Lab 5

The aim of this lab was to understand **how security professionals identify vulnerabilities in web applications using automated scanners**. Instead of manually testing every input, a vulnerability scanner sends thousands of crafted requests and analyses the responses to uncover weaknesses.

In this lab, I used:

- Wapiti – a black-box web vulnerability scanner
- Vulnerable training websites such as Google Gruyere and OWASP Juice Shop

The goal was to **safely simulate real-world penetration testing** and learn how web flaws are discovered before attackers exploit them.

```python
import os
from IPython.display import display, HTML
import glob
import pathlib

# Base 'out' name you passed to Wapiti (-o). Update if you used a different name.
out_name = "juice_wapiti_report.html"


def find_html_report(out):
    # If out is a file and ends with .html, use it
    if os.path.isfile(out) and out.lower().endswith('.html'):
        return os.path.abspath(out)

    # If out is a directory, search for the newest .html inside it
    if os.path.isdir(out):
        matches = glob.glob(os.path.join(out, "*.html"))
        if matches:
            # Choose the most recent file
            matches.sort(key=os.path.getmtime, reverse=True)
            return os.path.abspath(matches[0])

    # If out doesn't exist as provided, search for any html file pattern that looks like Wapiti output
    candidates = glob.glob(out + "*/*.html") + glob.glob(out + "*.html")
    if candidates:
        candidates.sort(key=os.path.getmtime, reverse=True)
        return os.path.abspath(candidates[0])

    return None


report_path = find_html_report(out_name)

if report_path:
    print("Report file found:", report_path)
    try:
        with open(report_path, 'r', encoding='utf-8') as f:
            html = f.read()
            display(HTML(html))
```

Helps set out the template for the HTML report

Lab 5

```python
    # If out doesn't exist as provided, search for any html file pattern that looks like Wapiti output
    candidates = glob.glob(out + "*/*.html") + glob.glob(out + "*.html")
    if candidates:
        candidates.sort(key=os.path.getmtime, reverse=True)
        return os.path.abspath(candidates[0])

    return None


report_path = find_html_report(out_name)

if report_path:
    print("Report file found:", report_path)
    try:
        with open(report_path, 'r', encoding='utf-8') as f:
            html = f.read()
            display(HTML(html))
    except Exception as e:
        print("Could not render HTML inline (error):", e)
        print("Open the file in your browser instead:", report_path)
else:
    print("No HTML report found. Check that the scan produced the report and "
          "that 'out_name' matches the -o argument passed to Wapiti.")
```

Python

If statement if the report is generated Else statement in case the report cannot be generated

```python
!wapiti -u https://google-gruyere.appspot.com/359837269139884505795205299323688334083/ -o juice_wapiti_report.html -f html
```

Python

Wapiti vulnerability report

Target: https://google-gruyere.appspot.com/359837269139884505795205299323688334083/

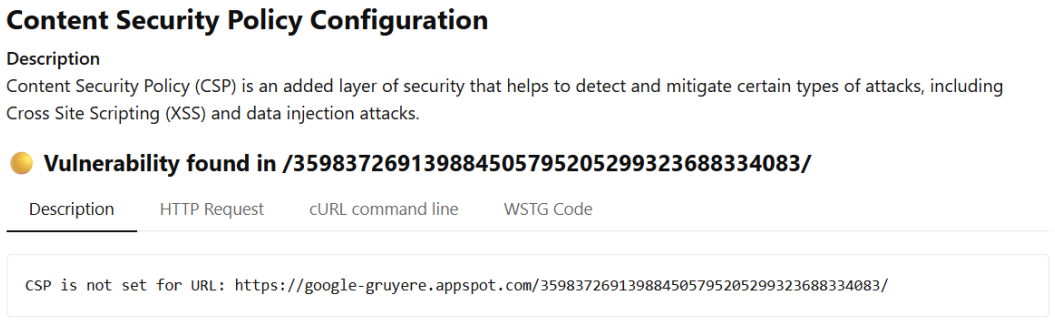
Date of the scan: Wed, 29 Oct 2025 12:42:37 +0000. Scope of the scan: folder. Crawled pages: 10

Summary

Category	Number of vulnerabilities found
Backup file	0
Cleartext Submission of Password	0
Weak credentials	0
CRLF Injection	0
Content Security Policy Configuration	1
Cross Site Request Forgery	0
Potentially dangerous file	0
Command execution	0
Path Traversal	0
Fingerprint web application framework	0
Fingerprint web server	0
Htaccess Bypass	0

Snippet of the vulnerability report summary

Lab 5



An example of a vulnerability