TASK 1: Web Application Security Testing Report

Intern Name: B Haritheertha

Test Application: OWASP Juice Shop

Tools Used: Burp Suite, Chrome Developer Tools

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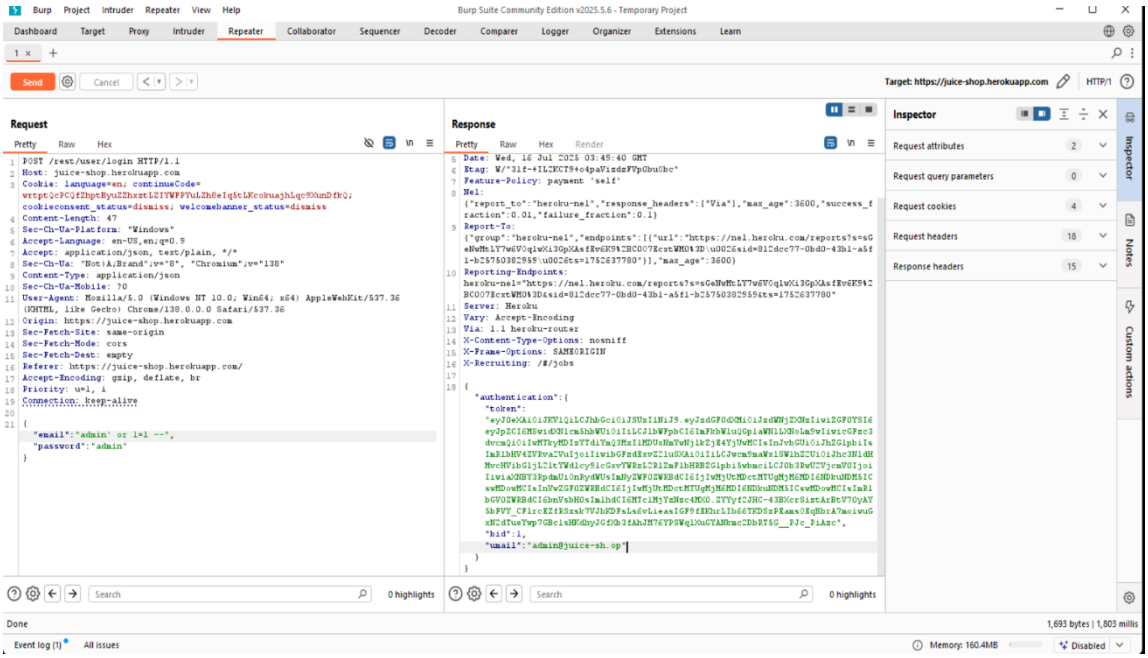
Introduction

This report documents the vulnerability assessment performed on the OWASP Juice Shop application as part of the Cybersecurity Internship Task 1 with Future Interns. The goal was to identify and document common web application security issues using ethical hacking tools and OWASP Top 10 standards.

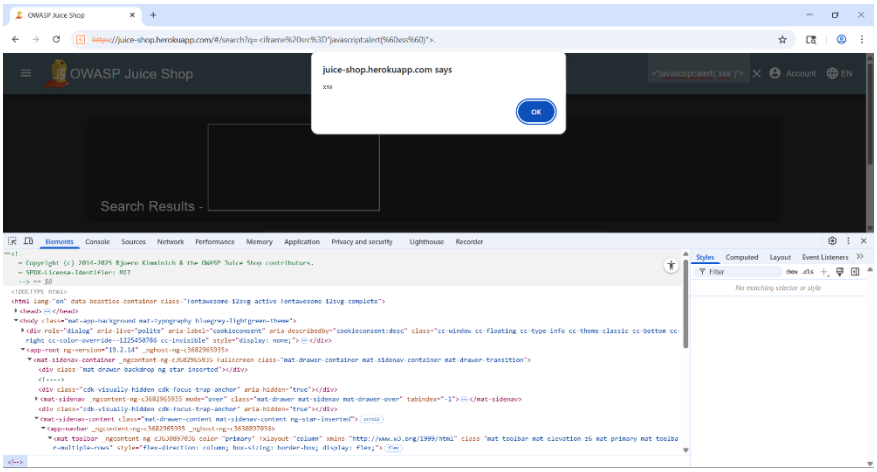
Vulnerability 1: SQL Injection in Login Form

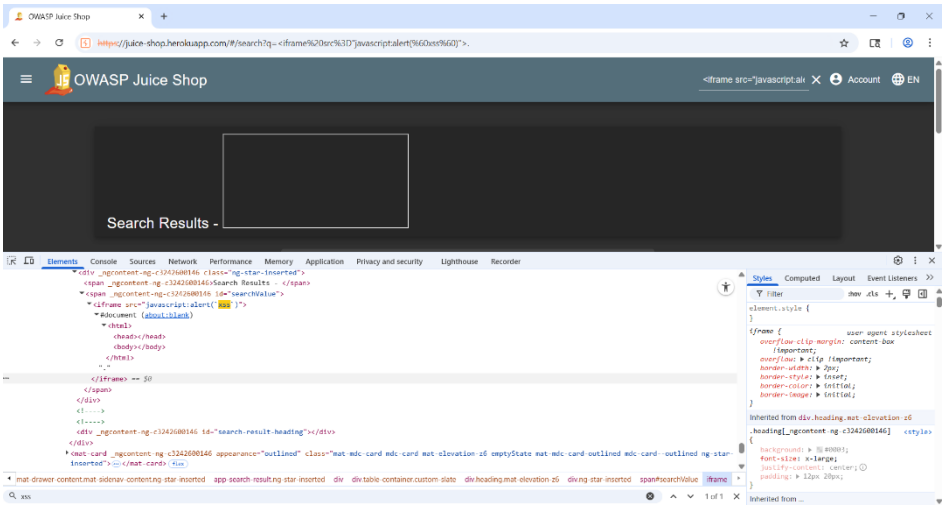
The login form accepts SQL statements, allowing bypass of authentication.
Payload Used: ' OR 1=1 –
impact: Allows unauthorized access to admin accounts.
OWASP Category: A01:2021 – Broken Access Control
Fix Recommendation: Use parameterized queries or ORM frameworks to prevent SQL injection.



Vulnerability 2: Stored/Reflected XSS

The search input reflects unsanitized JavaScript, triggering alerts.
Payload Used: <iframe src="javascript:alert(`xss`)">
Impact: Can execute malicious scripts on users' browsers.
OWASP Category: A03:2021 – Injection
Fix Recommendation: Use output encoding and input sanitization.





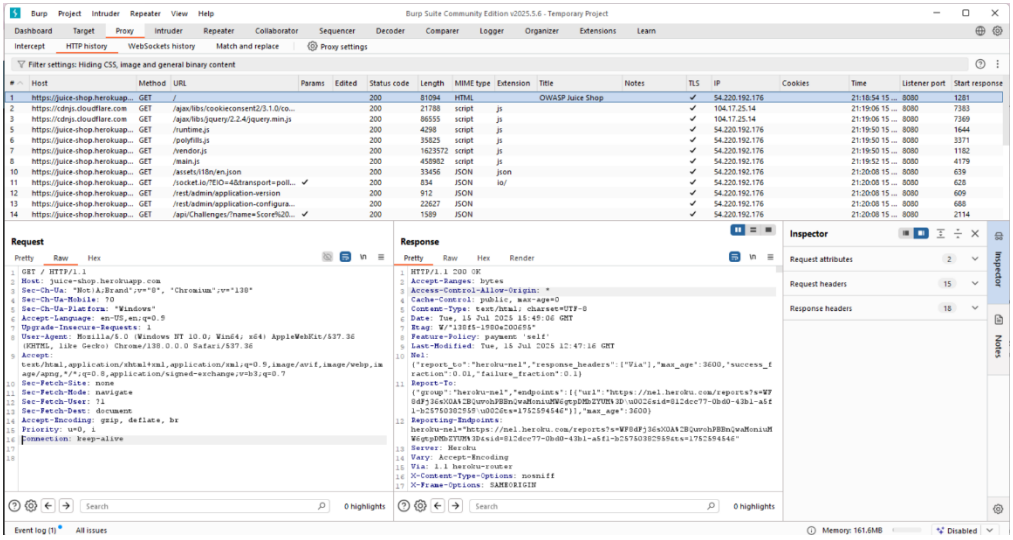
Vulnerability 3: Sensitive File Disclosure (FTP)

A .md file was accessible via FTP endpoint.

Impact: Revealed internal planning and confidential acquisition plans.

OWASP Category: A06:2021 – Security Misconfiguration

Fix Recommendation: Remove unused routes, deny access to internal documentation, and use access controls.



Vulnerability 4: Insecure Session Token Exposure

The authentication token is stored in a cookie without the HttpOnly flag, making it accessible through JavaScript in the browser. This is visible in the Application → Cookies tab of developer tools.

Impact: If an attacker is able to inject JavaScript (e.g., via XSS), they can steal the session token and impersonate the user.

Observed:

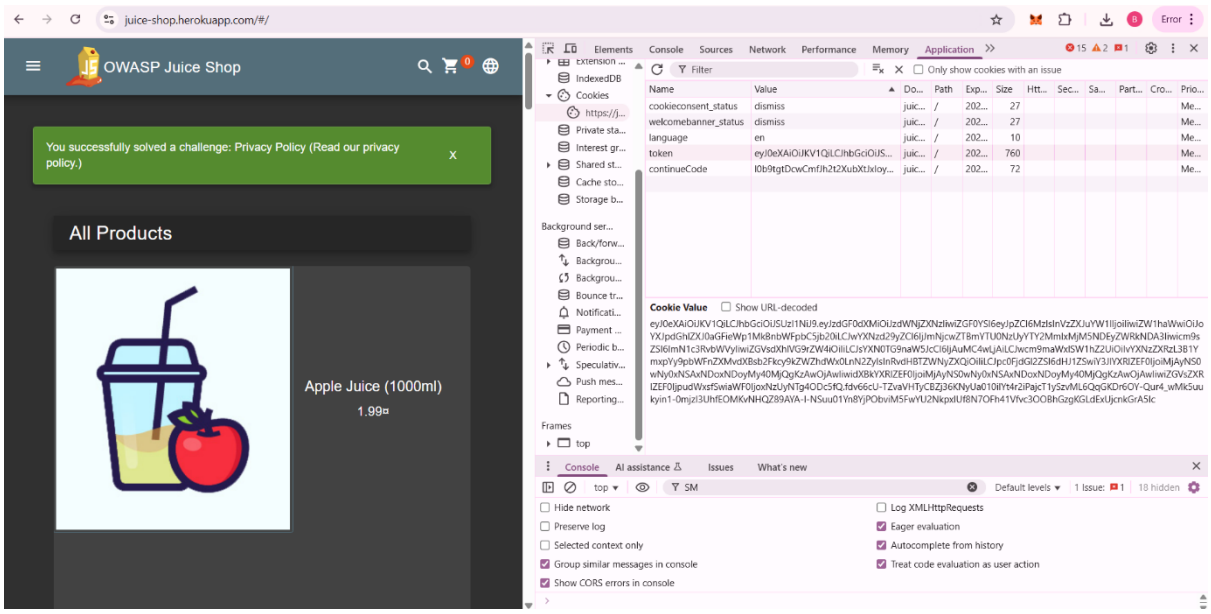
- token cookie is present.
- HttpOnly flag is not set.
- Secure flag is also not visible (check on HTTPS).

OWASP Category:

A07:2021 – Identification and Authentication Failures

Fix Recommendations:

- Set the HttpOnly flag to prevent JavaScript access.
- Use the Secure flag to allow the cookie only over HTTPS.
- Regenerate tokens on login/logout and enforce short token lifespans.
- Implement XSS protection to prevent token leakage.



Recommendations

- Use input validation and output encoding across all forms.
- Remove outdated redirect links and apply strict allowlisting.
- Prevent access to unnecessary files and routes.
- Always apply the **Principle of Least Privilege**.
- Regularly scan and test the application with automated tools.

Conclusion

This assessment demonstrated how common web vulnerabilities can be identified using simple tools and techniques. Addressing these vulnerabilities ensures a more secure web application and builds trust with users.