

Walchand College of Engineering, Sangli

Computer Science & Engineering

Third Year

Course: Advanced Database System

PRN NO : 2020BTECS00207

Name : Kshirsagar Mayuri Manojkumar

Lab course coordinator : Dr.B.F .Momin

Batch: - T5

Assignment No-6

Title: Performance tuning for assignment no. 5 and 6.

Objective/Aim:

1. To do the performance testing of student MIS and online MCQ test system developed using ReactJS, NodeJS and MySQL server.
2. To use apache JMeter for performance testing of different routes.

Introduction:

Performance testing is an important part for every newly developed software application. It helps to figure out if any thing going wrong while requesting for a particular route under certain circumstances like I've tested certain routes for 100 users at the same time and checked the status, average time, throughout etc for each request working fine or not.

Theory:

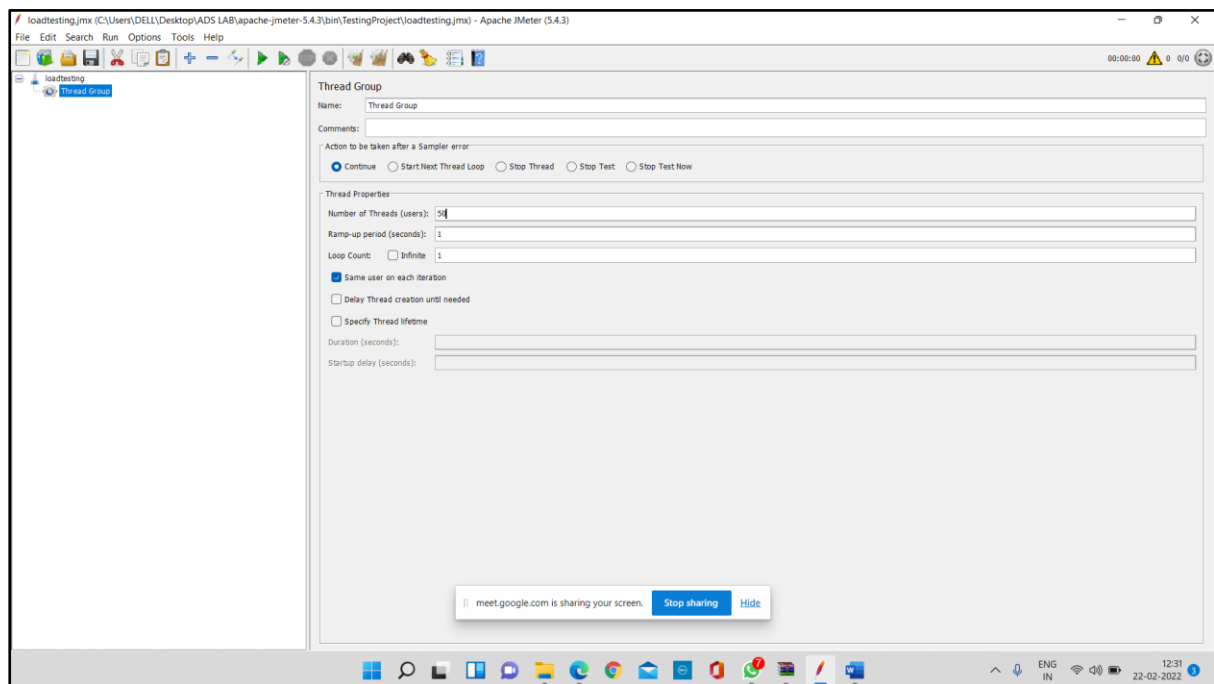
About Apache JMeter:

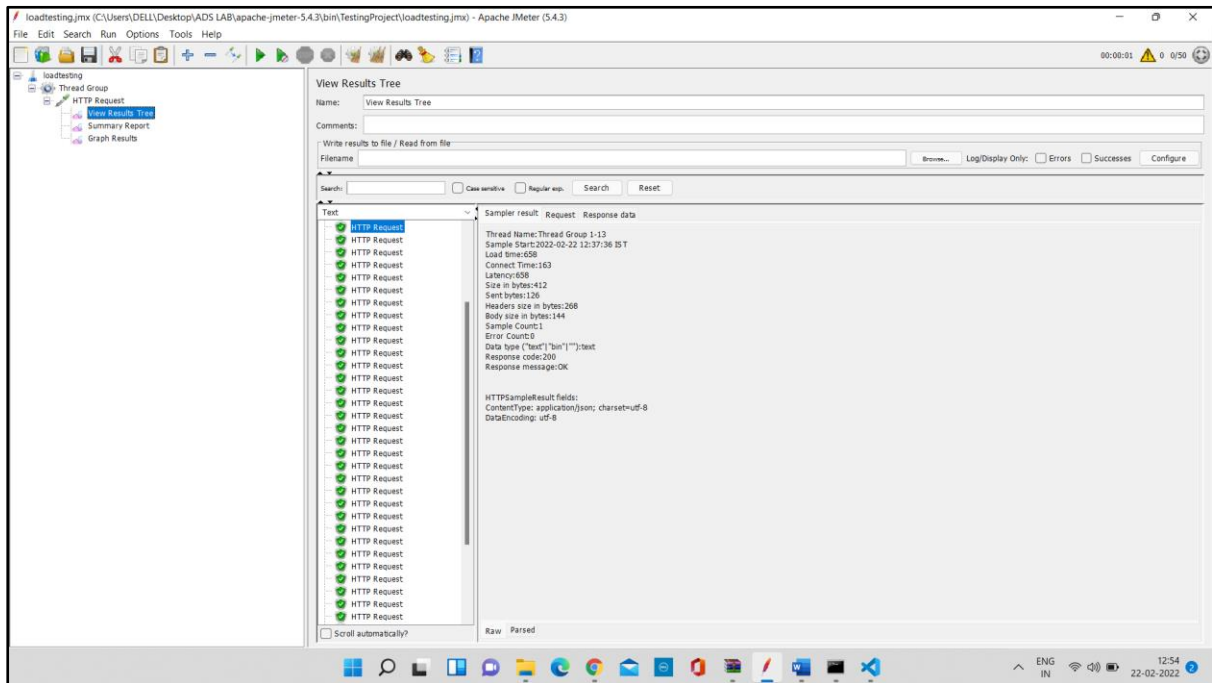
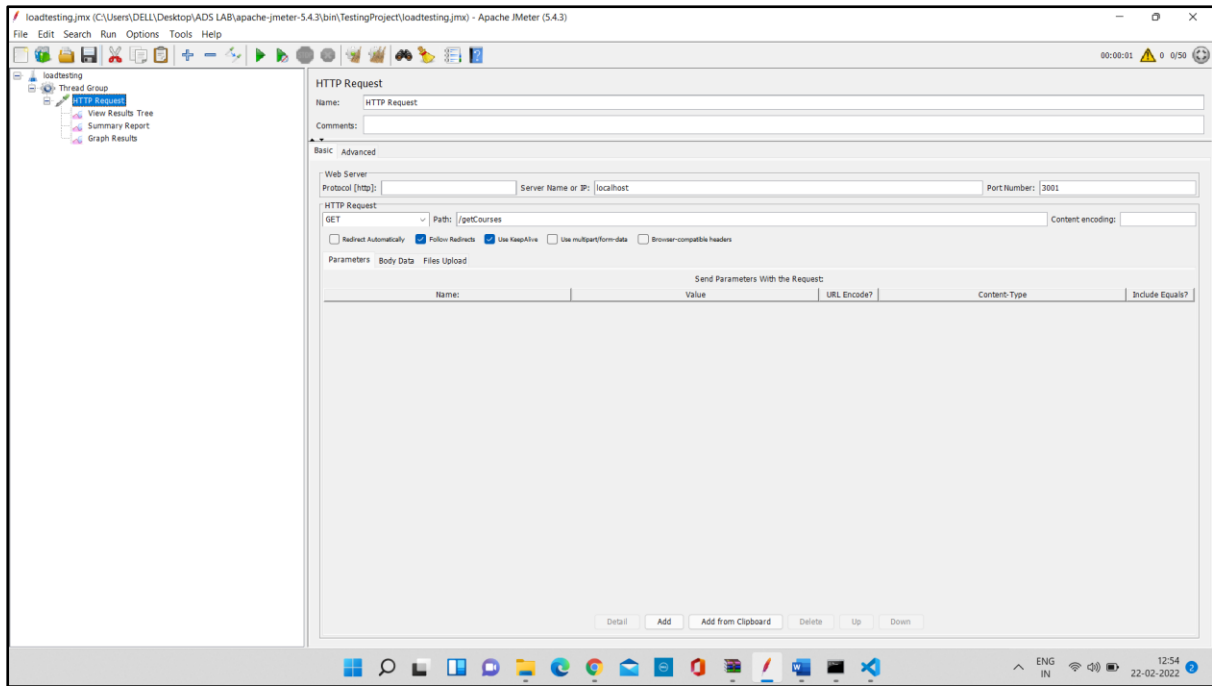
The Apache JMeter application is open-source software, a 100% pure java application designed to load test functional behaviour and measure performance. It was originally designed for testing Web Applications but has since expanded to other test functions e.g., Database via JDBC, TCP, FTP etc. It can be used to simulate a heavy load on a server, group of servers, network or object to test its strength or to analyse overall performance under different load types.

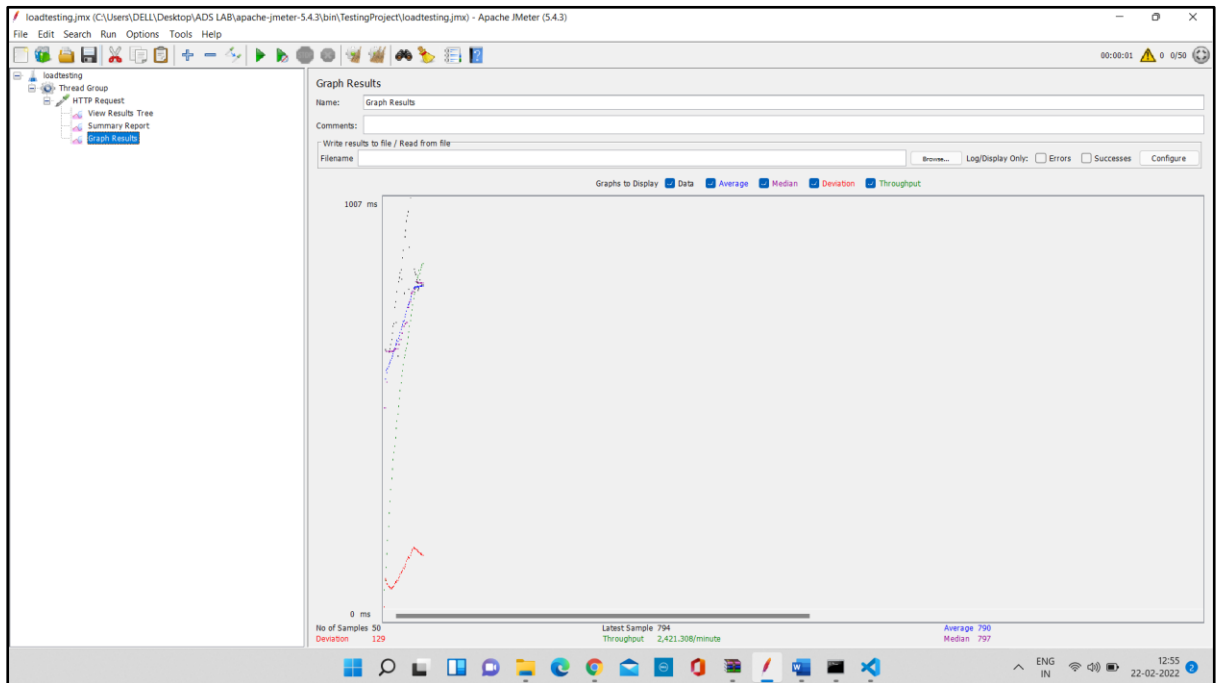
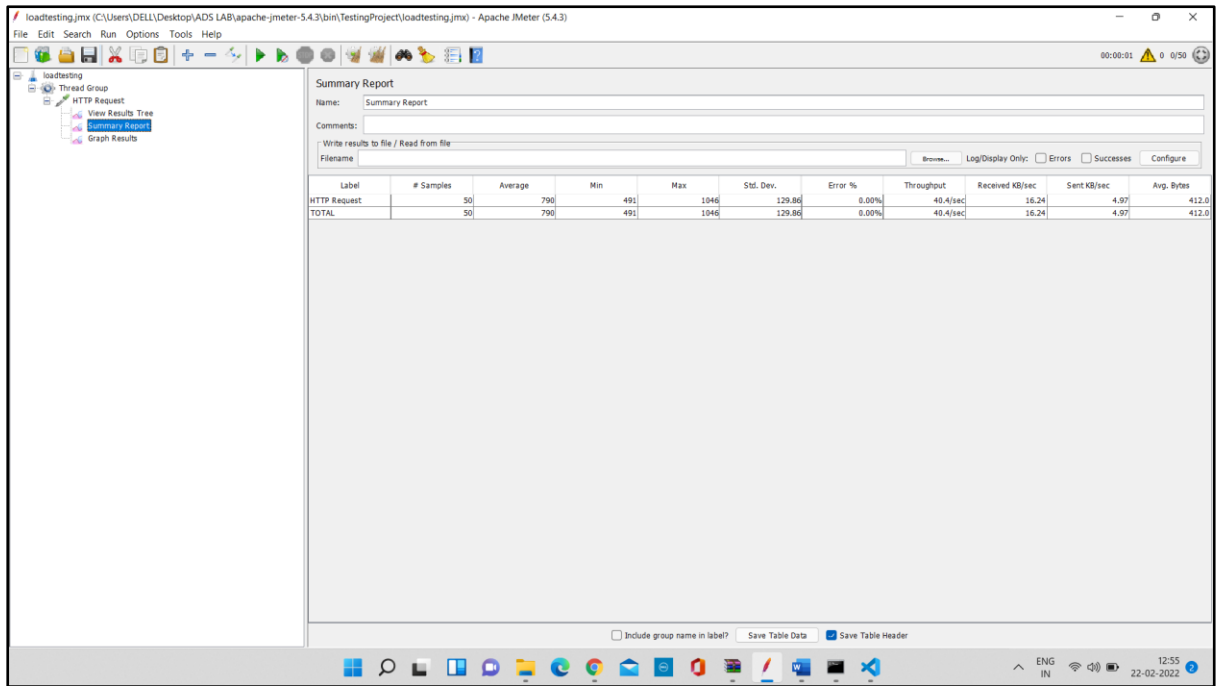
Procedure:

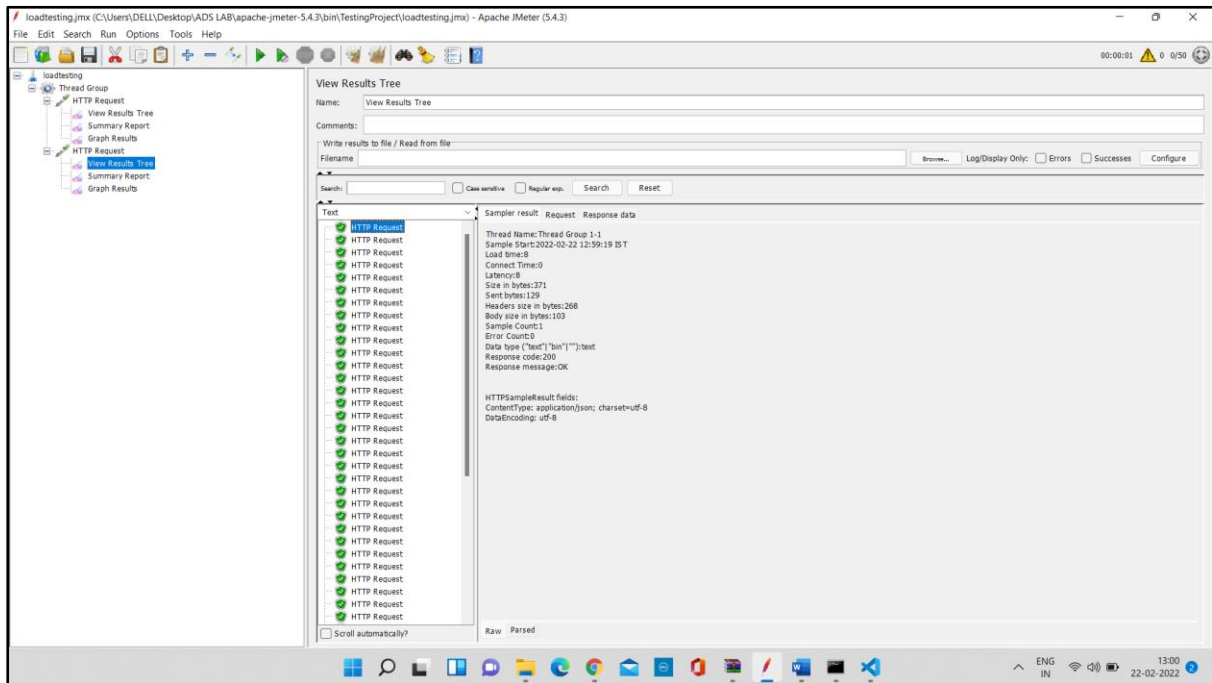
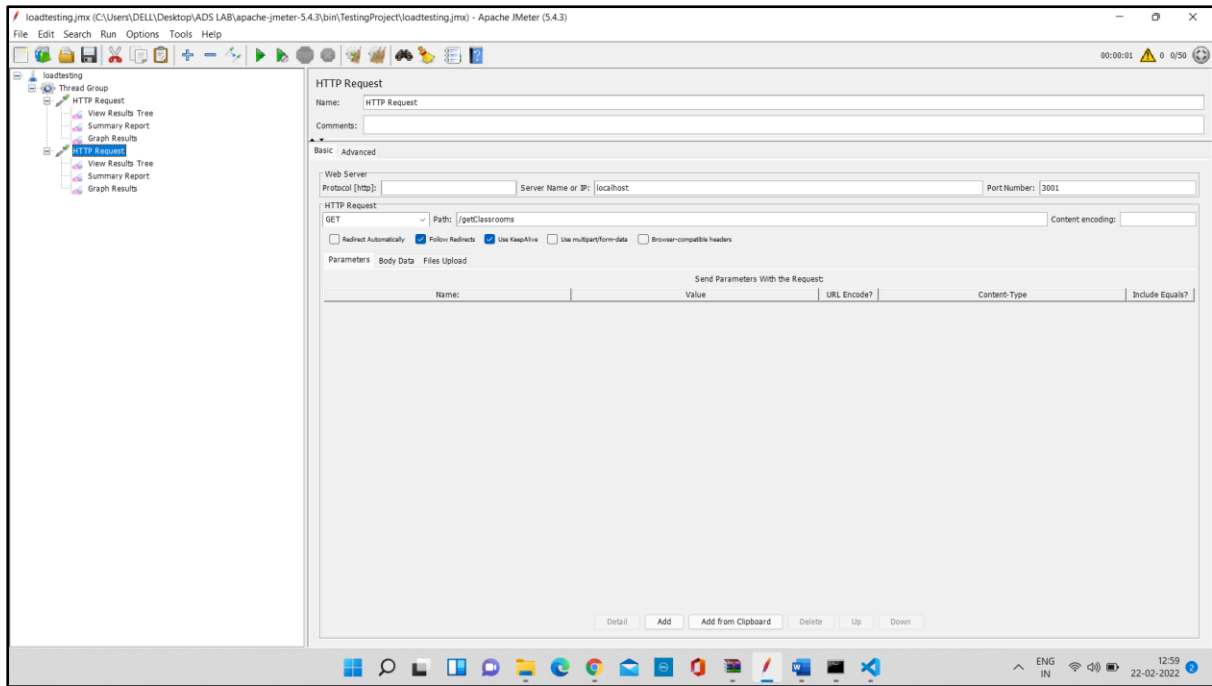
1. Downloaded Apache JMeter from official website.
2. Opened jmeter and created new test plan as loadtesting.jmx.
3. Then created a thread group of 50 threads(users) to test out the different routes implemented in both the websites server part.
4. Added HTTP request as sampled, view result tree, summary report and graph result as listeners and requested routed as shown in the following pictures.

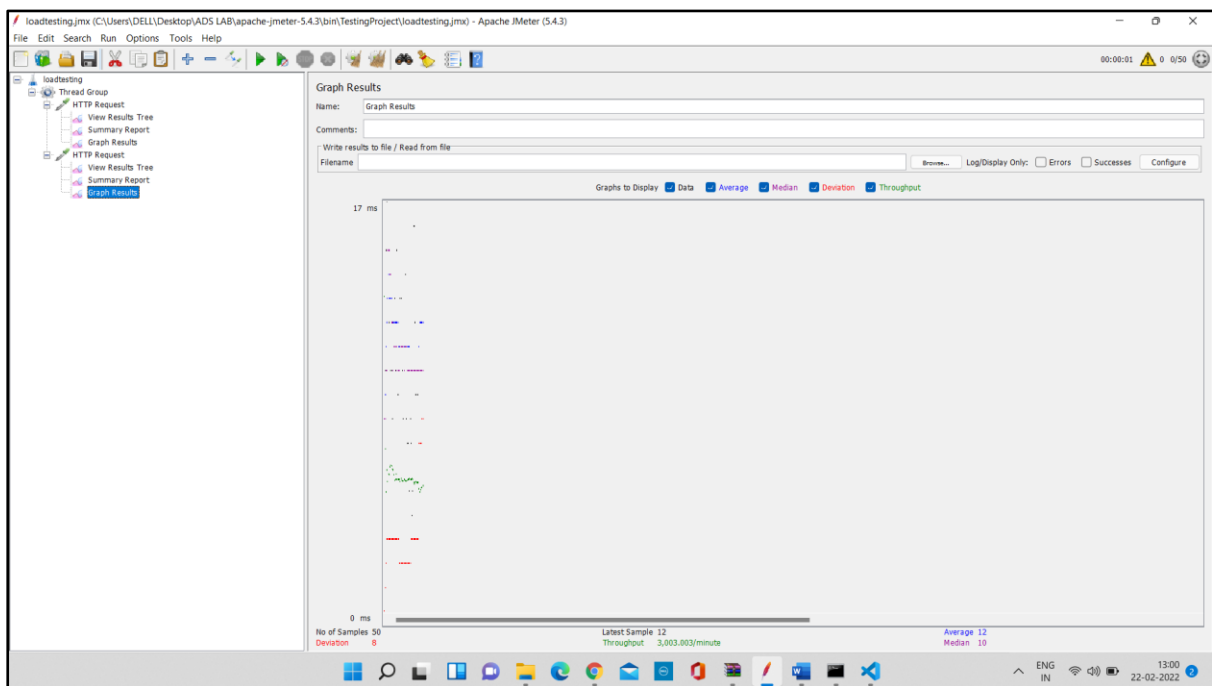
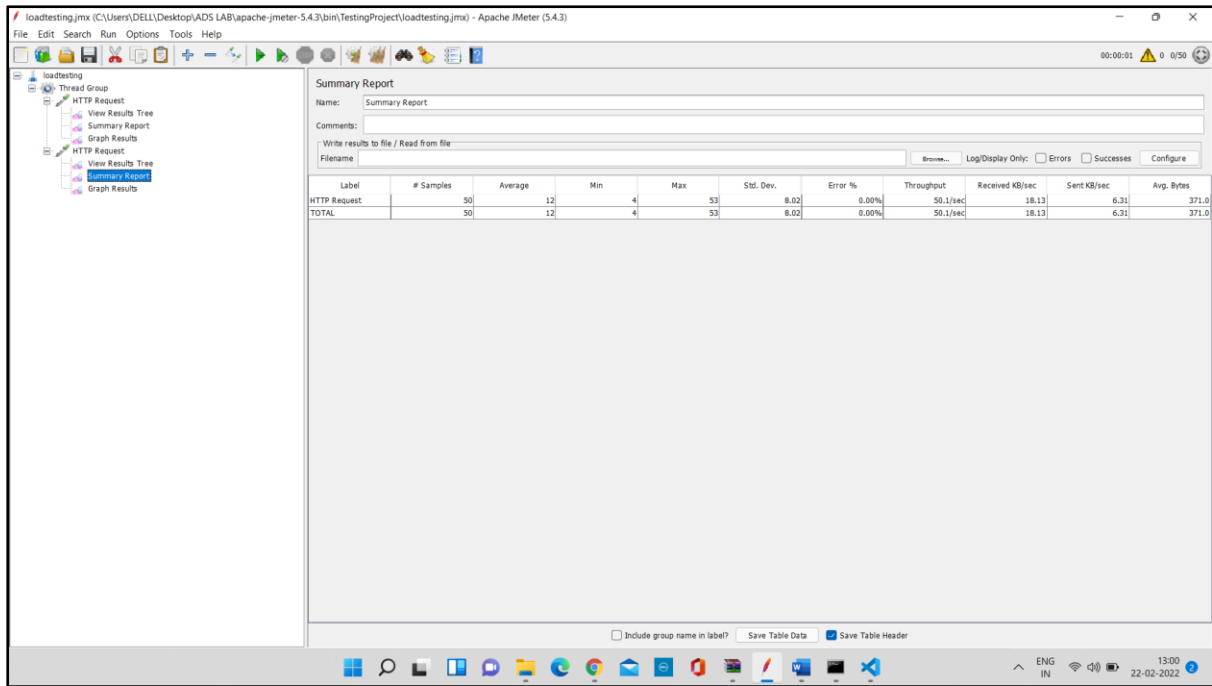
Screenshots:



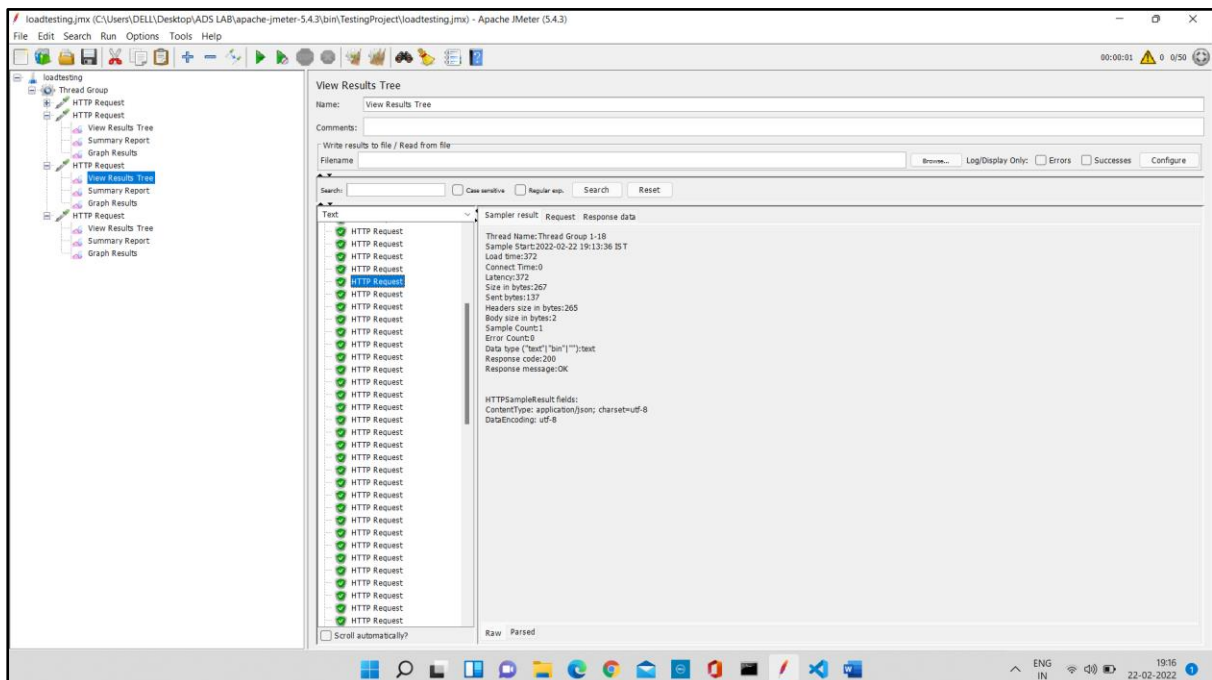
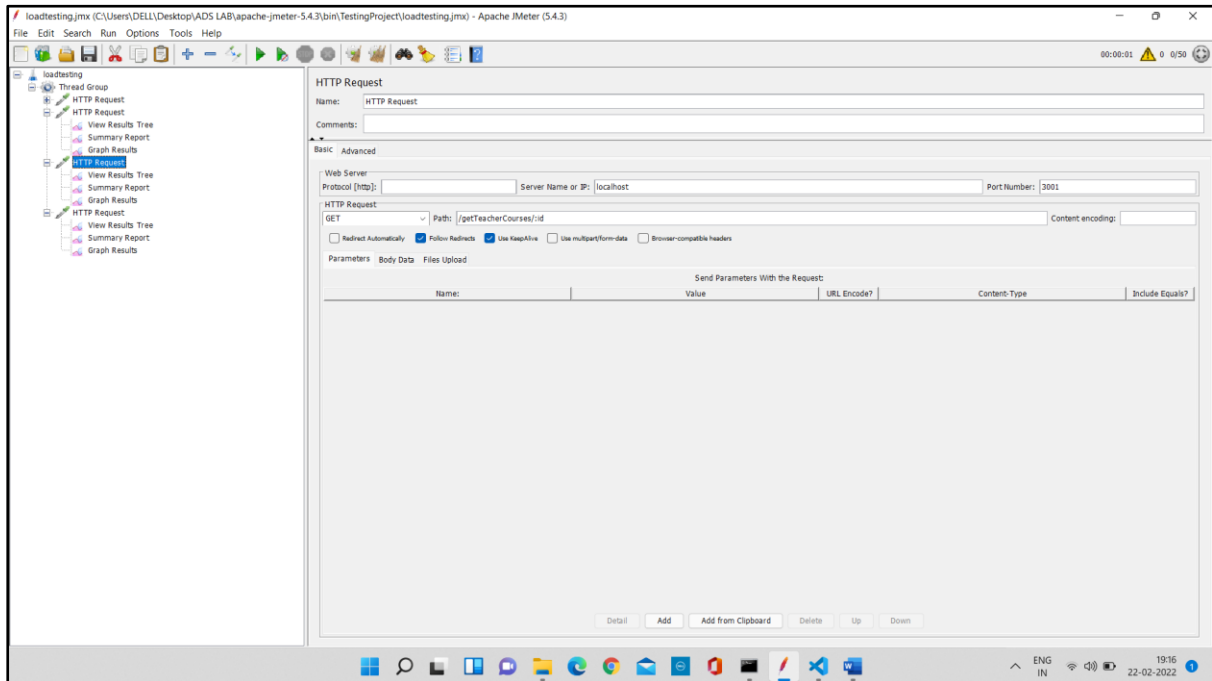








For assignment 5



loadtesting.jmx (C:\Users\DELL\Desktop\ADS LAB\apache-jmeter-5.4.3\bin\TestingProject\loadtesting.jmx) - Apache JMeter (5.4.3)

File Edit Search Run Options Tools Help

loadtesting

- Thread Group
 - HTTP Request
 - View Results Tree
 - Summary Report
 - Graph Results
 - HTTP Request
 - View Results Tree
 - Summary Report
 - Graph Results

View Results Tree

Name: View Results Tree

Comments:

Write results to file / Read from file

Filename: Browse... Log/Display Only: ☐ Errors ☐ Successes ☐ Configure

Search: Case sensitive ☐ Regular exp. ☐ Search Reset

Text

Sampler result: Request Response data

Request Body Request Headers

1 GET http://localhost:3001/getTeacherCourses/:id

2

3 GET data:

4

5 [no cookies]

6

7

Raw HTTP

19:20 22-02-2022

loadtesting.jmx (C:\Users\DELL\Desktop\ADS LAB\apache-jmeter-5.4.3\bin\TestingProject\loadtesting.jmx) - Apache JMeter (5.4.3)

File Edit Search Run Options Tools Help

loadtesting

- Thread Group
 - HTTP Request
 - View Results Tree
 - Summary Report
 - Graph Results
 - HTTP Request
 - View Results Tree
 - Summary Report
 - Graph Results

Summary Report

Name: Summary Report

Comments:

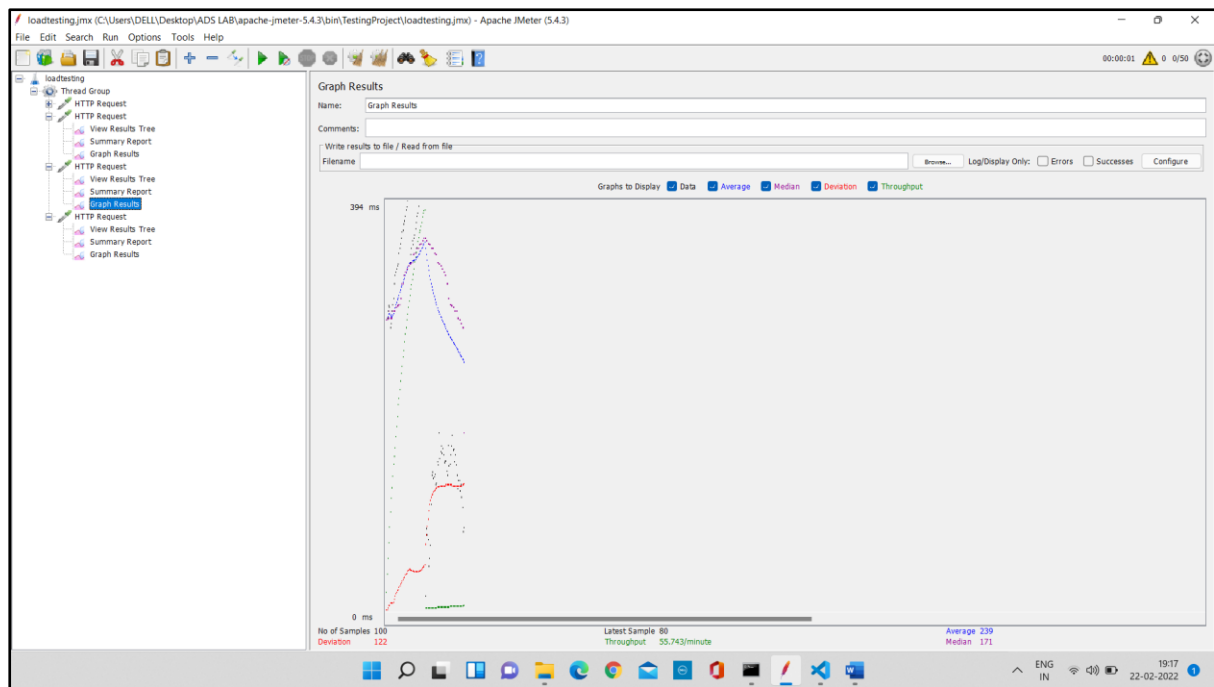
Write results to file / Read from file

Filename: Browse... Log/Display Only: ☐ Errors ☐ Successes ☐ Configure

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request	100	239	14	439	122.06	0.00%	55.7/min	0.24	0.12	267.0
TOTAL	100	239	14	439	122.06	0.00%	55.7/min	0.24	0.12	267.0

Include group name in label? ☐ Save Table Data ☐ Save Table Header ☒

19:17 22-02-2022



loadtesting.jmx (C:\Users\DELL\Desktop\ADS LAB\apache-jmeter-5.4.3\bin\TestingProject\loadtesting.jmx) - Apache JMeter (5.4.3)

File Edit Search Run Options Tools Help

00:00:01 0 0/50

loadtesting

- Thread Group
 - HTTP Request
 - View Results Tree
 - Summary Report
 - Graph Results
 - HTTP Request
 - View Results Tree
 - Summary Report
 - Graph Results
 - HTTP Request
 - View Results Tree
 - Summary Report
 - Graph Results

HTTP Request

Name: HTTP Request

Comments:

Basic Advanced

Web Server

Protocol: Server Name or IP: localhost Port Number: 8081

HTTP Request

GET Path: /getStudentCourses?id Content encoding:

☐ Redirect Automatically ☒ Follow Redirects ☒ Use KeepAlive ☐ Use multipart/form-data ☐ Browser-compatible headers

Parameters Body Data Files Upload

Name	Value	URL Encode?	Content Type	Include Equals?

Detail Add Add from Clipboard Delete Up Down

19:17 22-02-2022

loadtesting.jmx (C:\Users\DELL\Desktop\ADS LAB\apache-jmeter-5.4.3\bin\TestingProject\loadtesting.jmx) - Apache JMeter (5.4.3)

File Edit Search Run Options Tools Help

loadtesting

- Thread Group
 - HTTP Request
 - View Results Tree
 - Summary Report
 - Graph Results

View Results Tree

Name: View Results Tree

Comments:

Write results to file / Read from file:

Filename: Browse... Log/Display Only: ☐ Errors ☐ Successes ☐ Configured

Search: Case sensitive ☐ Regular exp. ☐ Search Reset

Text

Sampler result: Request: Response data

Thread Name: Thread Group 1-2

Sample Start: 2022-02-22 19:15:23 IST

Load time: 52

Connect Time: 0

Latency: 52

Size in bytes: 267

Sent bytes: 137

Headers size in bytes: 265

Body size in bytes: 2

Sample Count: 1

Error Count: 0

Data type: "text" ["bin"] text

Response code: 200

Response message: OK

HTTPSampleResult fields:

ContentType: application/json; charset=utf-8

DataEncoding: utf-8

Raw Parsed

Scroll automatically?

19:17 22-02-2022

loadtesting.jmx (C:\Users\DELL\Desktop\ADS LAB\apache-jmeter-5.4.3\bin\TestingProject\loadtesting.jmx) - Apache JMeter (5.4.3)

File Edit Search Run Options Tools Help

loadtesting

- Thread Group
 - HTTP Request
 - View Results Tree
 - Summary Report
 - Graph Results

Summary Report

Name: Summary Report

Comments:

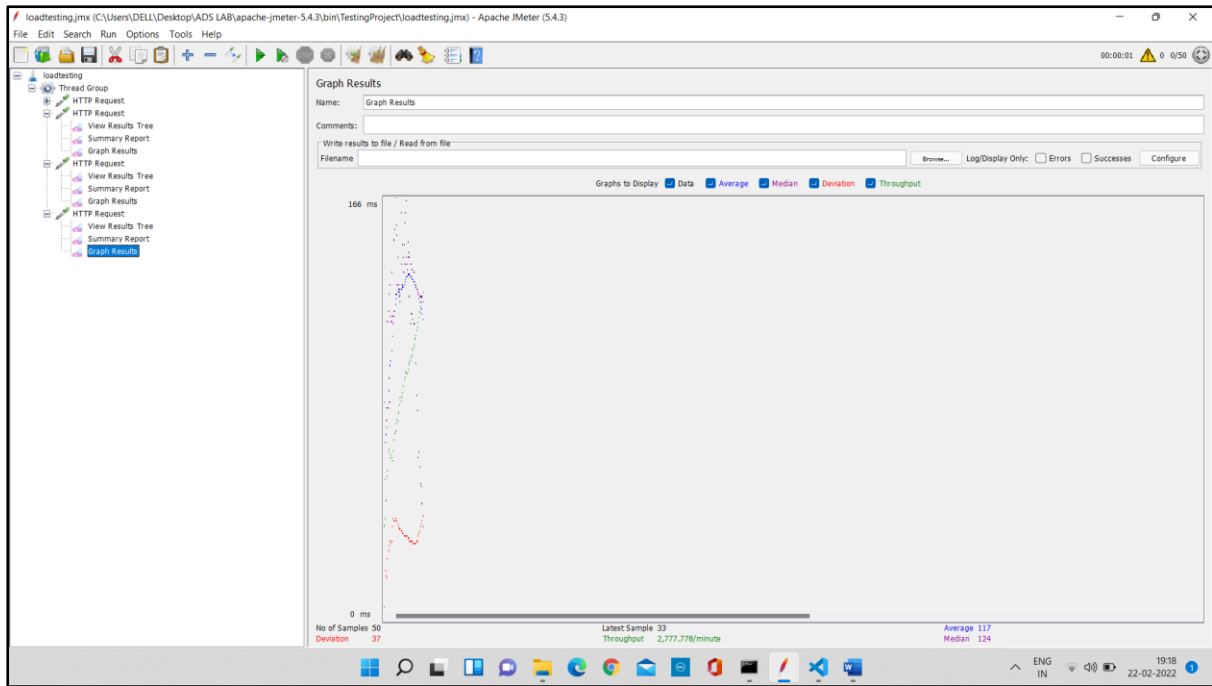
Write results to file / Read from file:

Filename: Browse... Log/Display Only: ☐ Errors ☐ Successes ☐ Configured

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request	50	117	33	177	37.62	0.00%	46.3/sec	12.07	6.19	267.0
TOTAL	50	117	33	177	37.62	0.00%	46.3/sec	12.07	6.19	267.0

Include group name in label? ☐ Save Table Data ☐ Save Table Header

19:18 22-02-2022



Conclusion:

For 50 users (thread group) sending request at a time for routes

1. /getCourses, throughput is 55.5/min
2. /getClassrooms, throughput is 55.7/min
3. /getTeacherCourses/:id, throughput is 55.7/min
4. /getStudentCourses/:id, throughput is 46.3/sec.