PERFORMANCE AND BASIC SECURITY TEST REPORT

MANOLAS DIMITRIOS

INFORMATION & COMMUNICATION SYSTEMS ENGINEERING STUDENT

Project Information:

Project Name: Demoblaze Web Application – Performance & Security Test
Date: 22/10/2025
Tools Used: Apache JMeter 5.6.3, OWASP ZAP

Objective:

The goal of this test was to work on the **performance, responsiveness, and basic security** of the Demoblaze online store. Also, in this project i collected some important information about response time, throughput, and error rate. I have checked the behavior of the application under 100 users and perform basic vulnerability scan using OWASP ZAP.

Performance Test (Apache JMeter):

For this project I used Apache JMeter 5.6 to test the performance of the demo website **www.demoblaze.com**. After installing JMeter and making sure Java was working, I created a new Test Plan. Inside it, I added a Thread Group with **100 users**, a **ramp-up period of 10 seconds**, and a **loop count of 5**. This means JMeter started 100 users slowly within 10 seconds and each one repeated the same actions five times. I added HTTP Request Defaults with the server name **www.demoblaze.com** and protocol **https**, so I didn't have to type the full address every time. Then I created several HTTP Requests for pages like the home page, login, product, and cart. I also added Listeners such as **Summary Report**, **Aggregate Report**, and **Graph Results** to see the response times, throughput, and any errors. After I ran the test by clicking the start button, I looked at the results and exported them as a CSV file to use in my final report.

Performance Report:

Aggregate Report

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Max	Error %	Throughput	Received KB/sec	Sent KB/sec
Login Page	950	674	315	1575	1772	2576	59	3571	0%	5.407	0.51	0.01
Home Page	850	1147	708	2361	4078	5893	62	15014	0%	4.887	0.70	0.01
TOTAL	1800	897	466	1816	2602	5531	59	15014	0%	10.245	1.20	0.02

From the Aggregate Report, the **Login Page** had an average response time of **674 ms** and the **Home Page** about **1147 ms**. The maximum response time reached **15,014 ms**, and

the **total average** was **897 ms**. The **error rate was 0%,** so all requests were successful. Overall, the website stayed stable under load, though the home page responded slower, probably due to heavier content.

Summary Report

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
Login Page	950	674	59	3571	643.80	0%	5.407	0.51	0.01	9619.8
Home Page	850	1147	62	15014	1388.03	0%	4.887	0.70	0.01	14738.7
TOTAL	1800	897	59	15014	1088.32	0%	10.245	1.20	0.02	12037.1

According to the Summary Report, the **Login Page** had an average response time of **674 ms**, while the **Home Page** averaged **1147 ms**. The maximum recorded response time was **15,014 ms**, and the total average was **around 897 ms**. The **error rate was 0%**, showing that all requests completed successfully. Throughput reached about **1.2 requests per second**, and the average received data rate was around **12,037 KB/sec**. Overall, the system stayed stable under load, though the home page showed slightly higher response times due to heavier content.

Basic Security Testing(OWASP ZAP):

These are some of the alerts that ZAP found:
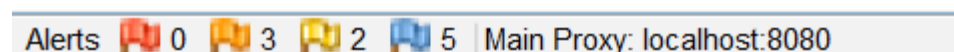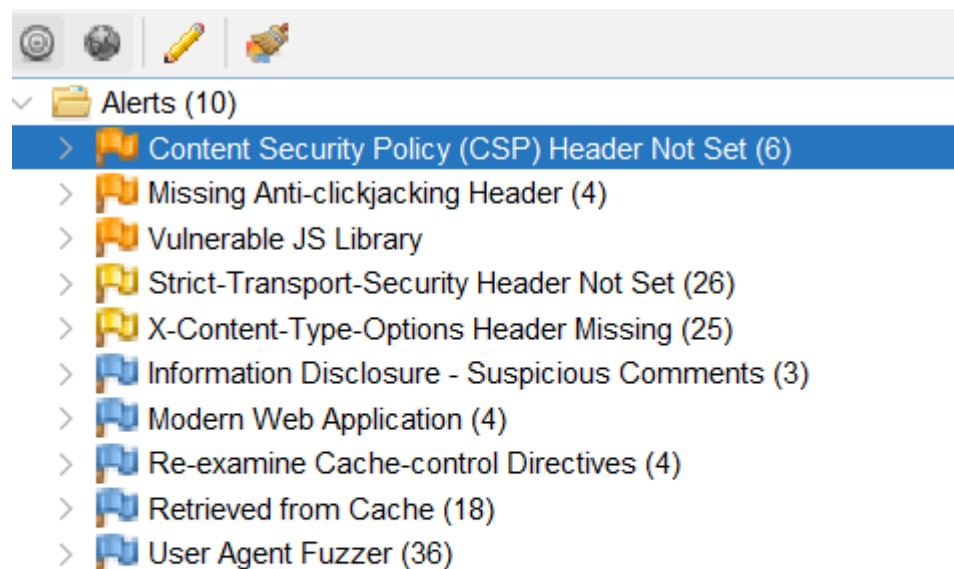
During the security scan with OWASP ZAP, several potential issues were identified. The website does not set a **Content Security Policy (CSP) header**, which helps prevent XSS attacks. The **Anti-clickjacking header** is missing, making the site vulnerable to clickjacking. A **vulnerable JavaScript library** was detected, which could be exploited if

not updated. The site also does not use **Strict-Transport-Security (HSTS)**, so browsers are not forced to use HTTPS, and the **X-Content-Type-Options header** is missing, which could allow browsers to misinterpret file types. Overall, while no active attacks were found, these headers and updates should be implemented to improve security.

Conclusion

The performance test of **demoblaze.com** showed that the site works well, stays stable, and responds quickly when many users use it at the same time. Only small security problems were found, and they can be fixed easily. Overall, the test shows that the website performs well and can handle real users without issues.