



Republic of the Philippines
BATANGAS STATE UNIVERSITY
The National Engineering University

Alangilan Campus

Golden Country Homes, Alangilan Batangas City, Batangas, Philippines 4200

Tel Nos.: (+63 43) 425-0139 local 2222 / 2223

E-mail Address: cics.alangilan@batstate-u.edu.ph | Website Address: <http://www.batstate-u.edu.ph>

College of Informatics and Computing Sciences

MIDTERM EXAMINATION
IT-414 SOFTWARE QUALITY ASSURANCE
IT Department
1ST Semester AY 2024-2025

Name : Dimaano, Jann Angelo C.

Date: 11/04/24

Section: IT-BA-4103

Score: _____

PART 2 – Laboratory Examination

Test I. Application -Mapped to ILO1

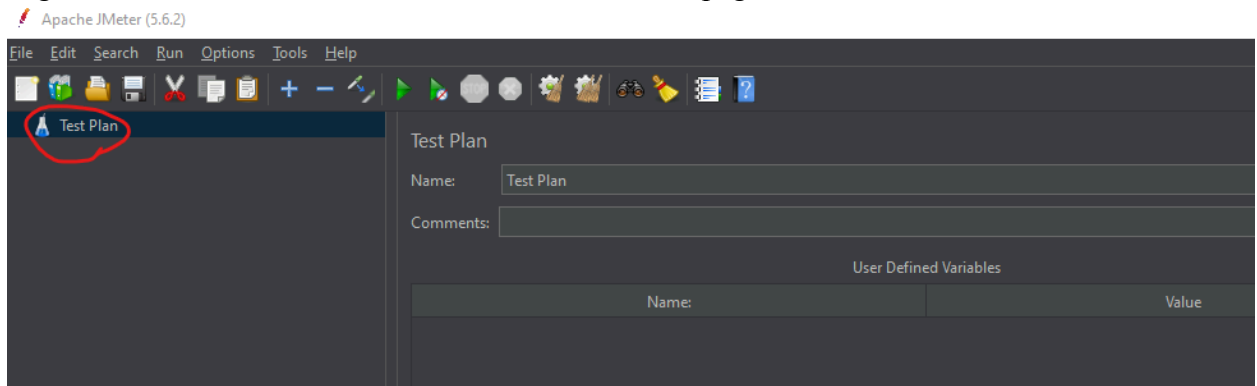
1- 10 (10 PTS)

Requirements:

1. Computer
2. Internet Connection
3. Apache JMeter

Instructions:

1. Download Apache JMeter 5.6.2 (apache-jmeter-5.6.2.zip) on https://jmeter.apache.org/download_jmeter.cgi.
2. Extract the zip file.
3. Open the extracted folder and go to the bin folder.
4. Open jmeter.bat file.
5. Right click on “Test Plan” on the left-hand side of the page.



6. Select “add”>”Threads(Users)”>”Thread Group”.
7. On the Thread Group pane, enter 10 as the “Number of Threads (users)”, 20 as the “Ramp-up period (seconds)” and 10 as the “Loop Count” then uncheck the “Same user on each iteration” option.



Republic of the Philippines
BATANGAS STATE UNIVERSITY
The National Engineering University

Alangilan Campus
Golden Country Homes, Alangilan Batangas City, Batangas, Philippines 4200
Tel Nos.: (+63 43) 425-0139 local 2222 / 2223

E-mail Address: cics.alangilan@g.batstate-u.edu.ph | Website Address: <http://www.batstate-u.edu.ph>

College of Informatics and Computing Sciences

Note:

<i>Number of Threads</i>	Number of users to simulate.
<i>Ramp-up Period</i>	How long JMeter should take to get all the threads started. If there are 10 threads and a ramp-up time of 100 seconds, then each thread will begin 10 seconds after the previous thread started, for a total time of 100 seconds to get the test fully up to speed. <div>The first thread will always start directly, so if you configured one thread, the ramp-up time is effectively zero. For the same reason, the tenth thread in the above example will actually be started after 90 seconds and not 100 seconds.</div>
<i>Same user on each iteration</i>	If selected, cookie and cache data from the first sampler response are used in subsequent requests (requires a global Cookie and Cache Manager respectively). If not selected, cookie and cache data from the first sampler response are not used in subsequent requests. <div>If not selected, a new connection will be opened between iterations which will result in increased response times and consume more resources (memory and cpu).</div>
<i>Loop Count</i>	Number of times to perform the test case. Alternatively, " infinite " can be selected causing the test to run until manually stopped or end of the thread lifetime is reached.

8. Right click on "Thread Group" on the left-hand side of the page. Then select "add>Sampler>HTTP Request".
9. On the HTTP Request pane, enter HTTP Request 1 as the "Name", test.k6.io as the "Server Name or IP", /news.php as the "Path".
10. Add another HTTP Request Sampler on the same Thread Group. Then enter HTTP Request 2 as the "Name", test.k6.io as the "Server Name or IP", /contacts.php as the "Path".

Note: Samplers perform the actual work of JMeter. Each sampler (except Flow Control Action) generates one or more sample results. The sample results have various attributes (success/fail, elapsed time, data size etc.) and can be viewed in the various listeners.

11. Right click on "Thread Group" on the left-hand side of the page. Then select "add>Listener>View Results Tree".
12. Add another 2 Listeners (Summary Report and Aggregate Graph).

Note: Most of the listeners perform several roles in addition to "listening" to the test results. They also provide means to view, save, and read saved test results.

13. Save the Test with the file name: "Load Test 1[**LASTNAME1**][**LASTNAME2**"]".
14. Run the Tests by click the Start button (Green arrow) on the tools pane.
15. Wait for the Tests to end.
16. Observe the Test results for the two websites by investigating the values returned by the listeners.



Republic of the Philippines
BATANGAS STATE UNIVERSITY
The National Engineering University

Alangilan Campus
Golden Country Homes, Alangilan Batangas City, Batangas, Philippines 4200

Tel Nos.: (+63 43) 425-0139 local 2222 / 2223

E-mail Address: cics.alangilan@g.batstate-u.edu.ph | Website Address: <http://www.batstate-u.edu.ph>

College of Informatics and Computing Sciences

Note: The View Results Tree shows a tree of all sample responses, allowing you to view the response for any sample. In addition to showing the response, you can see the time it took to get this response, and some response codes.

The summary report creates a table row for each differently named request in your test

Label - The label of the sample.

Samples - The number of samples with the same label

Average - The average elapsed time of a set of results

Min - The lowest elapsed time for the samples with the same label

Max - The longest elapsed time for the samples with the same label

Std. Dev. - the Standard Deviation of the sample elapsed time

Error % - Percent of requests with errors

Throughput - is calculated as requests/unit of time. The time is calculated from the start of the first sample to the end of the last sample. This includes any intervals between samples, as it is supposed to represent the load on the server.

The formula is: **Throughput** = (number of requests) / (total time).

Received KB/sec - The throughput measured in Kilobytes per second

Sent KB/sec - The throughput measured in Kilobytes per second

Avg. Bytes - average size of the sample response in bytes.

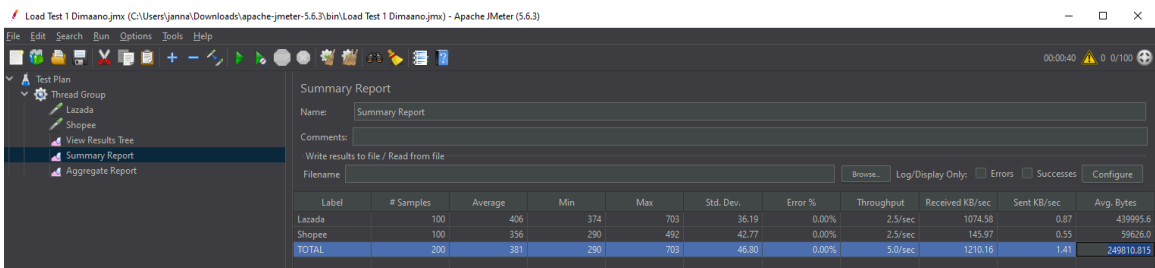
The aggregate graph provides an easy way to generate bar graphs and save the graph as a PNG file.

17. Load test both the Lazada at shopee websites by modifying the two HTTP Request. You only need to load their homepage (**No need to add path**).
18. Replace the Name of the HTTP Requests with their respective website (Lazada and Shopee).
19. The simulation should be for 100 users with a ramp-up period Of 40 seconds and 1 loop count.
20. Run the tests, be sure to click the “clear all” button on the tools page first to clear all the records of the previous test.
21. Summarize the result of your load test using the table below (10 points).

Label	#Samples	Average	Throughput	Avg. bytes
Lazada	100	406	2.5/sec	439995.63
Shopee	100	356	2.5/sec	59626.0
Total	200	381	5.0/sec	249810.815



College of Informatics and Computing Sciences



Test II. Evaluation -Mapped to ILO2

11- 40 (30 PTS)

Instruction: Answer the following questions. Be sure to justify your answers.

1.

Who is the faster website? (10 points)
- Shopee is a bit faster than Lazada, with an average response time of 356 ms versus Lazada’s 406 ms. So, Shopee edges out as the quicker site.
2.

Does the average size of the sample response affect the Average elapsed time and throughput of the website? How? (10 points)
- Yes, it does. Generally, the bigger the response size, the longer it takes to send, which can slow down response times and even reduce throughput. Lazada’s response size is way bigger 439995.63 bytes compared to Shopee’s 59626.0 bytes. This likely contributes to Lazada’s slightly slower response time, even though both sites handle requests at the same rate 2.5/sec.
3.

Which website do you think provided the better result in the load test? (10 points)
- Shopee seems to come out on top. Its responses are quicker and smaller, which usually means a smoother experience for users. Both sites maintain the same throughput, but Shopee’s faster response time gives it the advantage in this test.

Rubrics for Test II:

Criteria [10 Points]	Points	Description
Content & Argument	0-5	5: Strong, well-developed argument with clear focus. 4: Good argument, but lacks depth or detail. 3-2: Weak or unfocused argument. 1-0: No argument or irrelevant content.



Republic of the Philippines
BATANGAS STATE UNIVERSITY
The National Engineering University

Alangilan Campus
Golden Country Homes, Alangilan Batangas City, Batangas, Philippines 4200

Tel Nos.: (+63 43) 425-0139 local 2222 / 2223

E-mail Address: cics.alangilan@g.batstate-u.edu.ph | Website Address: <http://www.batstate-u.edu.ph>

College of Informatics and Computing Sciences

Organization & Clarity	0-5	5: Well-structured, logical flow with clear transitions. 4: Mostly clear with minor issues in organization. 3-2: Lacks clear structure or confusing at times. 1-0: Disorganized or incoherent.
------------------------	-----	---

Prepared by:

Reviewed by :

Mr. KRISTOFFERSEN R. LOMBOY

Dr. MARICEL GRACE Z. FERNANDO
Program Chair, Information Technology
Date:

Mr. EDBERT OCAMPO

Approved by:

Mrs. LIGAYA LUTERO
Course Facilitator
Date:

Dr. PRINCESS MARIE B. MELO
Dean, CICS
Date: