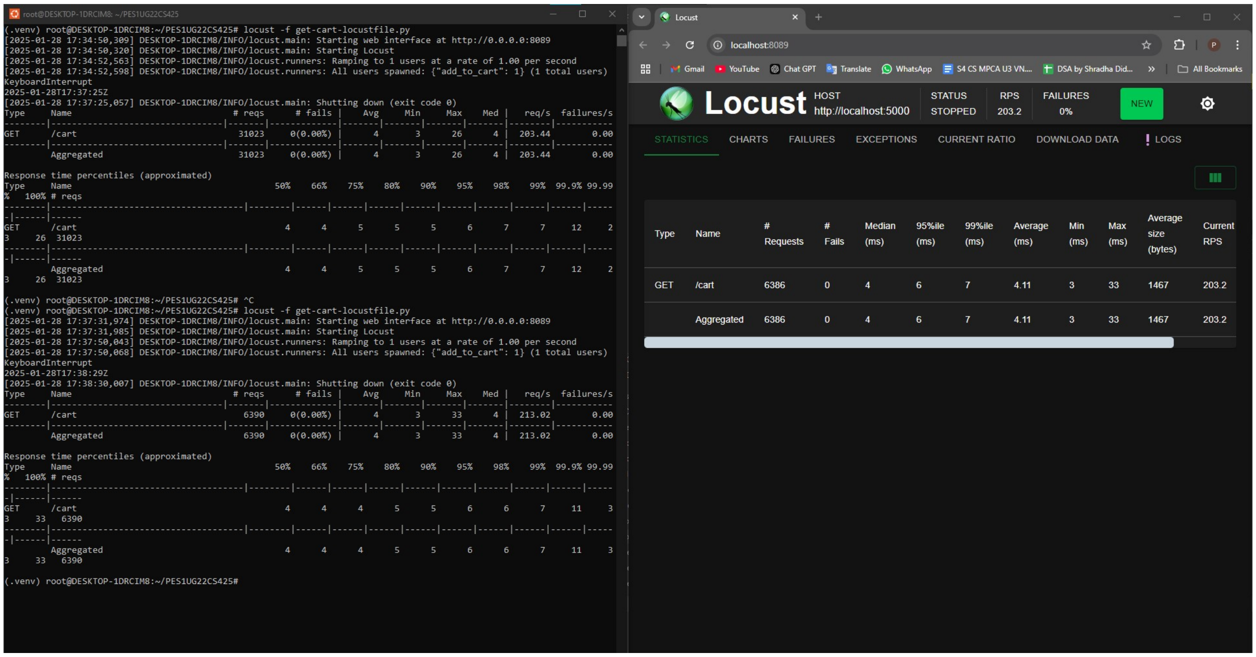
Locust HOST http://localhost:5000 STATUS RUNNING USERS 1 RPS 0 FAILURES 0%

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)	Curren RPS
GET	/cart	242	0	5	16	38	7.22	4	151	1467	0
	Aggregated	242	0	5	16	38	7.22	4	151	1467	0

SS7)

After OPTIMIZATION :



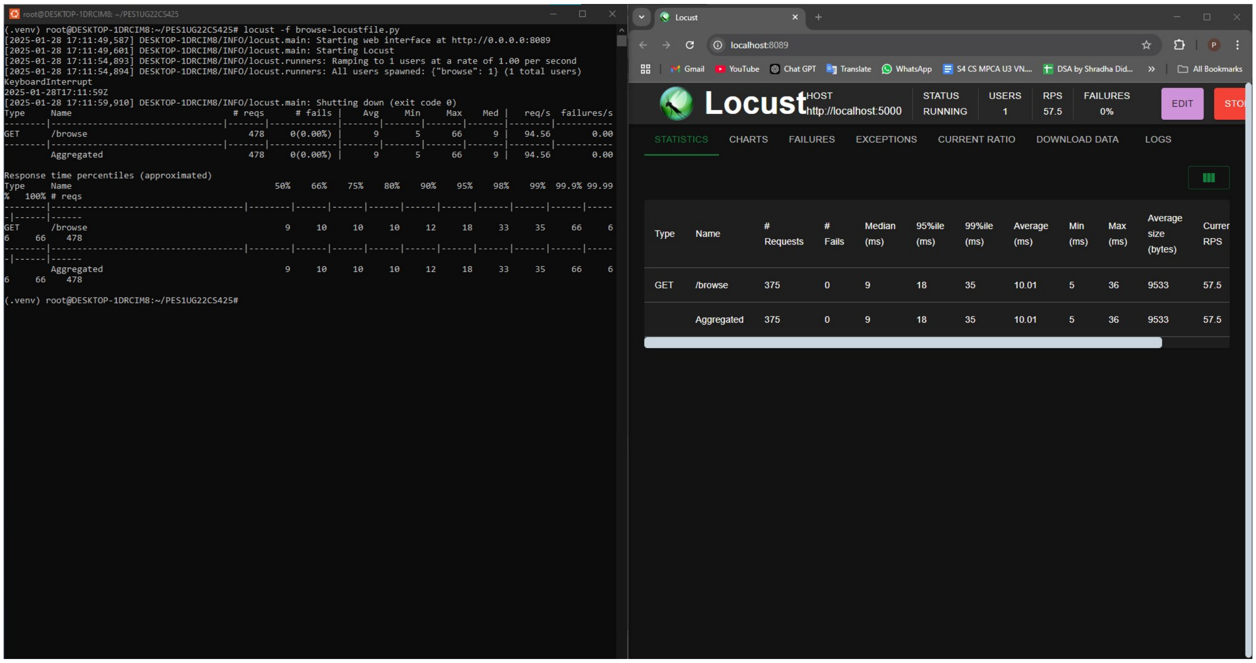
```
(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425# locust -f get-cart-locustfile.py
[2025-01-28 17:34:50,309] DESKTOP-1DRCIM8/INFO/locust.main: Starting web interface at http://0.0.0.0:8089
[2025-01-28 17:34:50,320] DESKTOP-1DRCIM8/INFO/locust.main: Starting Locust
[2025-01-28 17:34:52,563] DESKTOP-1DRCIM8/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2025-01-28 17:34:52,598] DESKTOP-1DRCIM8/INFO/locust.runners: All users spawned: {"add_to_cart": 1} (1 total users)
KeyboardInterrupt
2025-01-28T17:37:25Z
[2025-01-28 17:37:25,057] DESKTOP-1DRCIM8/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                  # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /cart                                  31023     0(0.00%) |      4       3      26      4 |  203.44        0.00
--------|------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                             31023     0(0.00%) |      4       3      26      4 |  203.44        0.00

Response time percentiles (approximated)
Type     Name                                                50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /cart                                                 4      4      5      5      5      6      7      7     12      2
3     26  31023
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                            4      4      5      5      5      6      7      7     12      2
3     26  31023

(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425# ^C
(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425# locust -f get-cart-locustfile.py
[2025-01-28 17:37:31,974] DESKTOP-1DRCIM8/INFO/locust.main: Starting web interface at http://0.0.0.0:8089
[2025-01-28 17:37:31,985] DESKTOP-1DRCIM8/INFO/locust.main: Starting Locust
[2025-01-28 17:37:50,043] DESKTOP-1DRCIM8/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2025-01-28 17:37:50,068] DESKTOP-1DRCIM8/INFO/locust.runners: All users spawned: {"add_to_cart": 1} (1 total users)
KeyboardInterrupt
2025-01-28T17:38:29Z
[2025-01-28 17:38:30,007] DESKTOP-1DRCIM8/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                  # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /cart                                   6390     0(0.00%) |      4       3      33      4 |  213.02        0.00
--------|------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                              6390     0(0.00%) |      4       3      33      4 |  213.02        0.00

Response time percentiles (approximated)
Type     Name                                                50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /cart                                                 4      4      4      5      5      6      6      7     11      3
3     33   6390
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                            4      4      4      5      5      6      6      7     11      3
3     33   6390

(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425#
```

Locust HOST http://localhost:5000 STATUS STOPPED RPS 203.2 FAILURES 0%

Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Current RPS
GET	/cart	6386	0	4	6	7	4.11	3	33	1467	203.2
	Aggregated	6386	0	4	6	7	4.11	3	33	1467	203.2

SS8)

Before (browse-locustfile)



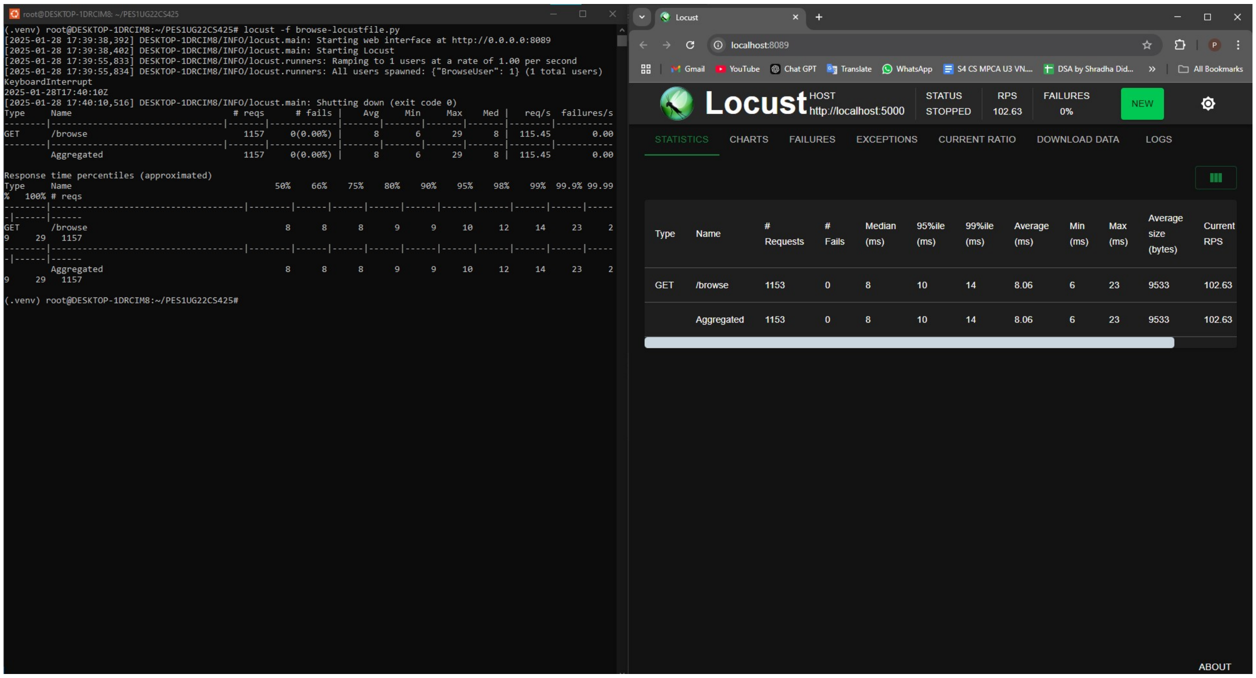
```
(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425# locust -f browse-locustfile.py
[2025-01-28 17:11:49,587] DESKTOP-1DRCIM8/INFO/locust.main: Starting web interface at http://0.0.0.0:8089
[2025-01-28 17:11:49,601] DESKTOP-1DRCIM8/INFO/locust.main: Starting Locust
[2025-01-28 17:11:54,893] DESKTOP-1DRCIM8/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2025-01-28 17:11:54,894] DESKTOP-1DRCIM8/INFO/locust.runners: All users spawned: {"browse": 1} (1 total users)
KeyboardInterrupt
2025-01-28T17:11:59Z
[2025-01-28 17:11:59,910] DESKTOP-1DRCIM8/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                  # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /browse                                  478     0(0.00%) |      9       5      66      9 |   94.56        0.00
--------|------------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                               478     0(0.00%) |      9       5      66      9 |   94.56        0.00

Response time percentiles (approximated)
Type     Name                                                50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /browse                                               9     10     10     10     12     18     33     35     66      6
6     66    478
--------|----------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                            9     10     10     10     12     18     33     35     66      6
6     66    478

(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425#
```

Locust HOST http://localhost:5000 STATUS RUNNING USERS 1 RPS 57.5 FAILURES 0%

Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Curren RPS
GET	/browse	375	0	9	18	35	10.01	5	36	9533	57.5
	Aggregated	375	0	9	18	35	10.01	5	36	9533	57.5

SS9)

After OPTIMIZATION



```
(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425# locust -f browse-locustfile.py
[2025-01-28 17:39:38,392] DESKTOP-1DRCIM8/INFO/locust.main: Starting web interface at http://0.0.0.0:8089
[2025-01-28 17:39:38,402] DESKTOP-1DRCIM8/INFO/locust.main: Starting Locust
[2025-01-28 17:39:55,833] DESKTOP-1DRCIM8/INFO/locust.runners: Ramping to 1 users at a rate of 1.00 per second
[2025-01-28 17:39:55,834] DESKTOP-1DRCIM8/INFO/locust.runners: All users spawned: {"BrowseUser": 1} (1 total users)
KeyboardInterrupt
2025-01-28T17:40:10Z
[2025-01-28 17:40:10,516] DESKTOP-1DRCIM8/INFO/locust.main: Shutting down (exit code 0)
Type     Name                                  # reqs      # fails |    Avg     Min     Max    Med |   req/s  failures/s
--------|---------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
GET      /browse                                 1157     0(0.00%) |      8       6      29      8 |  115.45        0.00
--------|---------------------------------|-------|-------------|-------|-------|-------|-------|--------|-----------
         Aggregated                              1157     0(0.00%) |      8       6      29      8 |  115.45        0.00

Response time percentiles (approximated)
Type     Name                                         50%    66%    75%    80%    90%    95%    98%    99%  99.9% 99.99
%   100% # reqs
--------|------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
GET      /browse                                        8      8      8      9      9     10     12     14     23      2
9     29   1157
--------|------------------------------------|--------|------|------|------|------|------|------|------|------|-----
-|------|------
         Aggregated                                     8      8      8      9      9     10     12     14     23      2
9     29   1157

(.venv) root@DESKTOP-1DRCIM8:~/PES1UG22CS425#
```

Locust HOST http://localhost:5000 STATUS STOPPED RPS 102.63 FAILURES 0%

Type	Name	# Requests	# Fails	Median (ms)	95%ile (ms)	99%ile (ms)	Average (ms)	Min (ms)	Max (ms)	Average size (bytes)	Current RPS
GET	/browse	1153	0	8	10	14	8.06	6	23	9533	102.63
	Aggregated	1153	0	8	10	14	8.06	6	23	9533	102.63

GITHUB LINK :