DVWA Installation and Vulnerability Discovery

Step 1 — Installation & Setup

Update & install DVWA

Command-sudo apt update

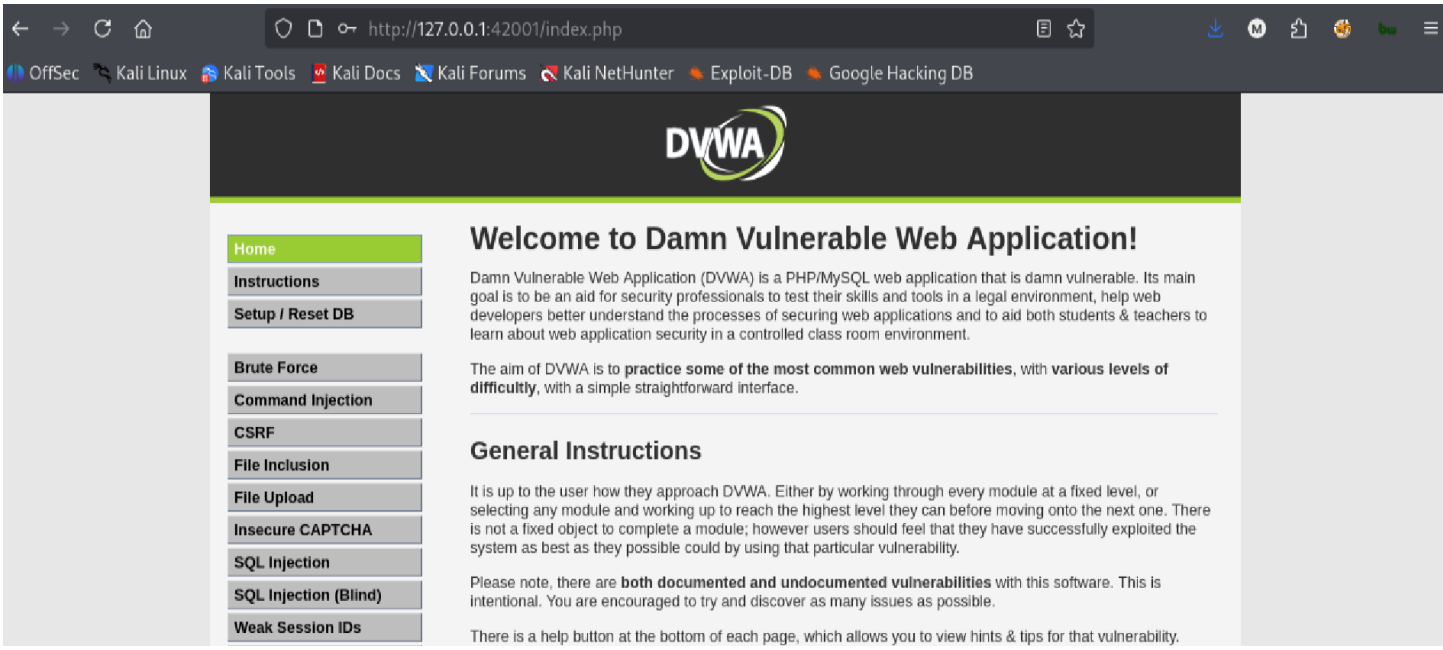
sudo apt install dvwa

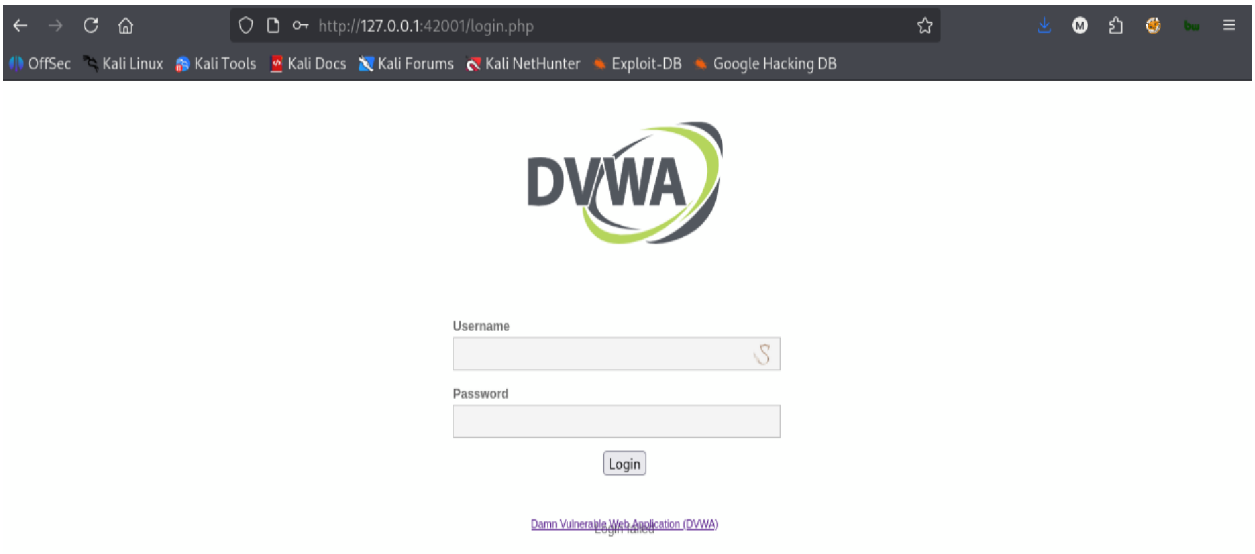
```
┌──(marie㉿math)-[~]
└─$ sudo apt install dvwa
[sudo] password for marie:
The following packages were automatically installed and are no longer required:
  amass-common            libgeos3.14.0          libobjc-14-dev  libwireshark18               python3-kismetcapturefreaklabszigbee  samba-ad-dc
  docker-buildx           libgirepository-1.0-1  libplacebo349   libwiretap15                 python3-kismetcapturertl433           samba-ad-provision
  gir1.2-girepository-2.0 libgpgmepp6t64         libportmidi0    libwsutil16                  python3-kismetcapturertladsb          samba-dsdb-modules
  libarmadillo14          libinstpatch-1.0-2     librav1e0.7     libx264-164                  python3-kismetcapturertlamr
  libbluray2              libjs-jquery-ui        libsqlcipher1   python3-bluepy               python3-pysmi
  libbson-1.0-0t64        libjs-underscore       libtheoradec1   python3-click-plugins        python3-xlutils
  libdisplay-info2        libmongoc-1.0-0t64     libtheoraenc1   python3-gpg                  python3-xlwt
  libgdal37               libnet1                libudfread0     python3-kismetcapturebtgeiger  python3-zombie-imp
Use 'sudo apt autoremove' to remove them.

Installing:
  dvwa

Installing dependencies:
  php8.4-fpm  php8.4-gd

Suggested packages:
  php-pear

Summary:
  Upgrading: 0, Installing: 3, Removing: 0, Not Upgrading: 77
  Download size: 2,689 kB
  Space needed: 7,975 kB / 2,417 MB available

Continue? [Y/n] y
Get:1 https://http.kali.org/kali kali-rolling/main amd64 php8.4-fpm amd64 8.4.11-1+b1 [1,860 kB]
```

```
Unpacking php8.4-fpm (8.4.11-1+b1) ...
Selecting previously unselected package php8.4-gd.
Preparing to unpack .../php8.4-gd_8.4.11-1+b1_amd64.deb ...
Unpacking php8.4-gd (8.4.11-1+b1) ...
Selecting previously unselected package dvwa.
Preparing to unpack .../dvwa_2.4-0kali1_all.deb ...
Unpacking dvwa (2.4-0kali1) ...
Setting up php8.4-gd (8.4.11-1+b1) ...
Creating config file /etc/php/8.4/mods-available/gd.ini with new version
Setting up php8.4-fpm (8.4.11-1+b1) ...
Creating config file /etc/php/8.4/fpm/php.ini with new version
NOTICE: Not enabling PHP 8.4 FPM by default.
NOTICE: To enable PHP 8.4 FPM in Apache2 do:
NOTICE: a2enmod proxy_fcgi setenvif
NOTICE: a2enconf php8.4-fpm
NOTICE: You are seeing this message because you have apache2 package installed.
update-rc.d: We have no instructions for the php8.4-fpm init script.
update-rc.d: It looks like a network service, we disable it.
Setting up dvwa (2.4-0kali1) ...
dvwa.service is a disabled or a static unit, not starting it.
Processing triggers for man-db (2.13.1-1) ...
Processing triggers for libapache2-mod-php8.4 (8.4.11-1+b1) ...
Processing triggers for kali-menu (2025.4.2) ...
Processing triggers for php8.4-cli (8.4.11-1+b1) ...
Processing triggers for php8.4-fpm (8.4.11-1+b1) ...
NOTICE: Not enabling PHP 8.4 FPM by default.
NOTICE: To enable PHP 8.4 FPM in Apache2 do:
NOTICE: a2enmod proxy_fcgi setenvif
NOTICE: a2enconf php8.4-fpm
NOTICE: You are seeing this message because you have apache2 package installed.
```

2.Run the Dvwa with the command

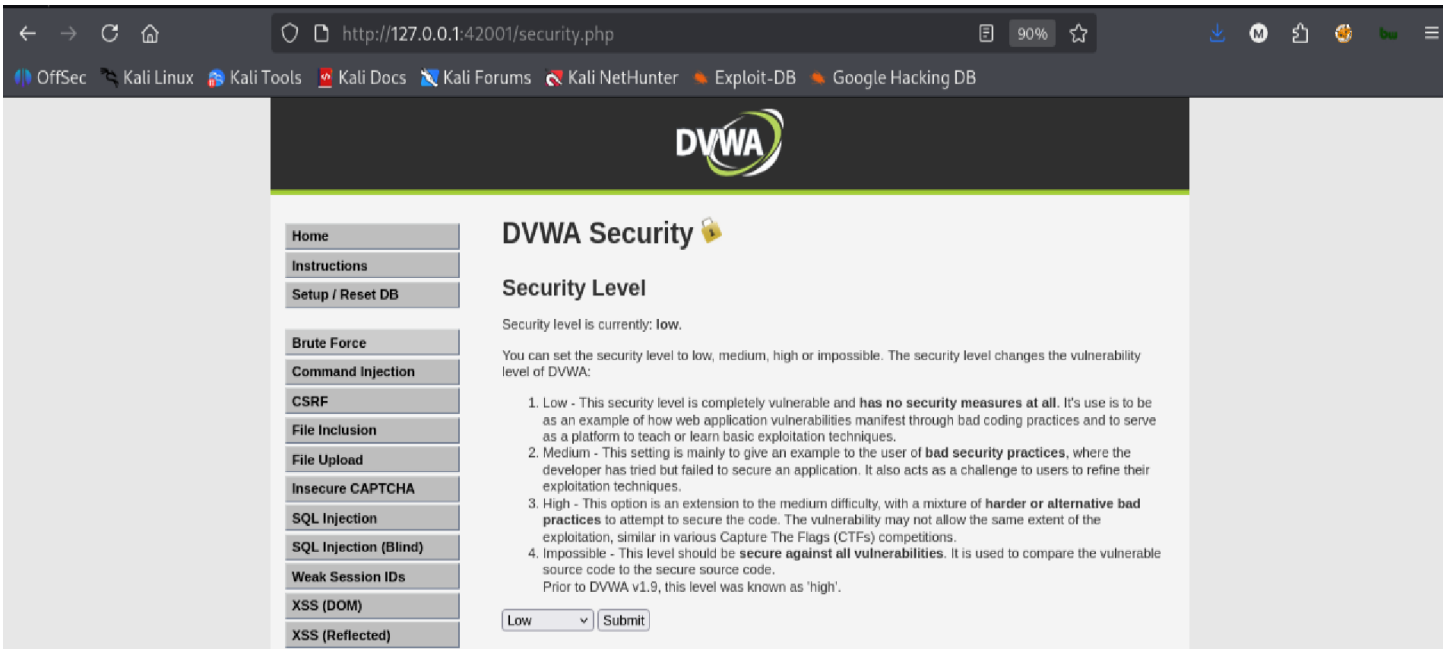
sudo dvwa-start

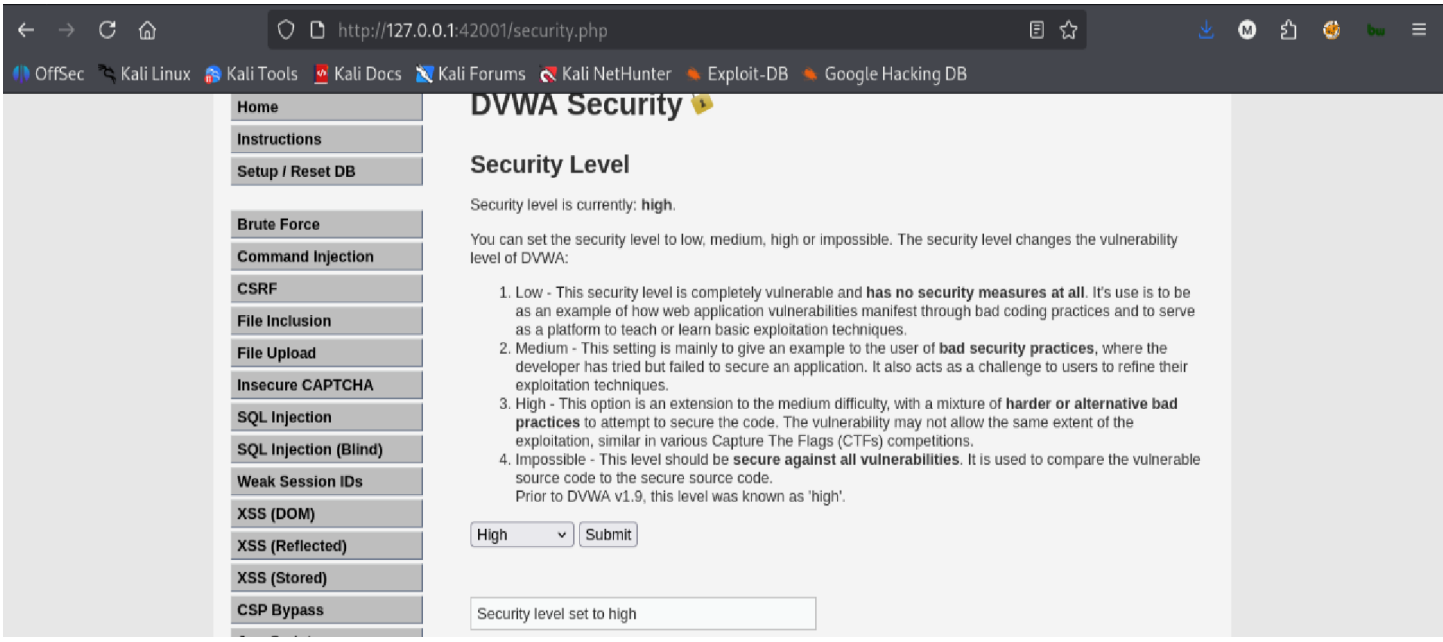




Step 2: DVWA Security Levels

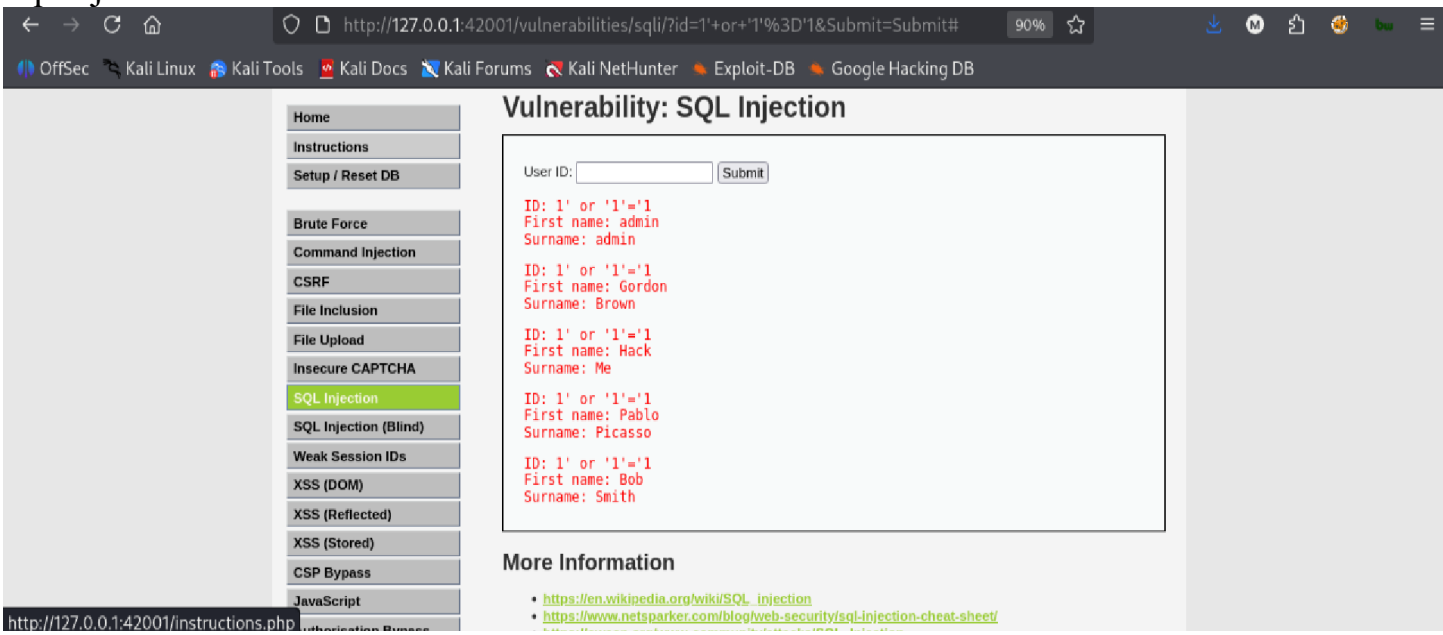
In DVWA set Security to Low first , Run tests , then set to medium and high & Rerun the tests

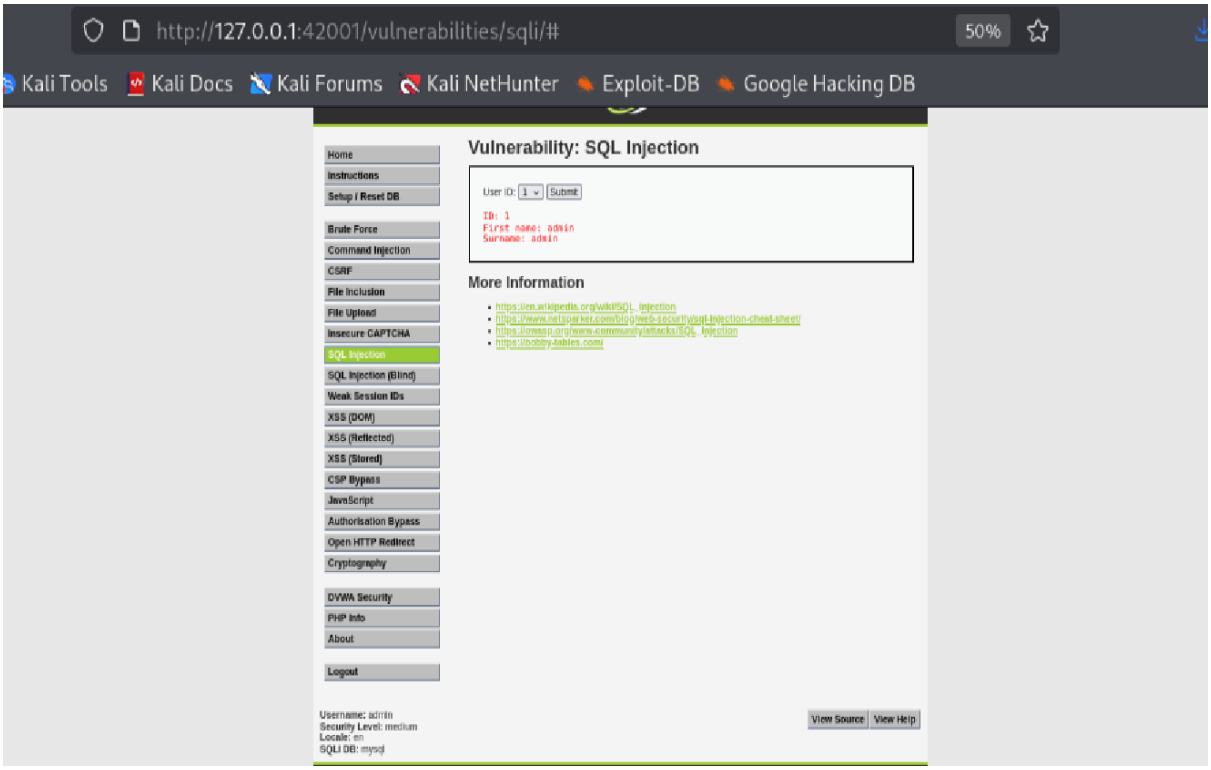


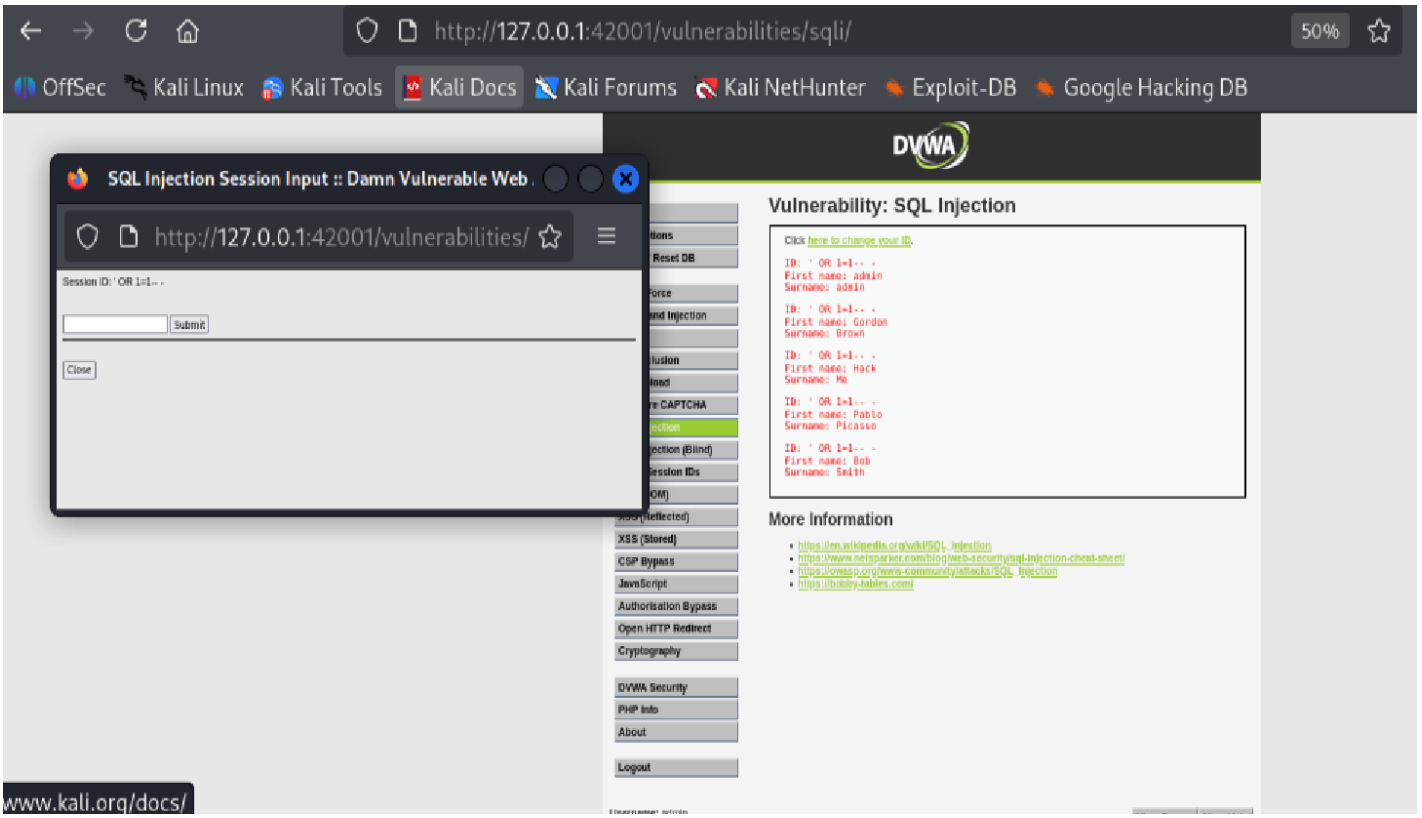


Step 3: Vulnerability Exercises

Sql Injection



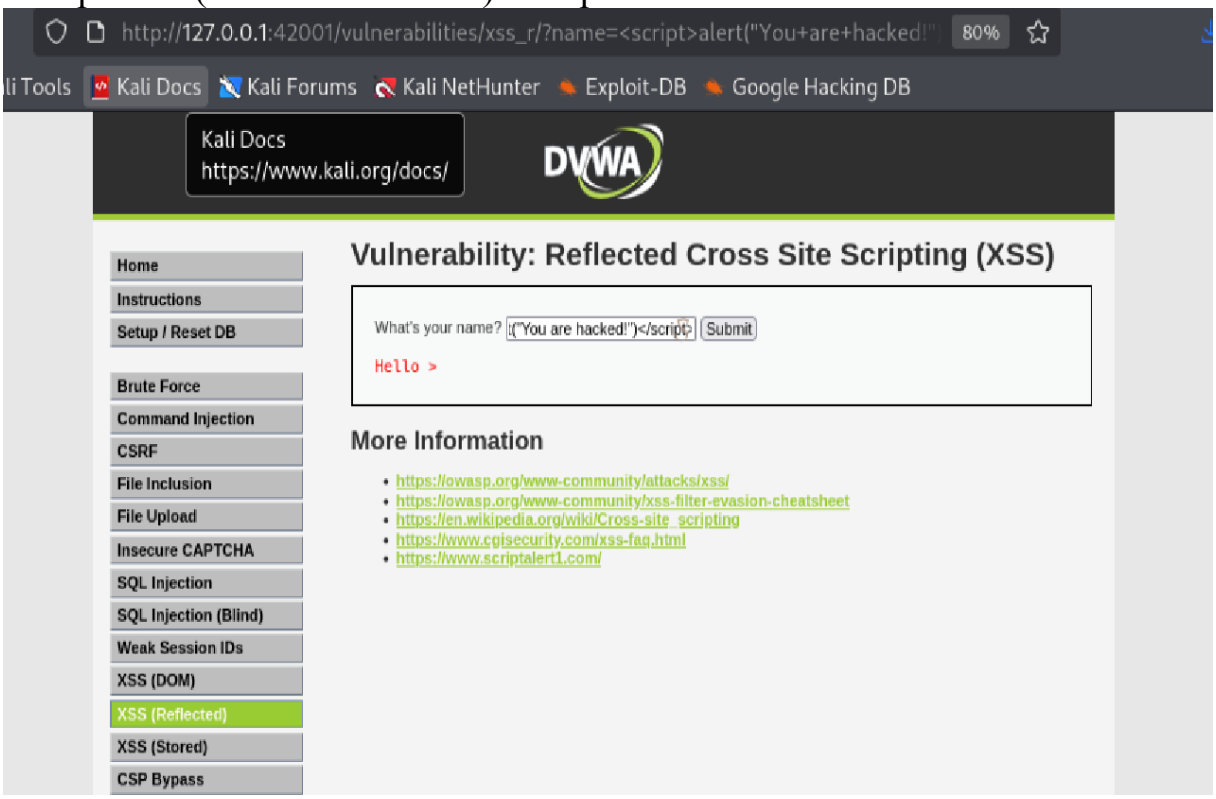




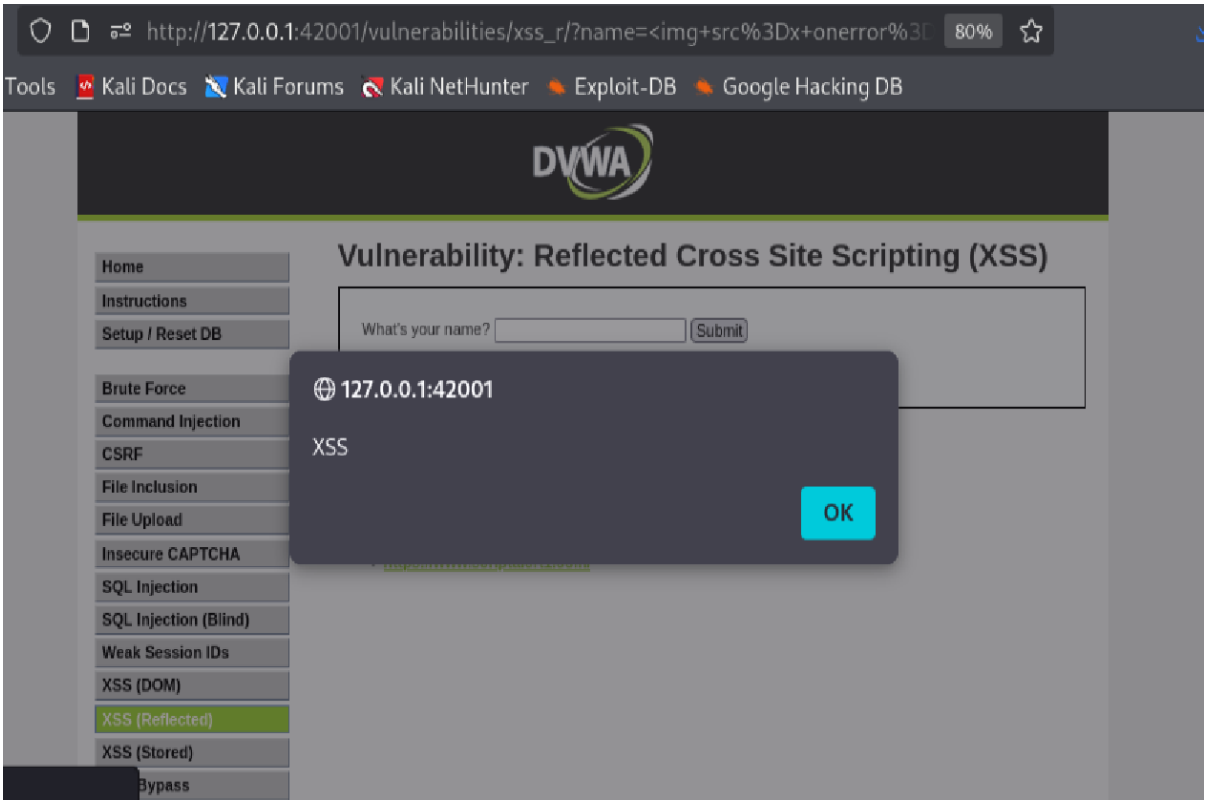
Cross Site Scripting-

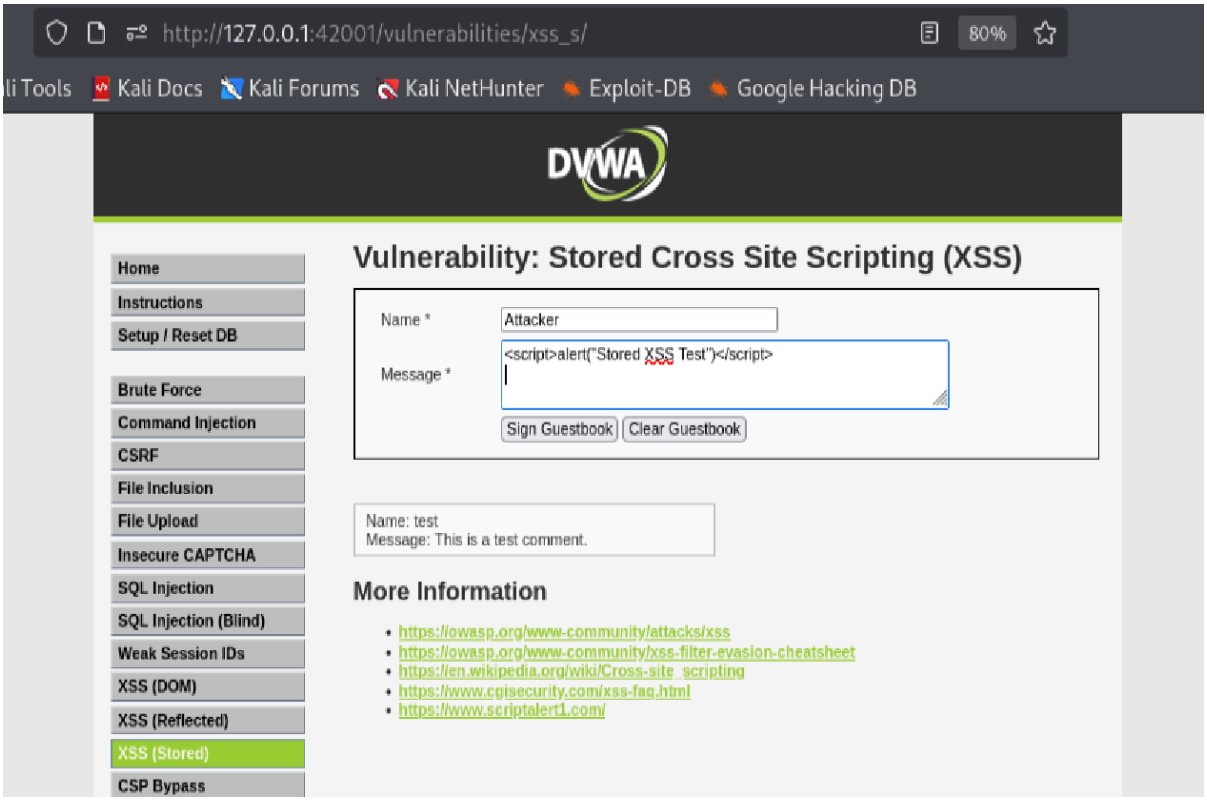
When the following payload is entered

<script>alert(“You are hacked!”)</script>

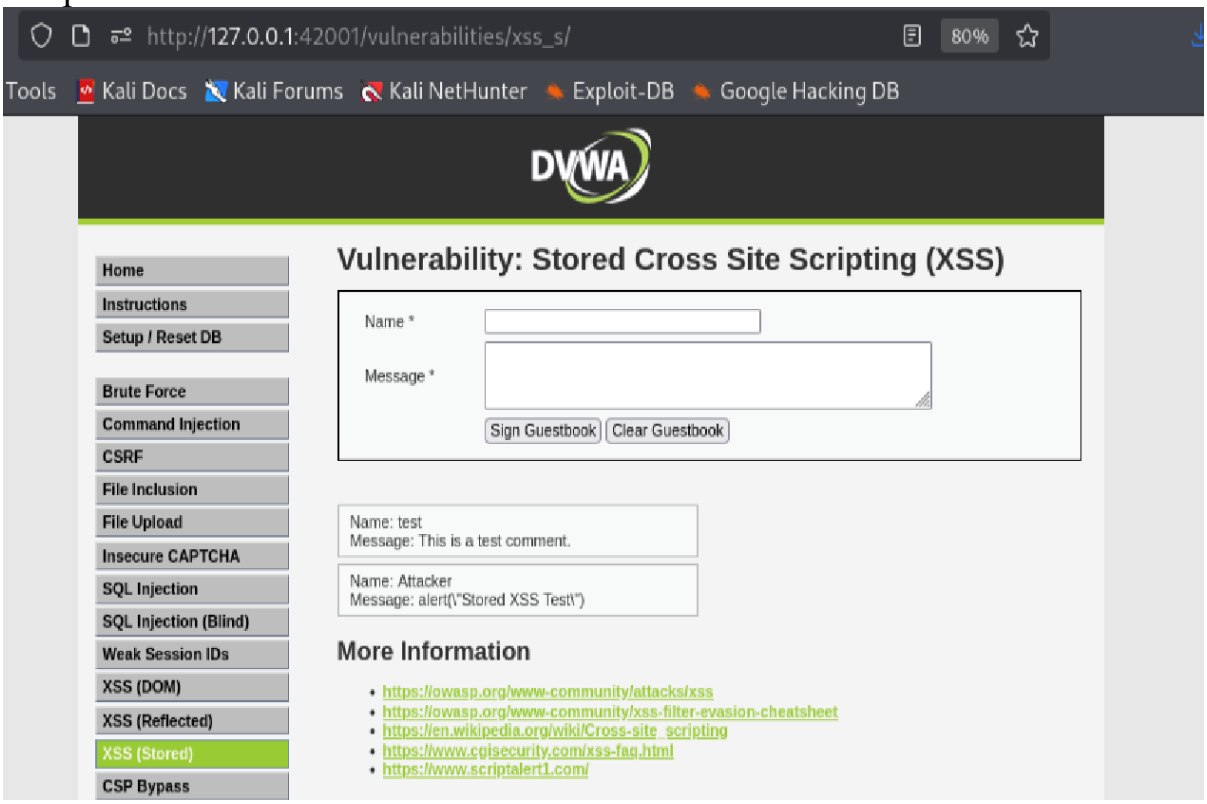


<Img src=x onerror=alert(“XSS”)>

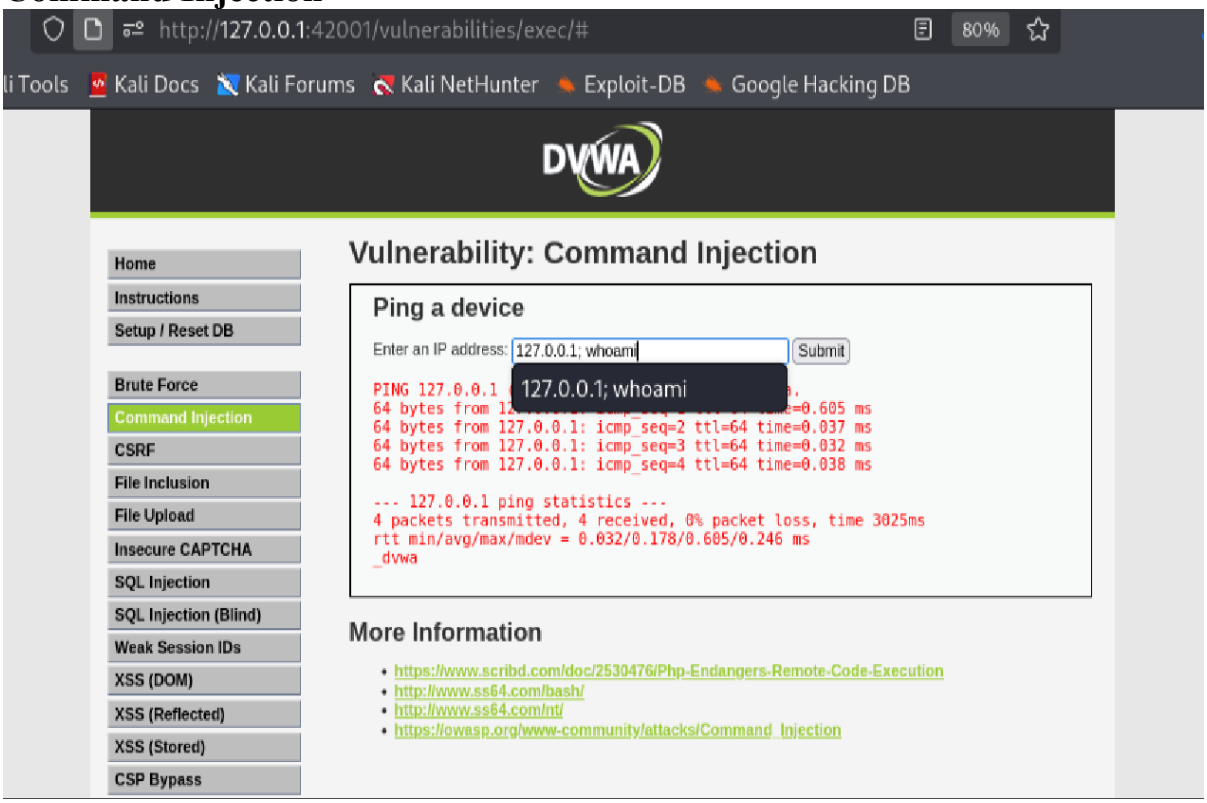




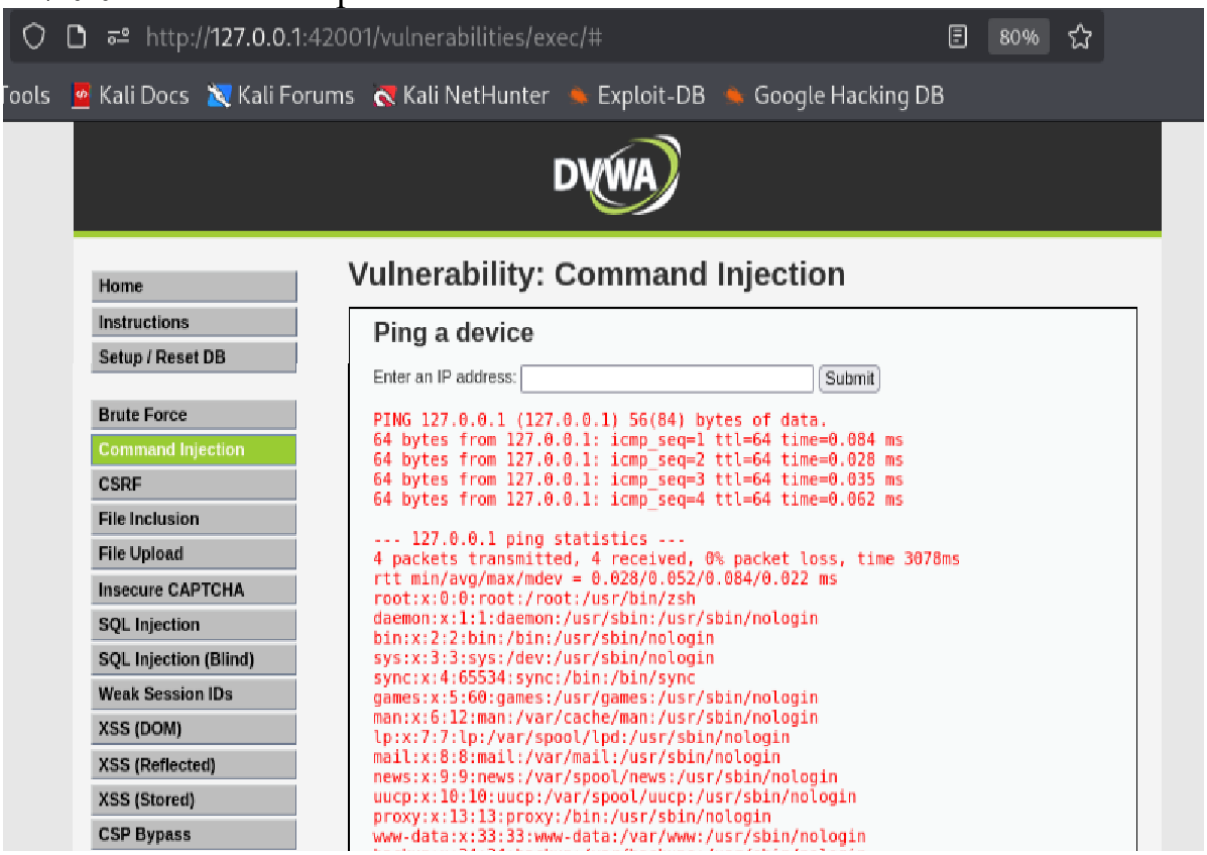
Script is saved in the database



Command Injection

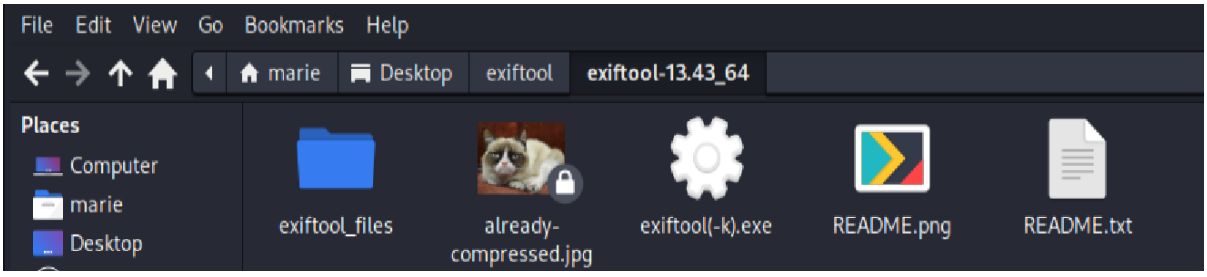


127.0.0.1 && cat /etc/passwd

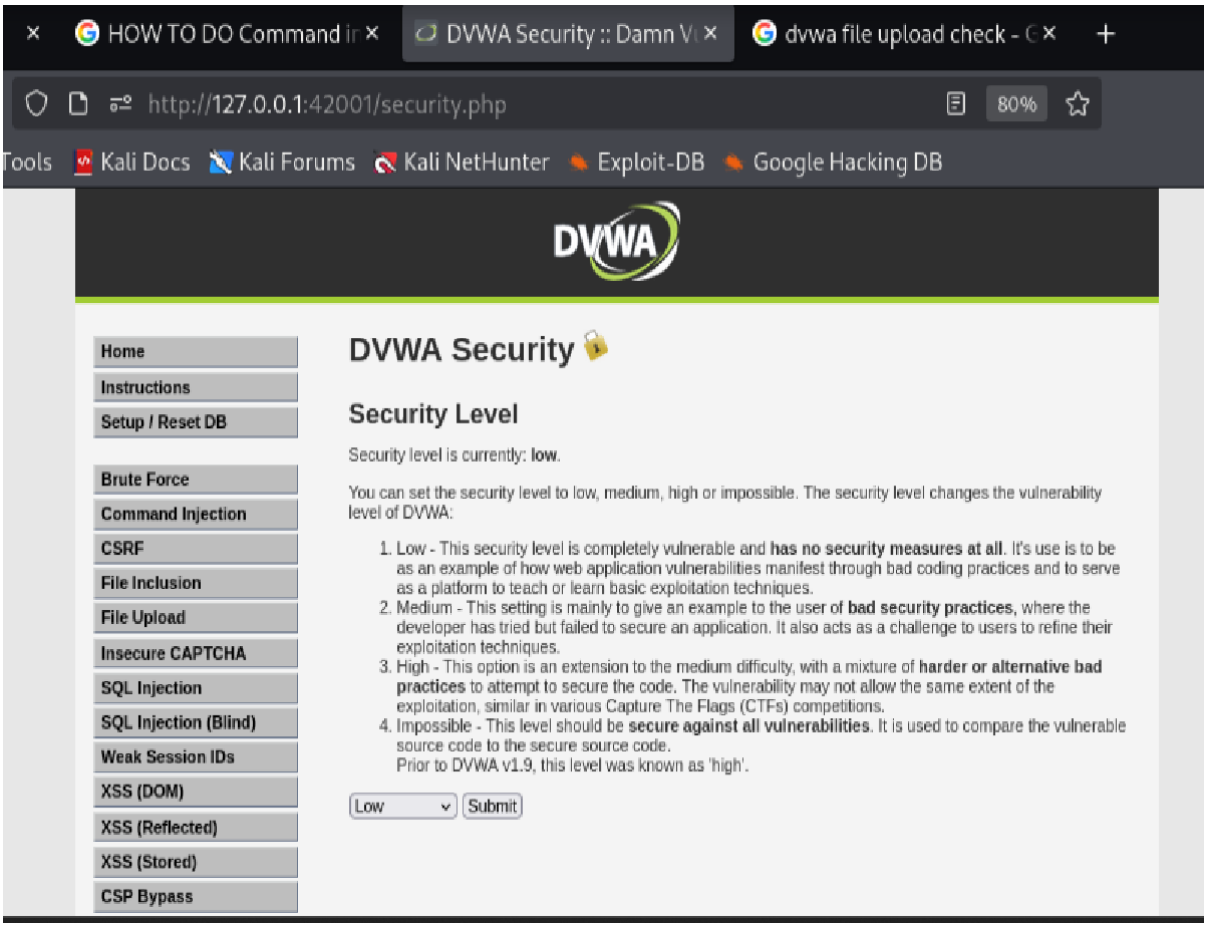


File Upload / Unrestricted File Upload

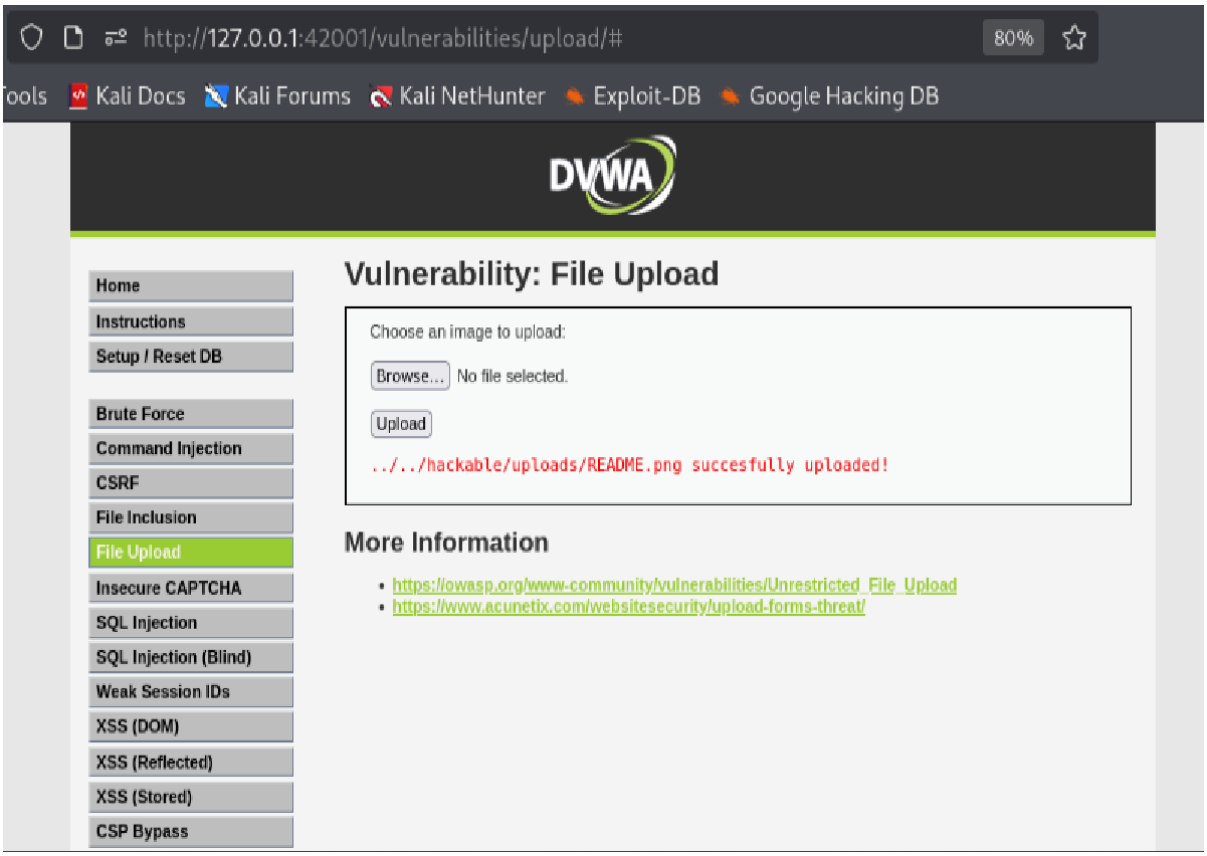
Trying to upload a “Readme.txt” file with the extension changed to “.png” as shown below:



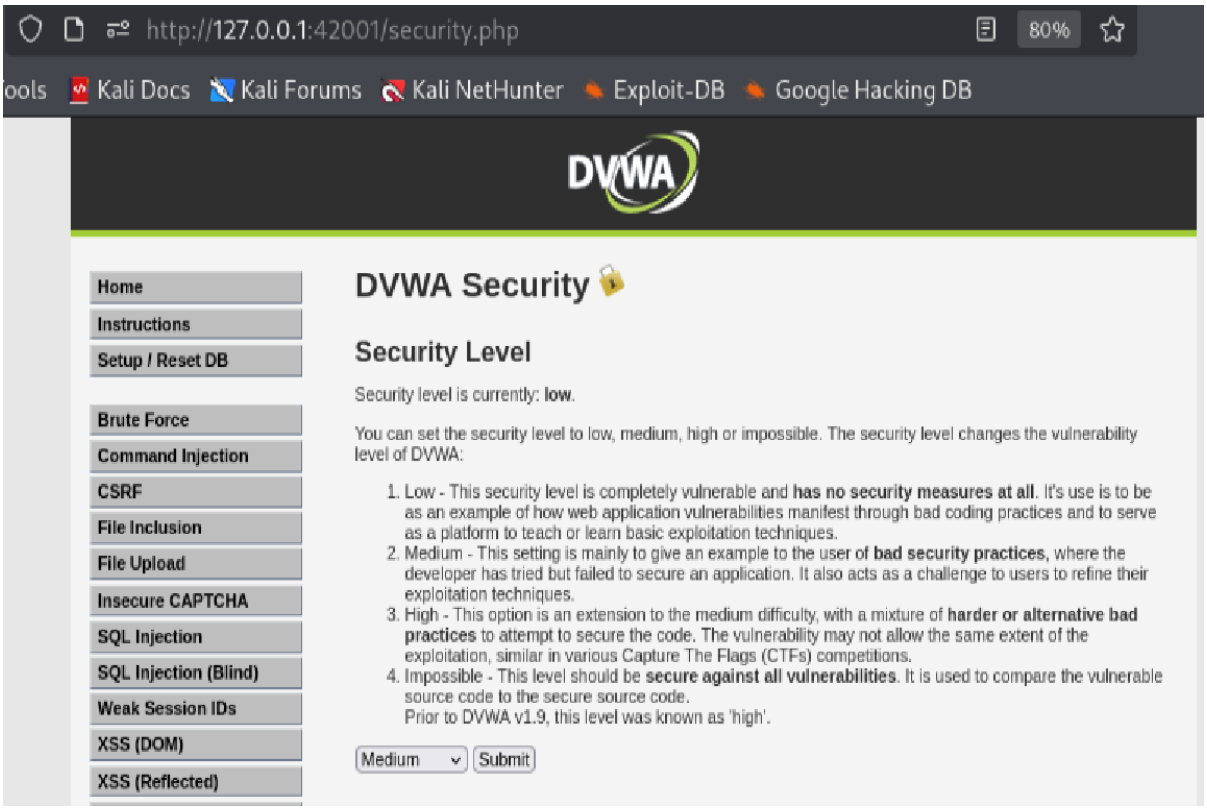
Setting the security level to “Low”

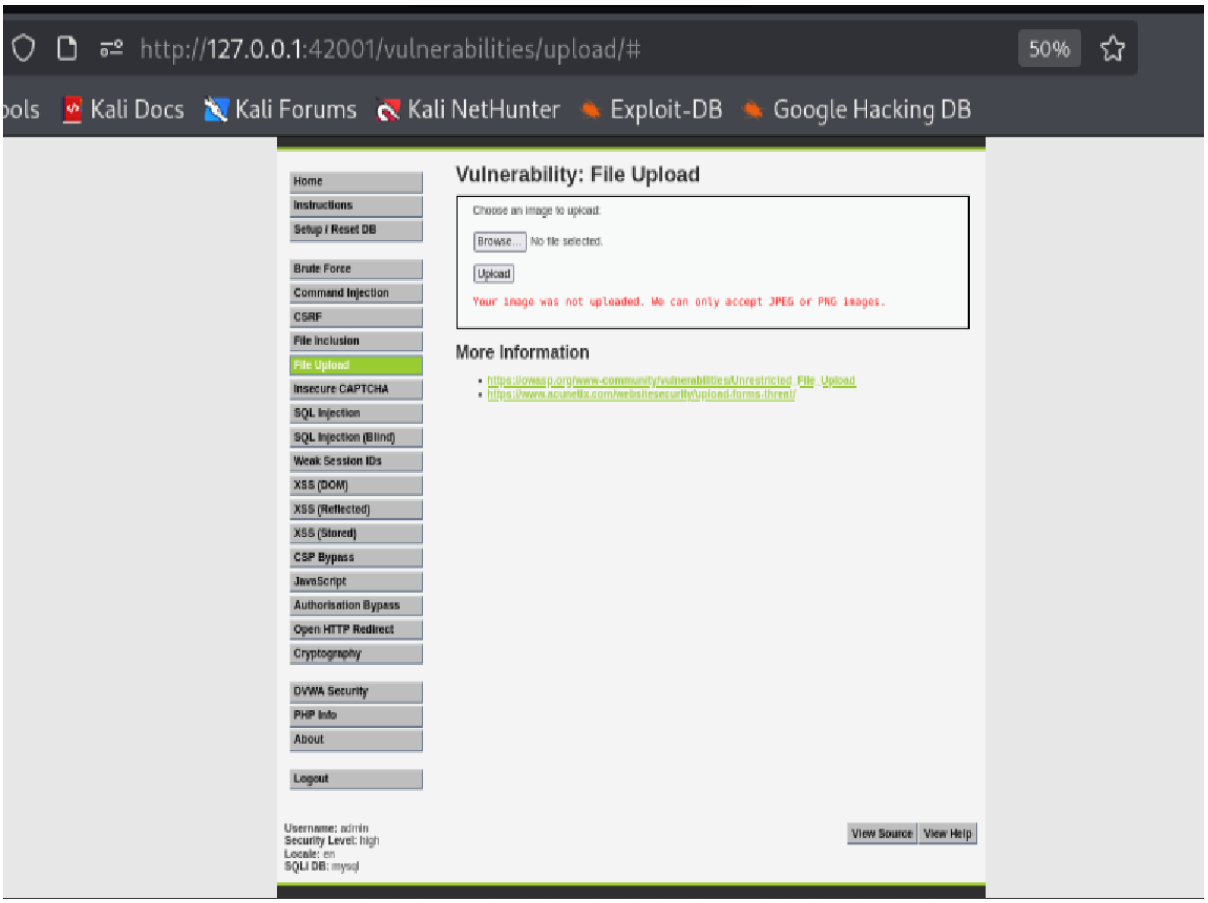


The file is accepted and uploaded as shown below though it is not originally a .png file:



The same observation is made for “Medium” level too. Setting the security level above “Medium” i.e, to “Impossible” or “High” to check if the vulnerability will be detected or not for the falsely created “Readme.png” file:


http://127.0.0.1:42001/security.php
80%
ools
Kali Docs
Kali Forums
Kali NetHunter
Exploit-DB
Google Hacking DB
DVWA
Home
Instructions
Setup / Reset DB
Brute Force
Command Injection
CSRF
File Inclusion
File Upload
Insecure CAPTCHA
SQL Injection
SQL Injection (Blind)
Weak Session IDs
XSS (DOM)
XSS (Reflected)
DVWA Security
Security Level
Security level is currently: low.
You can set the security level to low, medium, high or impossible. The security level changes the vulnerability level of DVWA:
1. Low - This security level is completely vulnerable and has no security measures at all. It's use is to be as an example of how web application vulnerabilities manifest through bad coding practices and to serve as a platform to teach or learn basic exploitation techniques.
2. Medium - This setting is mainly to give an example to the user of bad security practices, where the developer has tried but failed to secure an application. It also acts as a challenge to users to refine their exploitation techniques.
3. High - This option is an extension to the medium difficulty, with a mixture of harder or alternative bad practices to attempt to secure the code. The vulnerability may not allow the same extent of the exploitation, similar in various Capture The Flags (CTFs) competitions.
4. Impossible - This level should be secure against all vulnerabilities. It is used to compare the vulnerable source code to the secure source code.
Prior to DVWA v1.9, this level was known as 'high'.
Medium
Submit



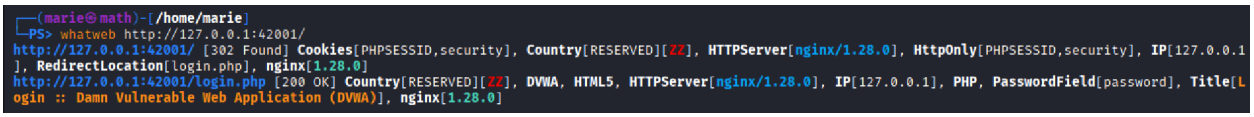
Security Misconfigurations / Insecure headers

```
┌──(marie㉿math)-[/home/marie]
└─PS> curl -I http://127.0.0.1:42001/
HTTP/1.1 302 Found
Server: nginx/1.28.0
Date: Sat, 20 Dec 2025 22:36:16 GMT
Content-Type: text/html; charset=UTF-8
Connection: keep-alive
Set-Cookie: security=impossible; path=/; HttpOnly
Expires: Thu, 19 Nov 1981 08:52:00 GMT
Cache-Control: no-store, no-cache, must-revalidate
Pragma: no-cache
Set-Cookie: PHPSESSID=5b9f6546e1e7993e399fe361b3fbd4dc; expires=Sun, 21 Dec 2025 22:36:16 GMT; Max-Age=86400; path=/; domain=127.0.0.1; HttpOnly; SameSite=S
trict
Location: login.php
```

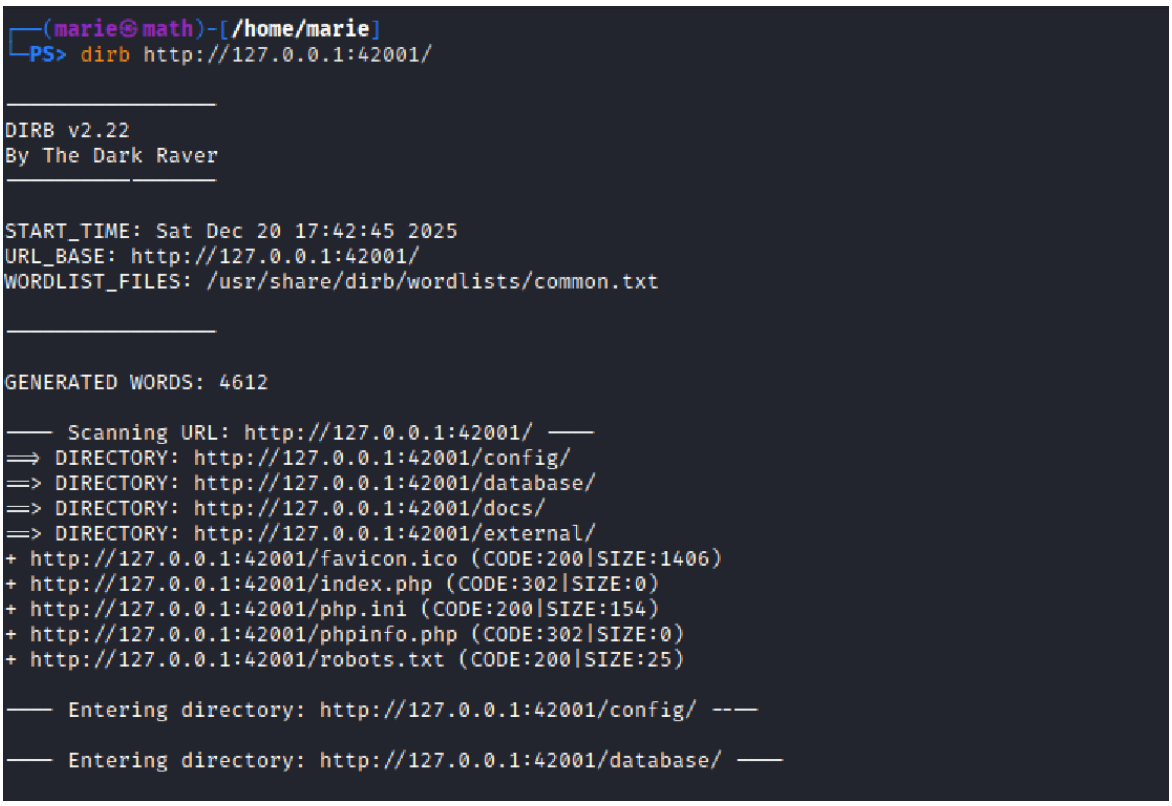
Step 4: Light automation

Run Nikto for quick server Misconfigurations

Run whatweb for Fingerprinting



Run Dirb or any other Content Discovery tool



```
──── Entering directory: http://127.0.0.1:42001/docs/ ────
+ http://127.0.0.1:42001/docs/copyright (CODE:200|SIZE:1085)
==> DIRECTORY: http://127.0.0.1:42001/docs/graphics/

──── Entering directory: http://127.0.0.1:42001/external/ ────

──── Entering directory: http://127.0.0.1:42001/docs/graphics/ ────

_____________________
END_TIME: Sat Dec 20 17:42:50 2025
DOWNLOADED: 27672 - FOUND: 6
```

Run nuclei

```
┌──(marie㉿math)-[/home/marie]
└─PS> nuclei -u http://127.0.0.1:42001/


                     __     _
   ____  __  _______/ /__  (_)
  / __ \/ / / / ___/ / _ \/ /
 / / / / /_/ / /__/ /  __/ /
/_/ /_/\__,_/\___/_/\___/_/   v3.4.10

                projectdiscovery.io

[WRN] Found 1 templates with syntax error (use -validate flag for further examination)
[INF] Current nuclei version: v3.4.10 (outdated)
[INF] Current nuclei-templates version: v10.3.5 (latest)
[INF] New templates added in latest release: 57
[INF] Templates loaded for current scan: 8910
[INF] Executing 8908 signed templates from projectdiscovery/nuclei-templates
[WRN] Loading 2 unsigned templates for scan. Use with caution.
[INF] Targets loaded for current scan: 1
[INF] Templates clustered: 1862 (Reduced 1749 Requests)
[dvwa-default-login] [http] [critical] http://127.0.0.1:42001/index.php [password="password",username="admin"]
[cookies-without-secure] [javascript] [info] 127.0.0.1:42001 ["security","PHPSESSID"]
[waf-detect:nginxgeneric] [http] [info] http://127.0.0.1:42001/
[INF] Scan completed in 1m. 3 matches found.
```