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**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**

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

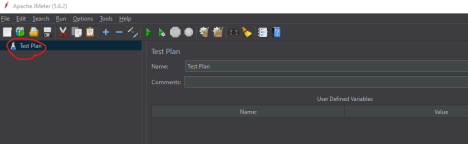
https://jmeter.apache.org/download\_jmeter.cgi.

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.

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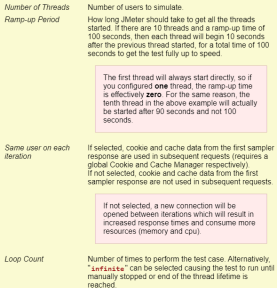
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**Note:**

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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.

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**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 0f 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 |

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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. |

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| 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:

Mr. KRISTOFFERSEN R. LOMBOY Mr. EDBERT OCAMPO

Mrs. LIGAYA LUTERO

Course Facilitator

Date:

Reviewed by :

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

Approved by:

Dr. PRINCESS MARIE B. MELO Dean, CICS

Date:

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