

Diane Gilzow

April 29, 2026

CYSE 450: Ethical Hacking and Penetration Testing

Dr. Md Morshed Alam

Lab 7: DVWA vs Mutillidae

1) Login to Kali Linux and Metasploitable 2. Use *msfadmin* as both username and password to login to the Metasploitable 2 VM.

```
metasploitable login: msfadmin
Password:
Last login: Wed Jan 28 13:23:10 EST 2026 on tty1
Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 2008 i686

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
No mail.
msfadmin@metasploitable:~$
```

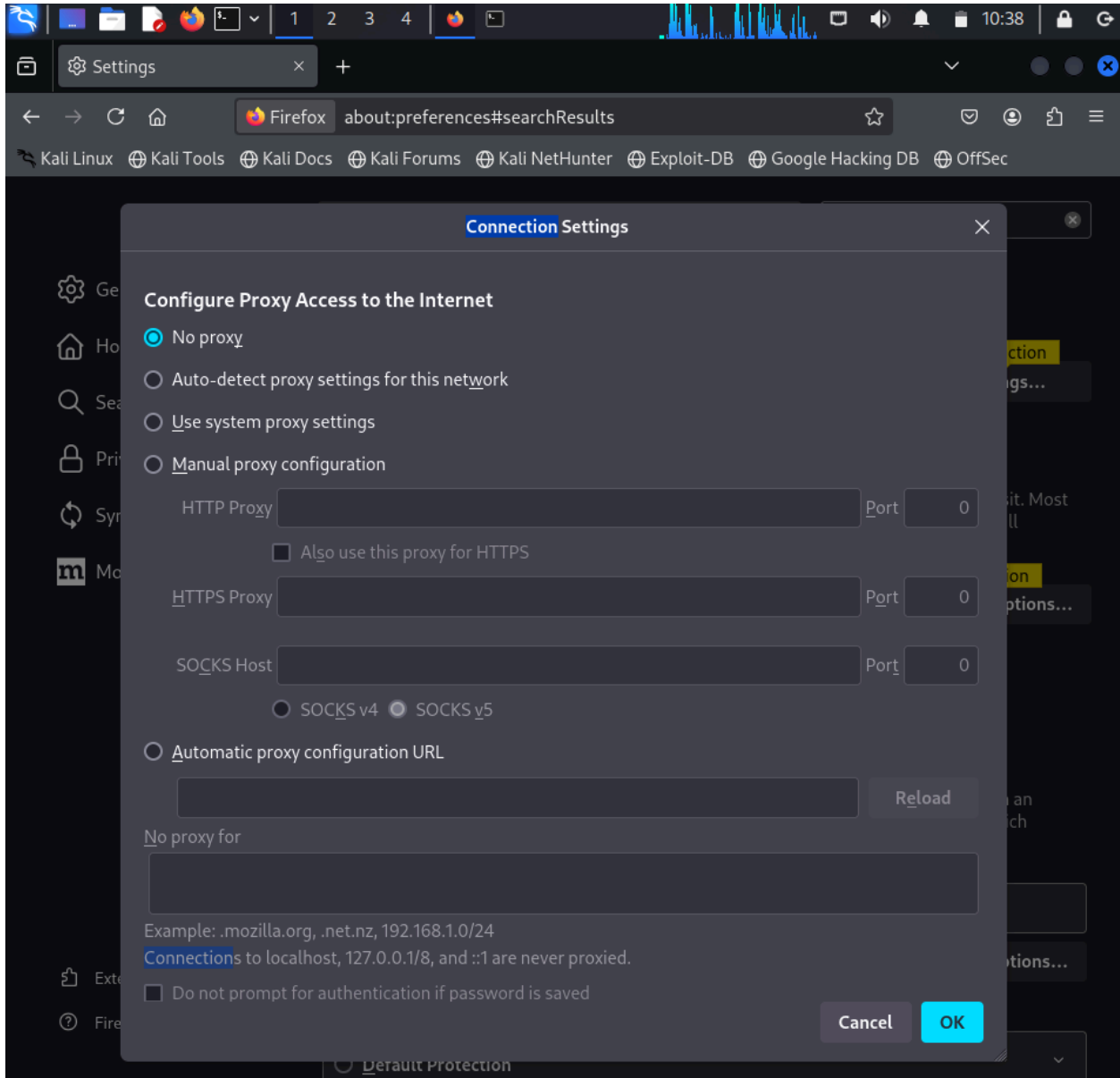
2) Get the IP address of Metasploitable 2 using the *ifconfig* command and ping it from the Kali VM. If Kali VM cannot ping the Metasploitable 2 VM, check the network adapter setting for both machines and set “**Bridged Adapter**” as the adapter option.

```
msfadmin@metasploitable:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 08:00:27:d8:36:bf
          inet addr:192.168.1.108  Bcast:192.168.1.255  Mask:255.255.255.0
          inet6 addr: fe80::a00:27ff:fed8:36bf/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:160 errors:0 dropped:0 overruns:0 frame:0
          TX packets:88 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:18497 (18.0 KB)  TX bytes:8380 (8.1 KB)
          Base address:0xd020 Memory:f0200000-f0220000

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:104 errors:0 dropped:0 overruns:0 frame:0
          TX packets:104 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:25525 (24.9 KB)  TX bytes:25525 (24.9 KB)
```

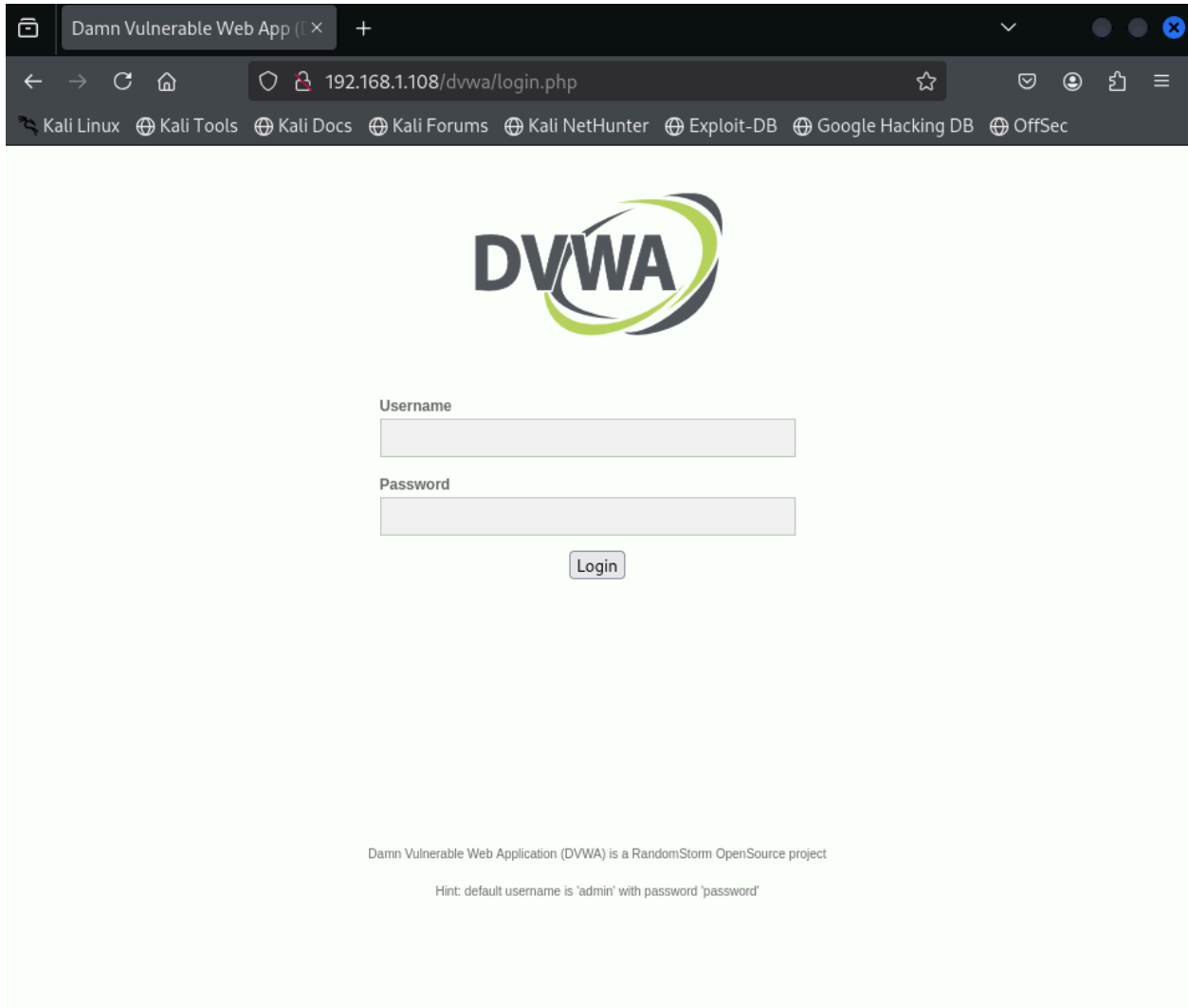
```
(tobythebaby@dgilz001)-[~]
$ ping 192.168.1.108
PING 192.168.1.108 (192.168.1.108) 56(84) bytes of data.
64 bytes from 192.168.1.108: icmp_seq=1 ttl=64 time=2.89 ms
64 bytes from 192.168.1.108: icmp_seq=2 ttl=64 time=1.69 ms
64 bytes from 192.168.1.108: icmp_seq=3 ttl=64 time=2.67 ms
64 bytes from 192.168.1.108: icmp_seq=4 ttl=64 time=1.49 ms
64 bytes from 192.168.1.108: icmp_seq=5 ttl=64 time=1.81 ms
64 bytes from 192.168.1.108: icmp_seq=6 ttl=64 time=1.65 ms
64 bytes from 192.168.1.108: icmp_seq=7 ttl=64 time=0.634 ms
64 bytes from 192.168.1.108: icmp_seq=8 ttl=64 time=0.749 ms
64 bytes from 192.168.1.108: icmp_seq=9 ttl=64 time=1.44 ms
^C
— 192.168.1.108 ping statistics —
9 packets transmitted, 9 received, 0% packet loss, time 8057ms
rtt min/avg/max/mdev = 0.634/1.669/2.888/0.707 ms
```

3) In your Kali VM, make sure that there is no proxy set up for the Firefox.



4) [In Kali] Enter the following URL in your Firefox browser:

`http://<IP of your Metasploitable 2 VM>/dvwa/login.php`



5) Login to DVWA using the following credentials:

Username: admin

Password: password



Username

Password

Login

6) Select **SQL Injection** from the menu and enter **any value other than 2** as the User ID. Submit the user id and take a screenshot showing the result.



Vulnerability: SQL Injection

- Home
- Instructions
- Setup
- Brute Force
- Command Execution
- CSRF
- File Inclusion
- SQL Injection
- SQL Injection (Blind)
- Upload
- XSS reflected
- XSS stored
- DVWA Security
- PHP Info
- About
- Logout

User ID:

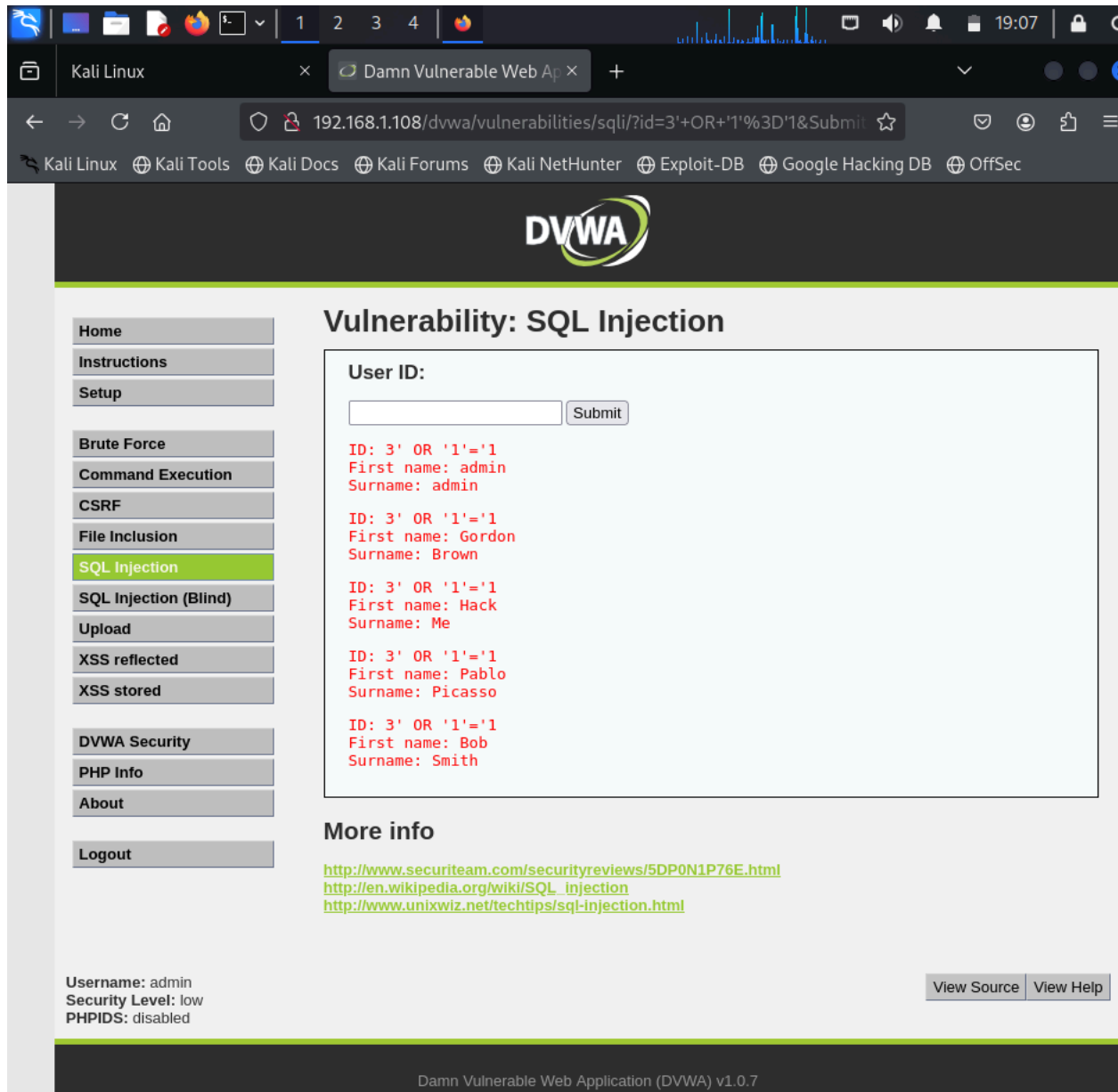
ID: 3
First name: Hack
Surname: Me

More info

- <http://www.securiteam.com/securityreviews/5DP0N1P76E.html>
- http://en.wikipedia.org/wiki/SQL_injection
- <http://www.unixwiz.net/techtips/sql-injection.html>

Username: admin
Security Level: high
PHPIDS: disabled

7) Implement an SQL Injection attack to retrieve information for all users. Take screenshots showing the SQL query used as an input and the corresponding results.



8) Explain the SQL Injection attack performed in step #7.

I used 3' OR '1'='1 as input to launch the SQL injection attack. What this input does is breaks out of the original SQL query condition and injects a logical statement that is always true. This results in all of the user records being returned instead of only the intended user with ID 3.

9) [In Kali] In Firefox, go to the following URL:

<http://< IP of your Metasploitable 2 VM >/mutillidae/>

You will get a page like the following. Explore the buttons **“Toggle Security”** and **“Toggle**

Hints”. Briefly explain what happens when you change these settings. Take relevant screenshots to attach to your submission.

Mutillidae: Born to be Hacked

Version: 2.1.19 Security Level: 0 (Hosed) Hints: Disabled (0 - I try harder) Not Logged In

Home Login/Register Toggle Hints Toggle Security Reset DB View Log View Captured Data

Core Controls
OWASP Top 10
Others
Documentation
Resources

Site hacked...err...quality-tested with Samurai WTF, Backtrack, Firefox, Burp-Suite, Netcat, and these Mozilla Add-ons

@webpwnized

Mutillidae Channel

Mutillidae: Deliberately Vulnerable PHP Scripts Of OWASP Top 10

Latest Version / Installation

- [Latest Version](#)
- [Installation Instructions](#)
- [Usage Instructions](#)
- [Get rid of those pesky PHP errors](#)
- [Change Log](#)
- [Notes](#)

Samurai WTF and Backtrack contains all the tools needed or you may build your own collection

back|track

Samurai Web Testing Framework

BUILT ON eclipse

php MySQL

Toad

HACKERS FOR CHARITY
www.hackerstorcharity.org

When I press the “**Toggle Security**” button, it would change the security level from Security Level: 0 (Hosed), Security Level: 1 (Arrogant), and Security Level: 5 (Secure)

Security Level: 0 (Hosed) Security Level: 1 (Arrogant)

Security Level: 5 (Secure)

As for when I press the “**Toggle Hints**” button, it would either enable or disable hints. There’s two levels for enabled hints, one being 5cr1pt K1dd1e and the other being Noob.

Hints: Disabled (0 - I try harder)

Hints: Enabled (1 - 5cr1pt K1dd1e)

Hints: Enabled (2 - Noob)

10) Navigate: **OWASP Top 10** → **A1 - Injection** → **SQLi - Extract Data** → **User Info**.

Enter **“admin”** as Name and **“cyse-450”** as Password. Click on the button **“View Account Details”**.

Please enter username and password to view account details

Name	<input type="text" value="admin"/>
Password	<input type="password" value="••••••••"/>
<input type="button" value="View Account Details"/>	

Dont have an account? [Please register here](#)

11) Similar to the following screenshot, show the SQL query that has been executed. **Note that you used the password “cyse-450”, not “password”**. If you get an error message like the message shown in the screenshot, explain the reason behind this error. If there is no error message, take screenshots of the resultant output.


```
[19:51:45] [INFO] testing connection to the target URL
you have not declared cookie(s), while server wants to set its own ('PHPSESSID=6fe52a37158 ... bc1b144b2a'). Do you want to use those [Y/n] Y
[19:51:45] [INFO] checking if the target is protected by some kind of WAF/IPS
[19:51:46] [INFO] testing if the target URL content is stable
[19:51:46] [INFO] target URL content is stable
[19:51:46] [INFO] testing if GET parameter 'page' is dynamic
[19:51:46] [INFO] GET parameter 'page' appears to be dynamic
[19:51:46] [WARNING] heuristic (basic) test shows that GET parameter 'page' might not be injectable
[19:51:46] [INFO] heuristic (XSS) test shows that GET parameter 'page' might be vulnerable to cross-site scripting (XSS) attacks
[19:51:46] [INFO] heuristic (FI) test shows that GET parameter 'page' might be vulnerable to file inclusion (FI) attacks
[19:51:46] [INFO] testing for SQL injection on GET parameter 'page'
[19:51:46] [INFO] testing 'AND boolean-based blind - WHERE or HAVING clause'
[19:51:47] [WARNING] reflective value(s) found and filtering out
```

```
[19:58:05] [WARNING] GET parameter 'page' does not seem to be injectable
[19:58:05] [INFO] testing if GET parameter 'username' is dynamic
[19:58:05] [WARNING] GET parameter 'username' does not appear to be dynamic
[19:58:05] [WARNING] heuristic (basic) test shows that GET parameter 'username' might not be injectable
[19:58:05] [INFO] testing for SQL injection on GET parameter 'username'
```

14) Explore different features of the *Mutillidae* application and provide a brief comparison with the DVWA application. Make sure you discuss the features of both applications in your comparative discussion.

Mutillidae provides a hint toggle button whereas one isn't present in DVWA. Additionally, it seems like DVWA has a focus primarily on web-based vulnerabilities, like SQL injection and XSS. Mutillidae on the other hand includes a wider range of vulnerabilities along with built-in guidance features. Besides that, both of these applications share similarities in having adjustable security difficulty levels, being written in PHP, and being an intentionally vulnerable environment for practice.