

Somaiya Vidyavihar University
K J Somaiya School of Engineering

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|---------------------|--|------------------|-----------|
| Course Name: | | | |
| | Information Security (116U01L602) | Semester: | VI |

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|-----------------------------|-----------------------|-----------------------|--------------------|
| Date of Performance: | 17 / 02 / 2025 | DIV/ Batch No: | B2 |
| Student Name: | Akshat Yadav | Roll No: | 16010122221 |

Title : Introduction to Open Web Application Security Project and implementation of Cross-site scripting (XSS) DVWA/ Burp Suite

Objectives:

To study Open Web Application Security Project and implement XSS.

Expected Outcome of Experiment:

CO1 - Identify and analyze web attacks

Abstract:

Damn Vulnerable Web Application (DVWA) is a deliberately vulnerable web application designed for security professionals and students to practice identifying and exploiting web vulnerabilities. It is developed using PHP and MySQL and provides a safe environment for learning about web security.

Related Theory:

Key Features of DVWA:

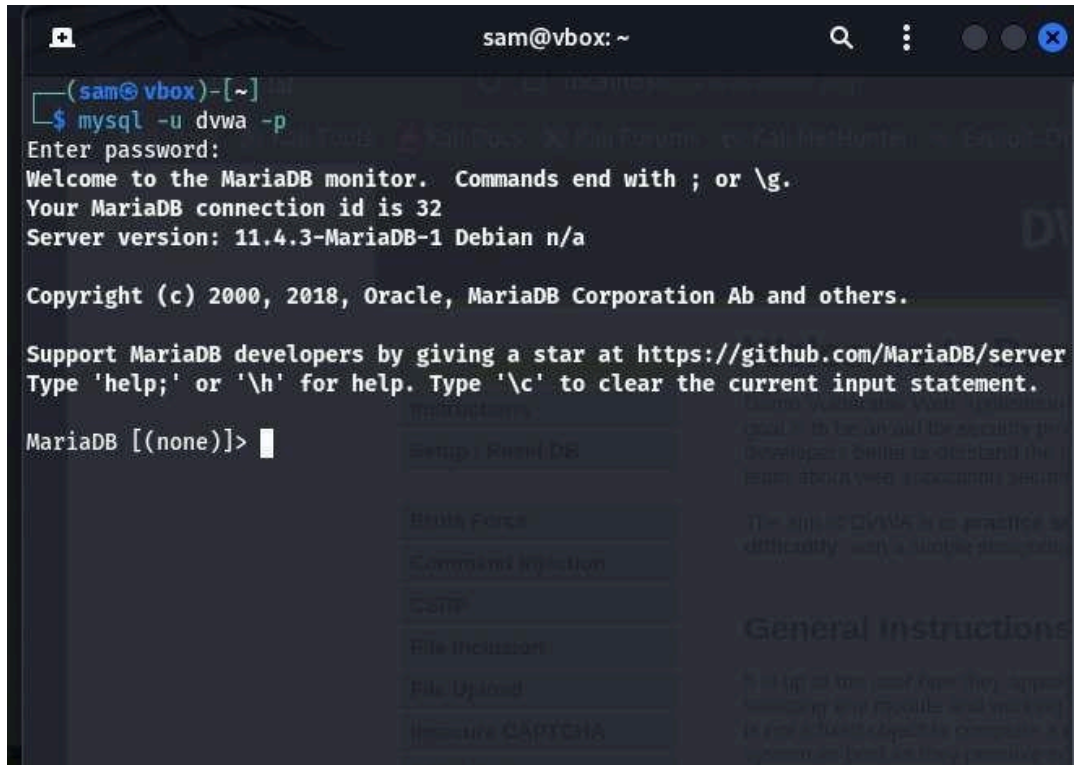
1. **Multiple Security Levels:** DVWA offers three security levels (Low, Medium, and High) to simulate different levels of security implementations.
2. **Wide Range of Vulnerabilities:** It includes vulnerabilities such as SQL Injection, Cross-site Scripting (XSS), Command Injection, and more.
3. **User Authentication:** Allows user authentication to control access and simulate real-world scenarios.
4. **Educational Tool:** Ideal for ethical hacking training, penetration testing practice, and understanding security flaws.

Benefits of Using DVWA:

- Hands-on learning experience.
- Understanding attack vectors and defensive measures.
- Enhancing cybersecurity skills.

Implementation Details:

Installation of DVWA:



```
(sam@vbox)-[~]
$ mysql -u dvwa -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 32
Server version: 11.4.3-MariaDB-1 Debian n/a

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Support MariaDB developers by giving a star at https://github.com/MariaDB/server
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]>
```

```
root@vbox: ~  
(sam@vbox)-[~]  
$ sudo su -  
[sudo] password for sam:  
(root@vbox)-[~]  
# mysql  
Welcome to the MariaDB monitor.  Commands end with ; or \g.  
Your MariaDB connection id is 31  
Server version: 11.4.3-MariaDB-1 Debian n/a  
  
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.  
  
Support MariaDB developers by giving a star at https://github.com/MariaDB/server  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
  
MariaDB [(none)]> create database dvwa;  
Query OK, 1 row affected (0.001 sec)  
  
MariaDB [(none)]> create database dvwa;^C  
MariaDB [(none)]> create user dvwa@localhost identified by 'p@ssw0rd';  
Query OK, 0 rows affected (0.009 sec)  
  
MariaDB [(none)]> grant all on dvwa.* to dvwa@localhost;  
Query OK, 0 rows affected (0.002 sec)
```

```
root@vbox: ~  
(sam@vbox)-[~]  
$ sudo su -  
[sudo] password for sam:  
(root@vbox)-[~]  
# mysql  
Welcome to the MariaDB monitor.  Commands end with ; or \g.  
Your MariaDB connection id is 31  
Server version: 11.4.3-MariaDB-1 Debian n/a  
  
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.  
  
Support MariaDB developers by giving a star at https://github.com/MariaDB/server  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
  
MariaDB [(none)]> create database dvwa;  
Query OK, 1 row affected (0.001 sec)  
  
MariaDB [(none)]>
```



```
sam@vbox: /var/www/html/DVWA

(sam@vbox)-[/var/www/html/DVWA]
$ sudo systemctl start mysql
[sudo] password for sam:

(sam@vbox)-[/var/www/html/DVWA]
$ sudo systemctl status mysql
● mariadb.service - MariaDB 11.4.3 database server
   Loaded: loaded (/usr/lib/systemd/system/mariadb.service; disabled; preset: disabled)
   Active: active (running) since Tue 2025-02-18 14:53:42 IST; 9min ago
 Invocation: 1df05509d3914982829a456c0b033146
    Docs: man:mariadb(8)
          https://mariadb.com/kb/en/library/systemd/
   Process: 13645 ExecStartPre=/usr/bin/install -m 755 -o mysql -g root -d /var/run/mysql (code=exited, status=0/SUCCESS)
   Process: 13649 ExecStartPre=/bin/sh -c systemctl unset-environment _WSREP_START_POSITION (code=exited, status=0/SUCCESS)
   Process: 13651 ExecStartPre=/bin/sh -c [ ! -e /usr/bin/galera_recovery ] && VAR= || VAR="/usr/bin/galera_recovery" (code=exited, status=0/SUCCESS)
   Process: 13725 ExecStartPost=/bin/sh -c systemctl unset-environment _WSREP_START_POSITION (code=exited, status=0/SUCCESS)
   Process: 13728 ExecStartPost=/etc/mysql/debian-start (code=exited, status=0/SUCCESS)
  Main PID: 13712 (mariabdd)
   Status: "Taking your SQL requests now..."
    Tasks: 9 (limit: 74190)
  Memory: 242.1M (peak: 247M)
     CPU: 2.220s
   CGroup: /system.slice/mariadb.service
           └─13712 /usr/sbin/mariabdd

Feb 18 14:53:41 vbox mariabdd[13712]: 2025-02-18 14:53:41 0 [Note] Plugin 'FEEDBACK' is disabled.
Feb 18 14:53:41 vbox mariabdd[13712]: 2025-02-18 14:53:41 0 [Note] Plugin 'wsrep-provider' is disabled.
Feb 18 14:53:41 vbox mariabdd[13712]: 2025-02-18 14:53:41 0 [Note] InnoDB: Buffer pool(s) load complete
Feb 18 14:53:42 vbox mariabdd[13712]: 2025-02-18 14:53:42 0 [Note] Server socket created on IP: '127.0.0.1'
Feb 18 14:53:42 vbox mariabdd[13712]: 2025-02-18 14:53:42 0 [Note] mariabdd: Event Scheduler: Loaded 0
Feb 18 14:53:42 vbox mariabdd[13712]: 2025-02-18 14:53:42 0 [Note] /usr/sbin/mariabdd: ready for connect
```

```
sam@vbox: /var/www/html/DVWA

(sam@vbox)-[/var/www/html]
$ cd DVWA

(sam@vbox)-[/var/www/html/DVWA]
$ ls
about.php      dvwa          phpinfo.php   README.md     security.php
CHANGELOG.md  external      php.ini       README.pl.md  security.txt
compose.yml    favicon.ico   README.ar.md  README.pt.md  setup.php
config         hackable     README.es.md  README.tr.md  tests
COPYING.txt   index.php    README.fa.md  README.vi.md  vulnerabilities
database       instructions.php README.fr.md  README.zh.md
Dockerfile    login.php    README.id.md  robots.txt
docs          logout.php   README.ko.md  SECURITY.md

(sam@vbox)-[/var/www/html/DVWA]
$ ls config
config.inc.php.dist

(sam@vbox)-[/var/www/html/DVWA]
$ cp config/config.inc.php.dist config/config.inc.php

(sam@vbox)-[/var/www/html/DVWA]
$ vim config/config.inc.php

zsh: suspended vim config/config.inc.php

(sam@vbox)-[/var/www/html/DVWA]
$ service mariadb start

(sam@vbox)-[/var/www/html/DVWA]
$
```

```
Feb 1
sam@vbox: /var

<?php

# If you are having problems connecting to the MySQL database and all of the variables below are correct
# try changing the 'db_server' variable from localhost to 127.0.0.1. Fixes a problem due to sockets.
# Thanks to @diginijs for the fix.

# Database management system to use
$DBMS = getenv('DBMS') ? 'MySQL' : 'MySQL';
# $DBMS = 'PGSQL'; // Currently disabled

# Database variables
# WARNING: The database specified under db_database WILL BE ENTIRELY DELETED during setup.
# Please use a database dedicated to DVWA.
#
# If you are using MariaDB then you cannot use root, you must use create a dedicated DVWA user.
# See README.md for more information on this.
$_DVWA = array();
$_DVWA['db_server'] = getenv('DB_SERVER') ? '127.0.0.1' : 'localhost';
$_DVWA['db_database'] = getenv('DB_DATABASE') ? 'dvwa' : 'dvwa';
$_DVWA['db_user'] = getenv('DB_USER') ? 'dvwa' : 'root';
$_DVWA['db_password'] = getenv('DB_PASSWORD') ? 'password' : 'password';
$_DVWA['db_port'] = getenv('DB_PORT') ? '3306' : '3306';

# ReCAPTCHA settings
# Used for the 'Insecure CAPTCHA' module
# You'll need to generate your own keys at: https://www.google.com/recaptcha/admin
$_DVWA['recaptcha_public_key'] = getenv('RECAPTCHA_PUBLIC_KEY') ? '' : '';
$_DVWA['recaptcha_private_key'] = getenv('RECAPTCHA_PRIVATE_KEY') ? '' : '';

# Default security level
# Default value for the security level with each session.
# The default is 'impossible'. You may wish to set this to either 'low', 'medium', 'high' or 'impossible'.
$_DVWA['default_security_level'] = getenv('DEFAULT_SECURITY_LEVEL') ? 'impossible' : 'impossible';

# Default locale
# Default locale for the help page shown with each session.
# The default is 'en'. You may wish to set this to either 'en' or 'zh'.
$_DVWA['default_locale'] = getenv('DEFAULT_LOCALE') ? 'en' : 'en';

# Disable authentication
# Some tools don't like working with authentication and passing cookies around
# so this setting lets you turn off authentication.
$_DVWA['disable_authentication'] = getenv('DISABLE_AUTHENTICATION') ? false : false;

define('MYSQL', 'mysql');
define('SQLITE', 'sqlite');

# SQLi DB Backend
# Use this to switch the backend database used in the SQLi and Blind SQLi labs.
# This does not affect the backend for any other services, just these two labs.
# If you do not understand what this means, do not change it.
```

```
sam@vbox: /var/www/html/DVWA

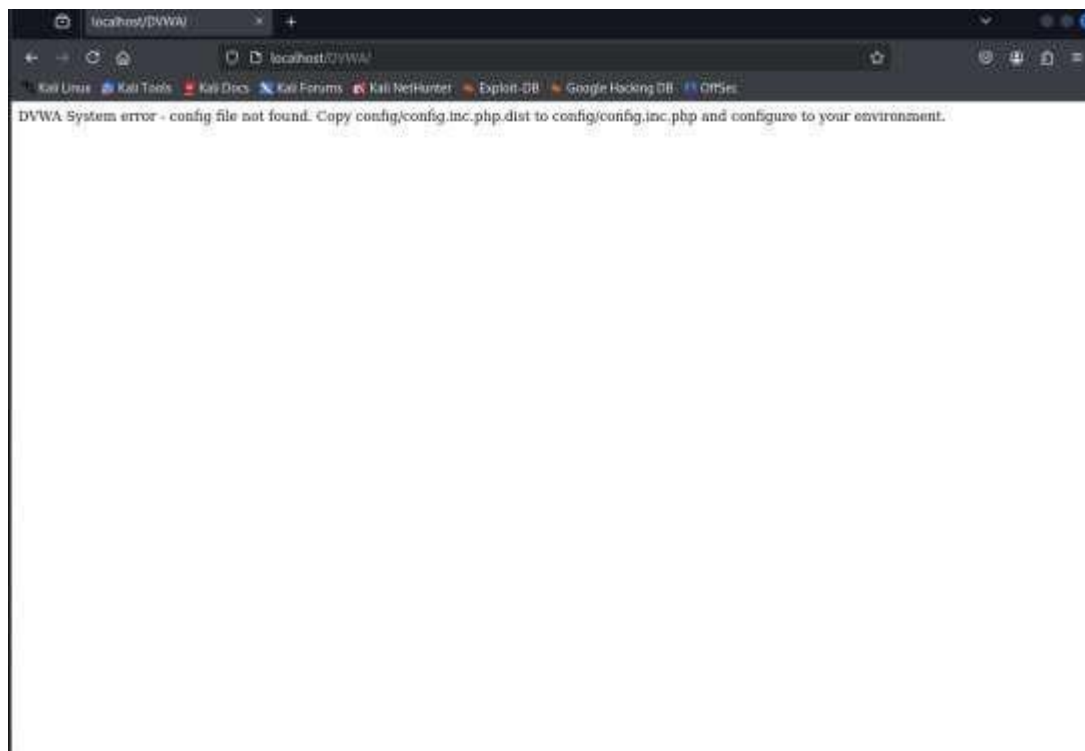
(sam@vbox)-[/var/www/html]
$ sudo service apache2 start

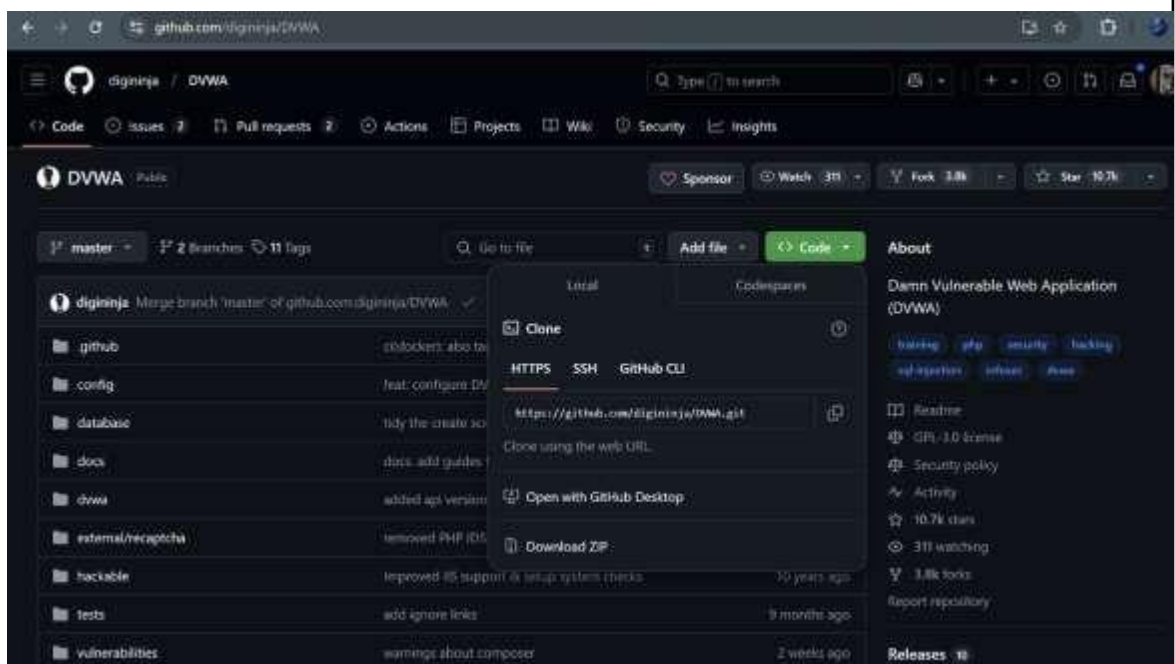
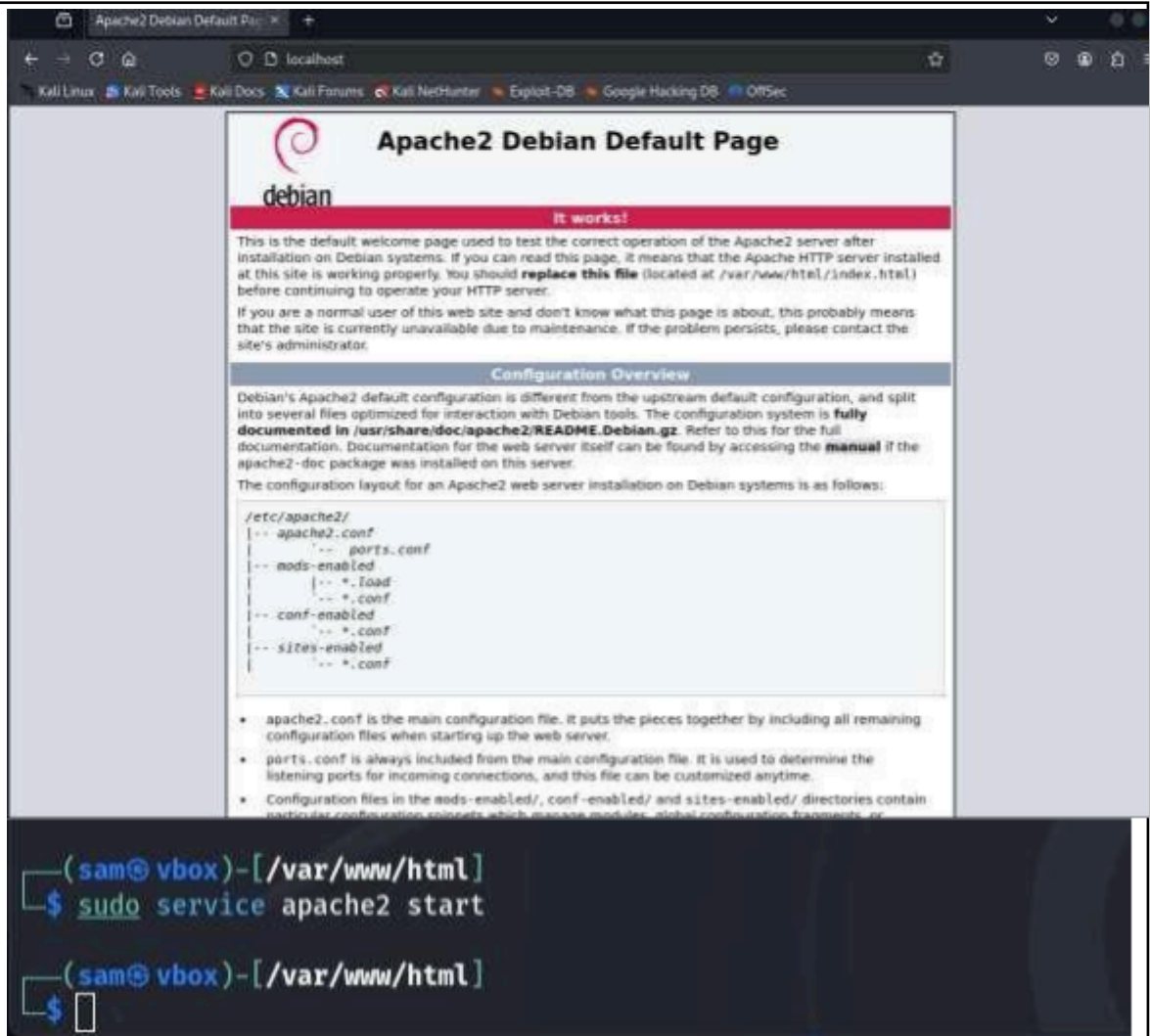
(sam@vbox)-[/var/www/html]
$ cd DVWA

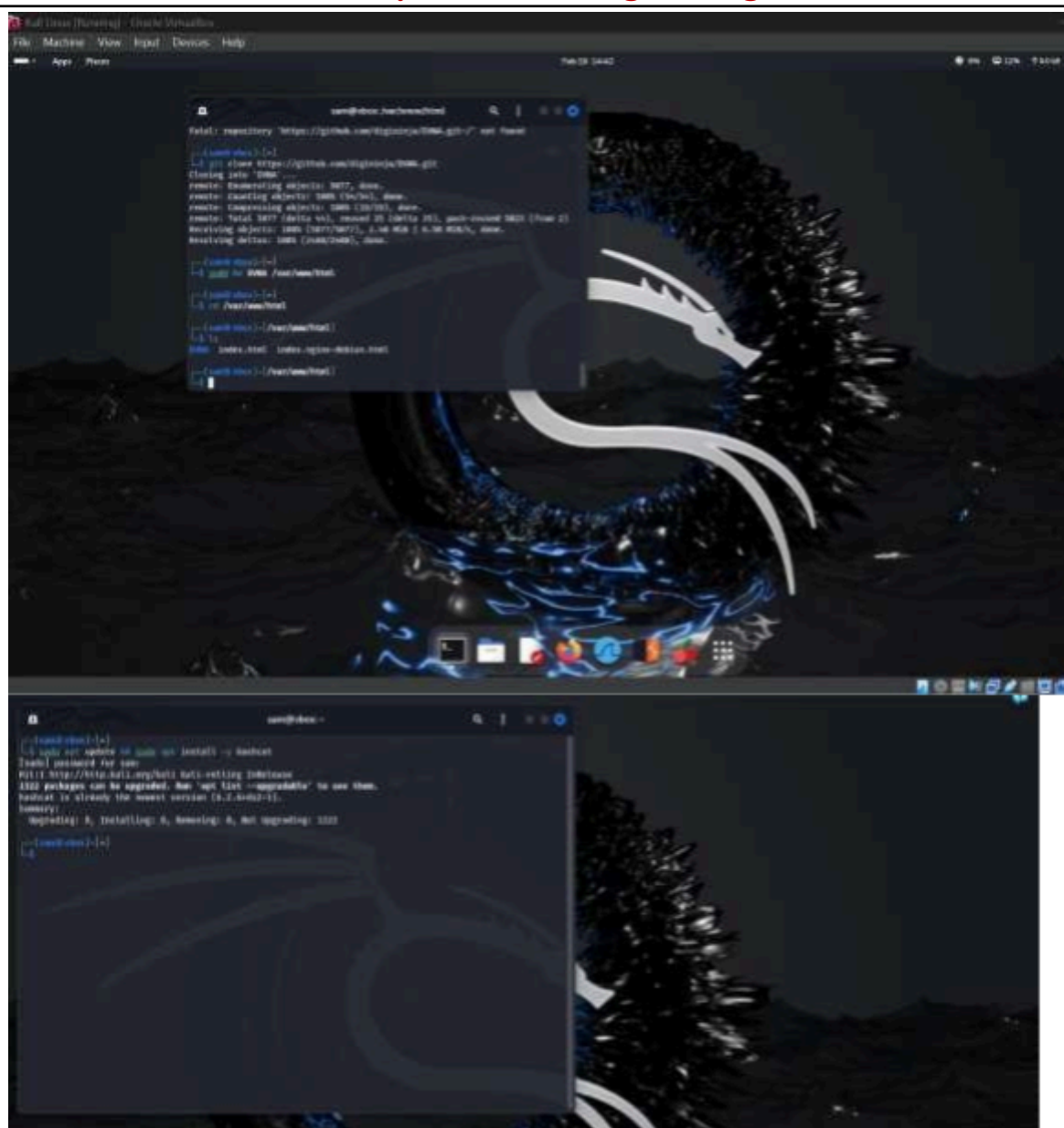
(sam@vbox)-[/var/www/html/DVWA]
$ ls
about.php      dvwa           phpinfo.php    README.md      security.php
CHANGELOG.md   external       php.ini        README.pl.md   security.txt
compose.yml     favicon.ico    README.ar.md   README.pt.md   setup.php
config          hackable       README.es.md   README.tr.md   tests
COPYING.txt    index.php      README.fa.md   README.vi.md   vulnerabilities
database       instructions.php README.fr.md   README.zh.md
Dockerfile     login.php      README.id.md   robots.txt
docs           logout.php     README.ko.md   SECURITY.md

(sam@vbox)-[/var/www/html/DVWA]
$ ls config
config.inc.php.dist

(sam@vbox)-[/var/www/html/DVWA]
$
```







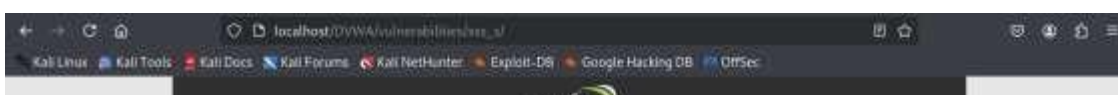
```
(sam@vbox)-[~/Downloads]
$ hashcat -m 0 -a 6 text.txt /usr/share/wordlists/rockyou.txt.gz ?d?d?d
hashcat (v6.2.6) starting

OpenCL API (OpenCL 3.0 PoCL 6.0+debian Linux, None+Asserts, RELOC, LLVM 17.0.6, SLEEF, DISTRO, POCL_DEBUG)
- Platform #1 [The pocl project]
=====
* Device #1: cpu-penryn-AMD Ryzen 9 6900HS with Radeon Graphics, 3689/7443 MB (1024 MB allocatable), 4MCU

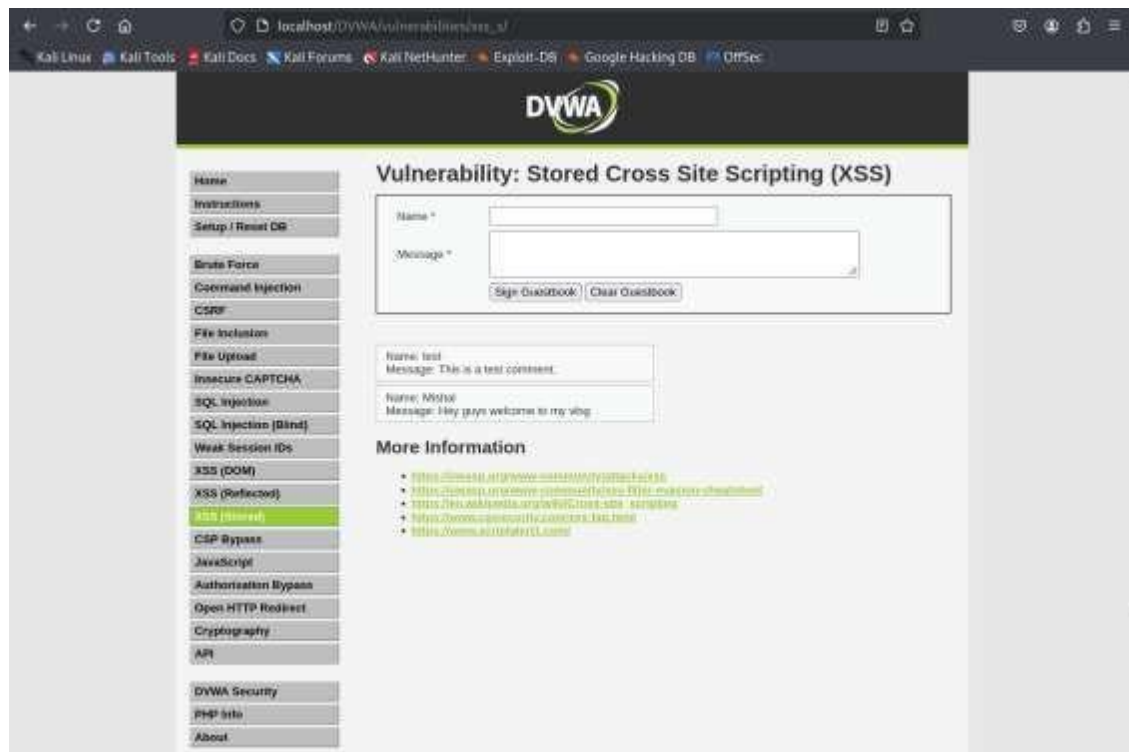
Minimum password length supported by kernel: 0
Maximum password length supported by kernel: 256

INFO: All hashes found as potfile and/or empty entries! Use --show to display them.

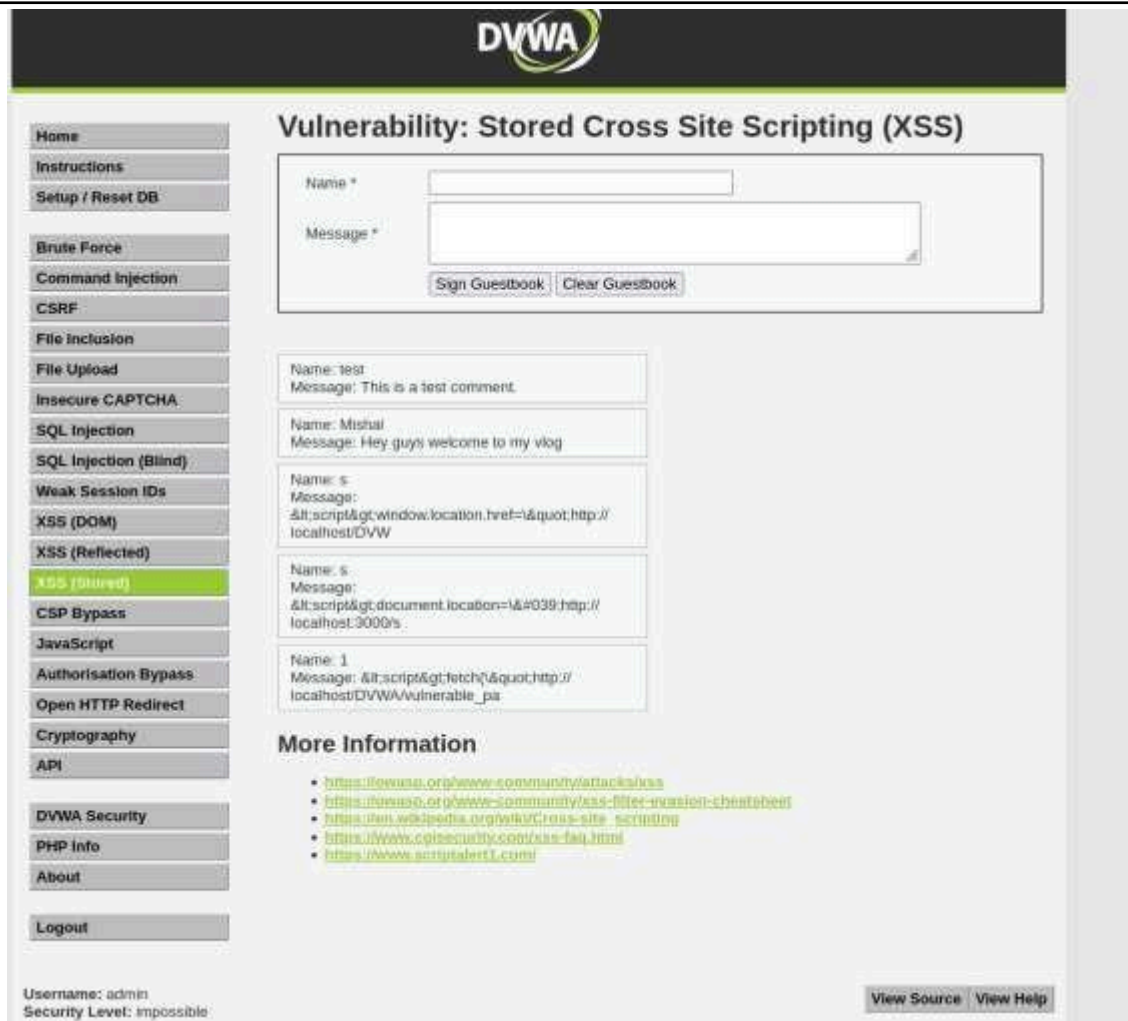
Started: Mon Feb 17 22:38:22 2025
Stopped: Mon Feb 17 22:38:22 2025
```



Implementation of XSS Using DVWA:



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The screenshot displays the DVWA web application interface. On the left is a navigation menu with various security topics. The main content area is titled 'Vulnerability: Stored Cross Site Scripting (XSS)' and features a form for submitting a message. Below the form, several example messages are shown, including one with a script tag that triggers an alert. At the bottom, there is a 'More Information' section with links to external resources.

Navigation Menu:

- 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)
- XSS (Blind)**
- CSP Bypass
- JavaScript
- Authorisation Bypass
- Open HTTP Redirect
- Cryptography
- API
- DVWA Security
- PHP Info
- About
- Logout

Vulnerability: Stored Cross Site Scripting (XSS)

Name *

Message *

Name: test
Message: This is a test comment.

Name: Mishal
Message: Hey guys welcome to my vlog

Name: s
Message: `<script>window.location.href='http://localhost/DVWA'`

Name: s
Message: `<script>document.location='http://localhost:3000/s'`

Name: 1
Message: `<script>fetch('http://localhost/DVWA/vulnerable_php')`

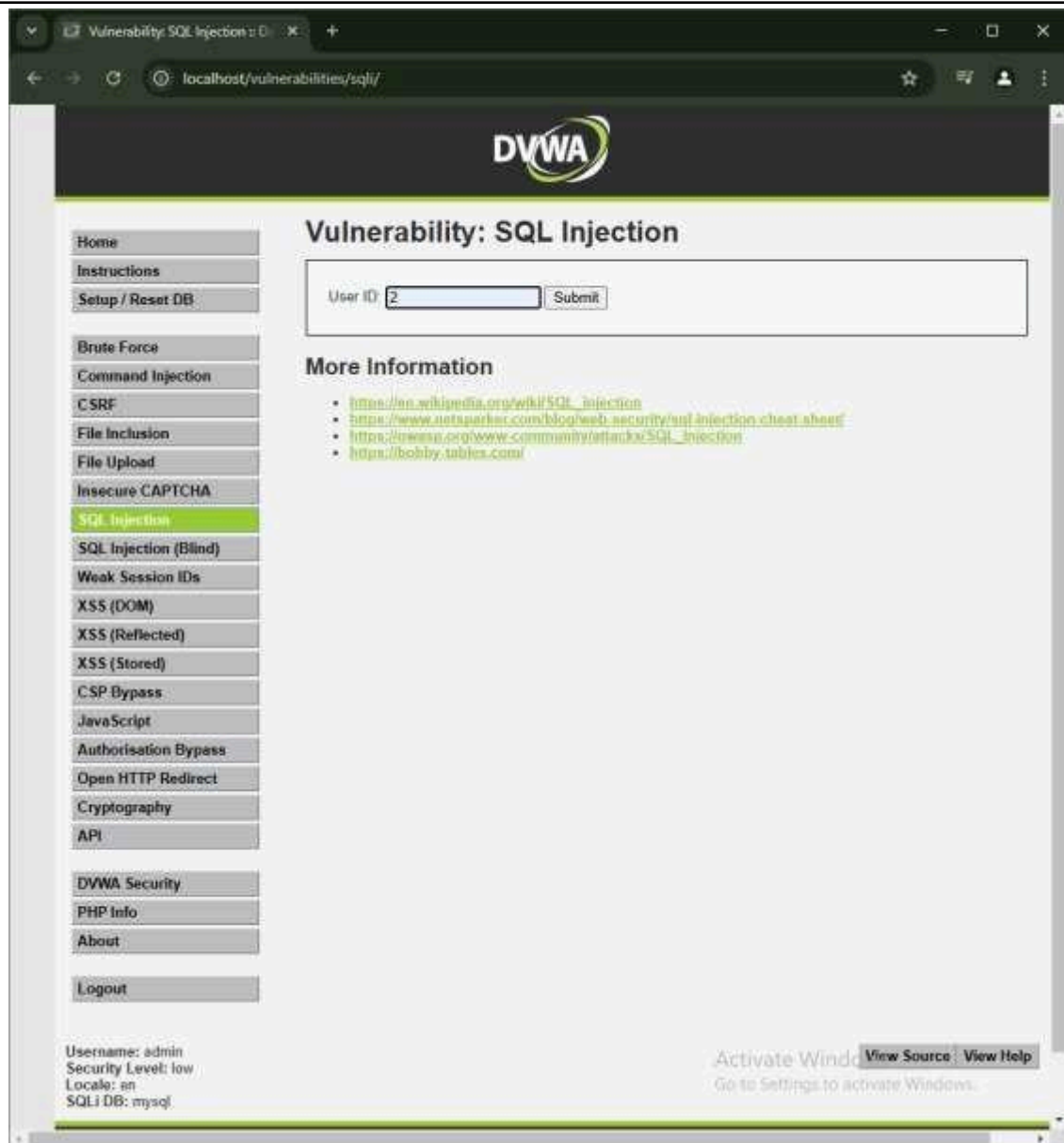
More Information

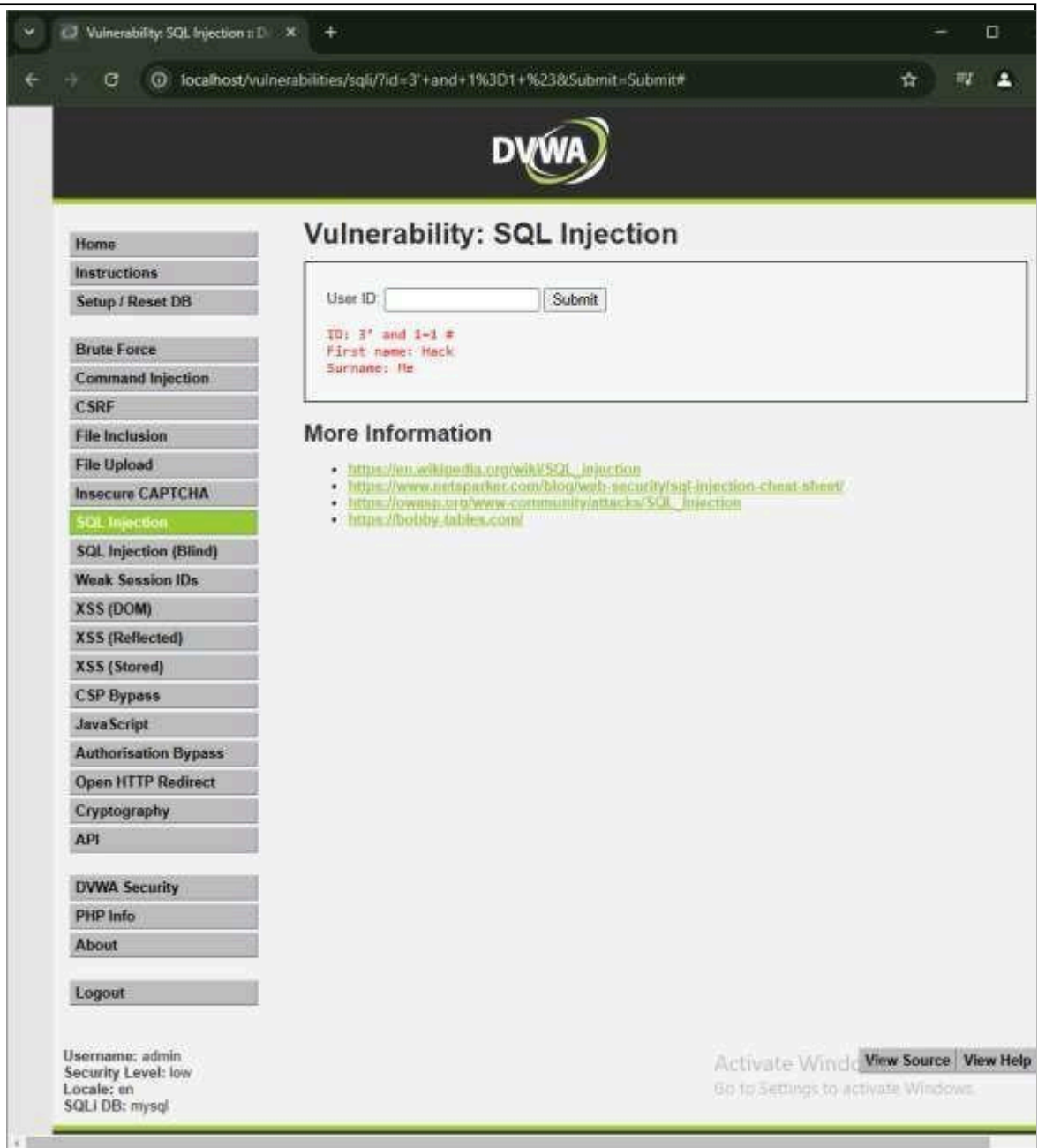
- <https://owasp.org/www-community/attacks/xss>
- <https://owasp.org/www-community/xss-filter-injection-cheat-sheet>
- https://en.wikipedia.org/wiki/Cross-site_scripting
- <https://www.cisecurity.com/xss-faq.html>
- <https://www.scrtutalant.com/>

Username: admin
Security Level: impossible

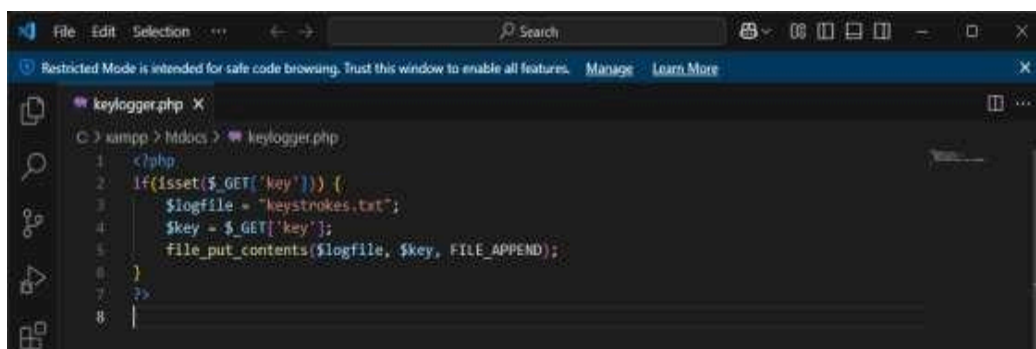
Explain XSS:
Implementation with screen shots:

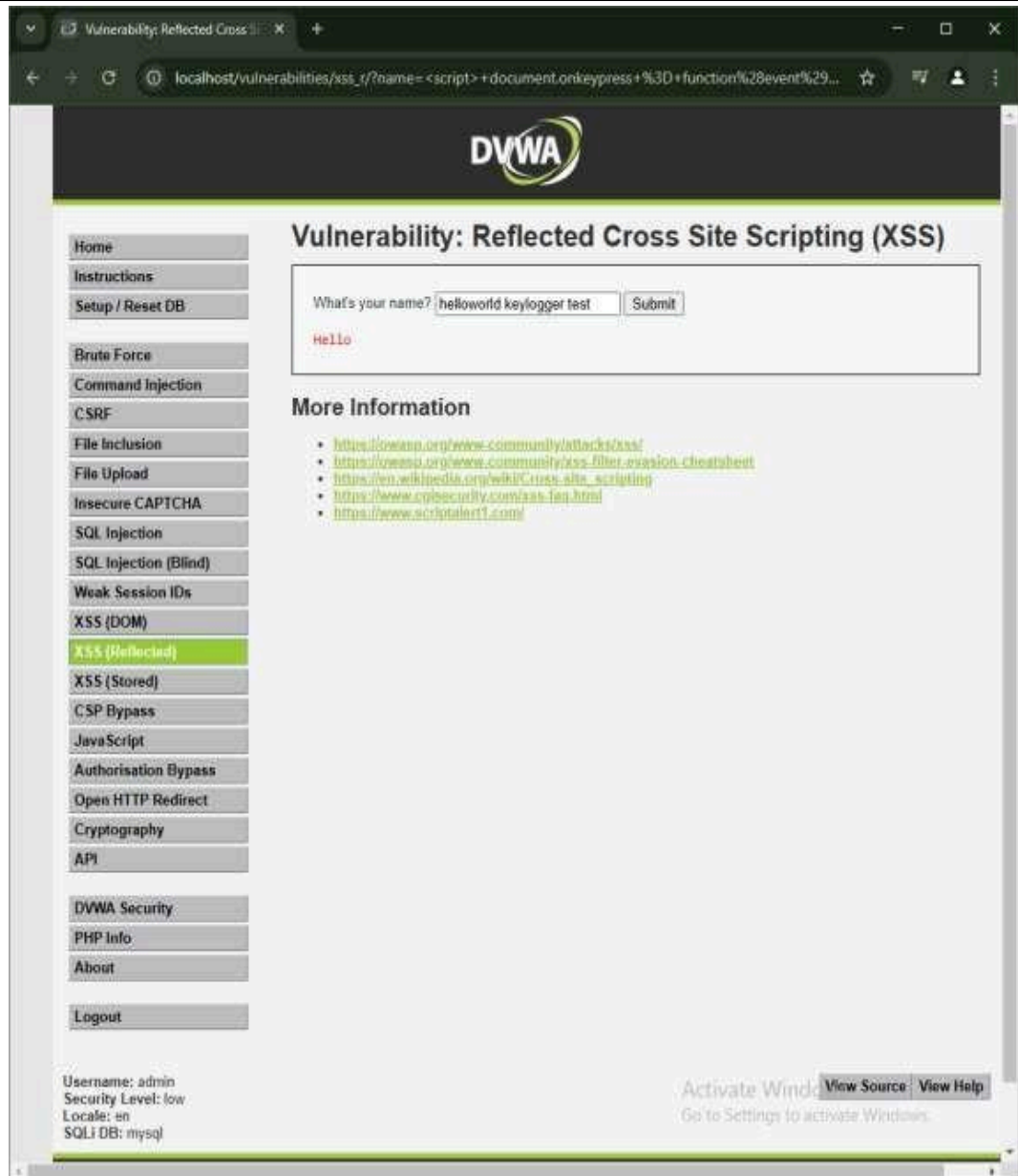
1. SQL injection





2. Keylogger





Vulnerability: Reflected Cross Site Scripting (XSS)

What's your name?

Hello

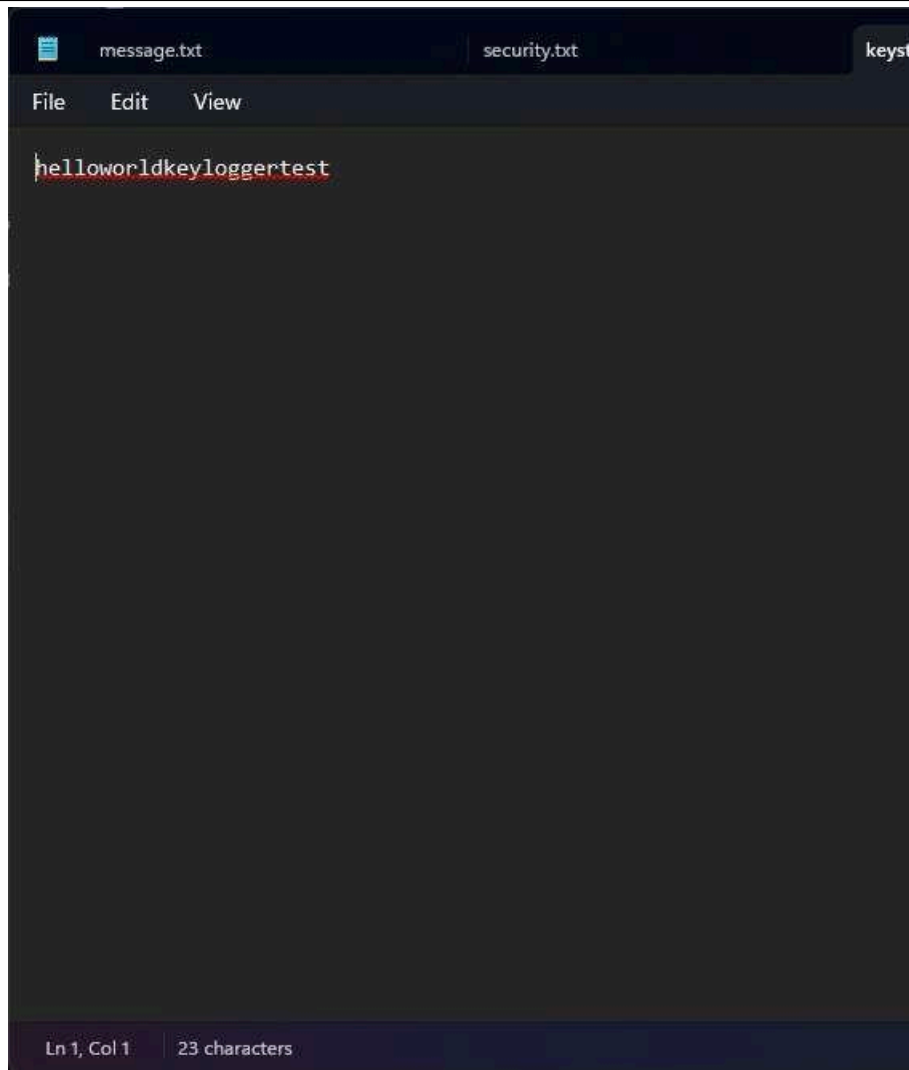
More Information

- <https://www.exploit-db.com/exploits/13371/>
- <https://www.exploit-db.com/exploits/13371/>
- https://en.wikipedia.org/wiki/Cross-site_scripting
- <https://www.cryptohack.org/xss-faq.html>
- <https://www.scriptalert1.com/>

Username: admin
Security Level: low
Locale: en
SQL DB: mysql

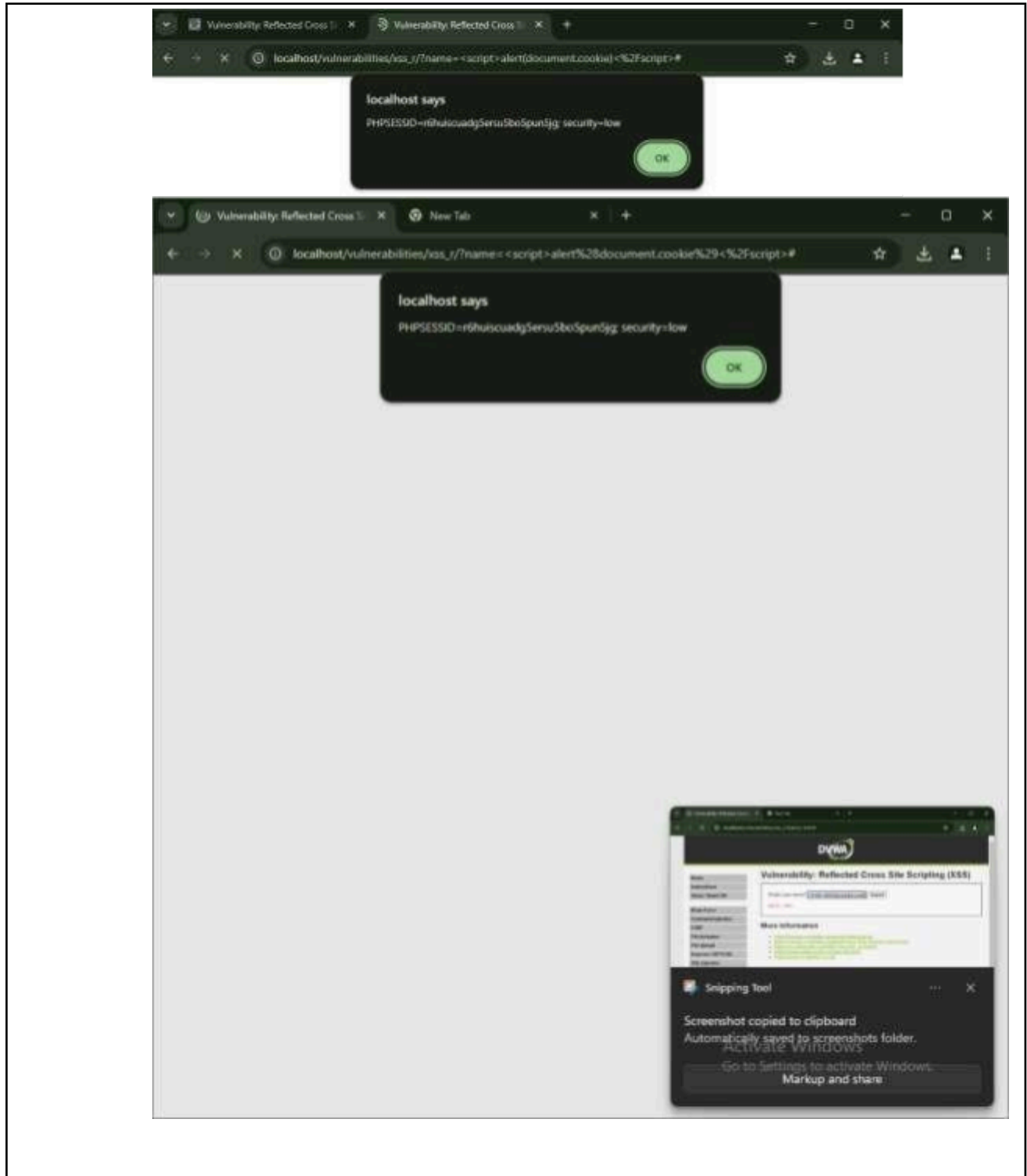
Activate Windows. Go to Settings to activate Windows.

3.

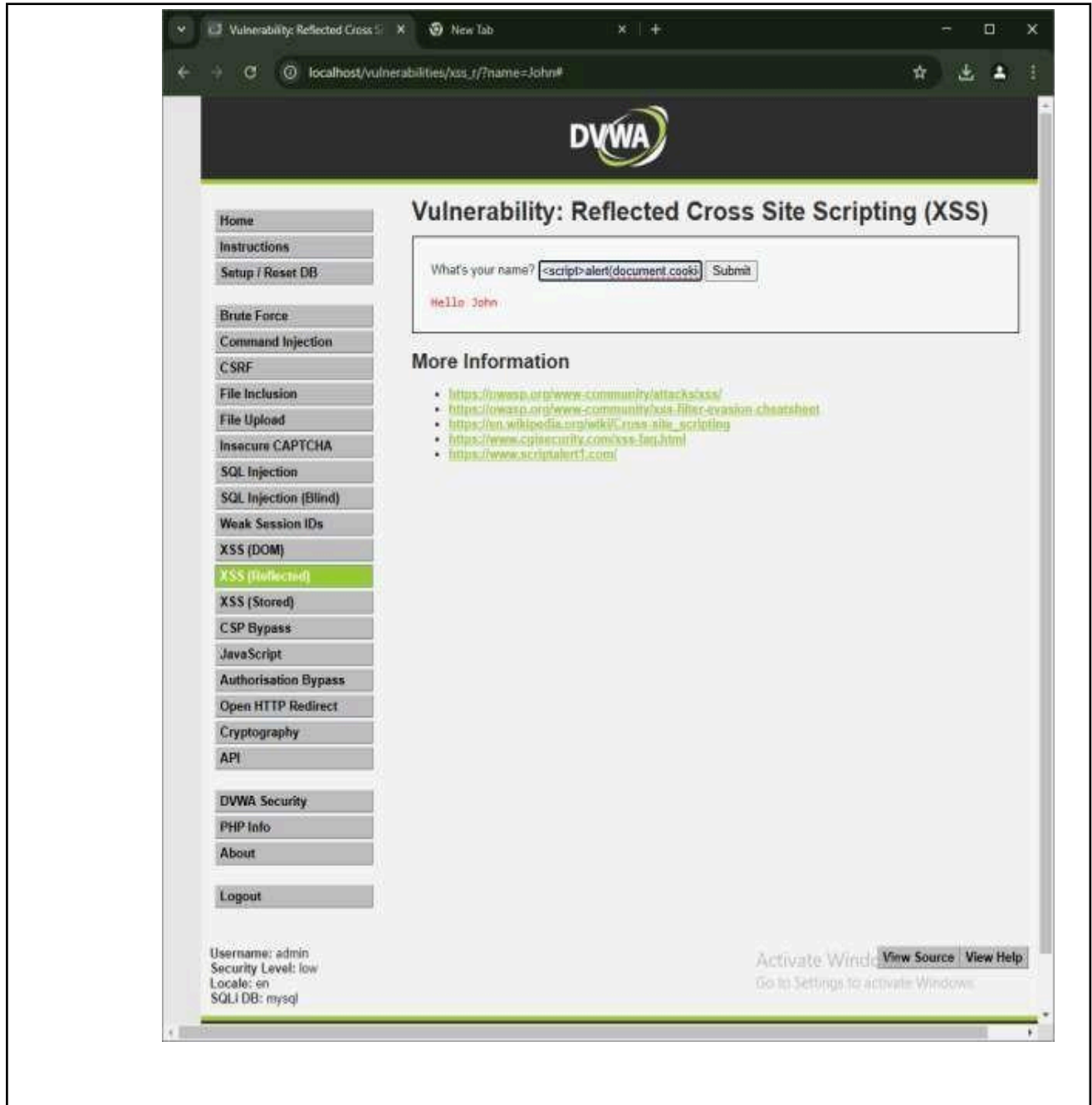


The screenshot shows a text editor with a dark background. The menu bar at the top includes 'File', 'Edit', and 'View'. The title bar shows three open files: 'message.txt', 'security.txt', and 'keyst...'. The main text area contains the string 'helloworldkeyloggertest' on the first line. The status bar at the bottom indicates 'Ln 1, Col 1' and '23 characters'.

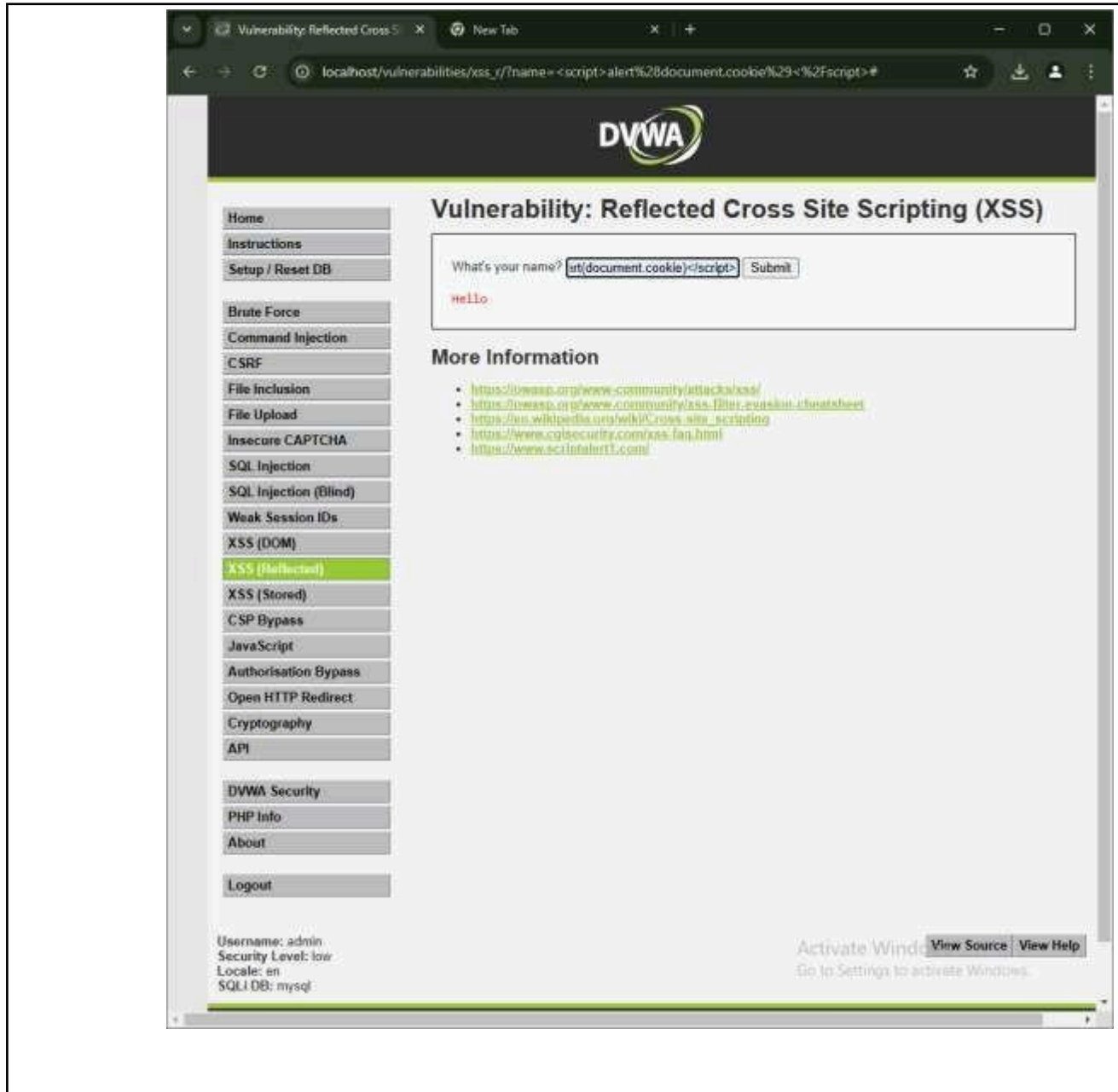
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The screenshot shows a web browser window displaying the DVWA (Damn Vulnerable Web Application) interface. The browser's address bar shows the URL `localhost/vulnerabilities/xss_r/?name=John`. The page title is "Vulnerability: Reflected Cross Site Scripting (XSS)". The main content area features a form with the label "What's your name?" and a text input field containing the payload `<script>alert(document.cookie)</script>`. A "Submit" button is next to the input field. Below the form, the text "Hello: John" is displayed. On the left side, there is a sidebar menu with various vulnerability categories, including "Home", "Brute Force", "Command Injection", "CSRF", "File Inclusion", "File Upload", "Insecure CAPTCHA", "SQL Injection", "SQL Injection (Blind)", "Weak Session IDs", "XSS (DOM)", "XSS (Reflected)" (which is highlighted), "XSS (Stored)", "CSP Bypass", "JavaScript", "Authorisation Bypass", "Open HTTP Redirect", "Cryptography", "API", "DVWA Security", "PHP Info", "About", and "Logout". Below the sidebar, the user information is shown: "Username: admin", "Security Level: low", "Locale: en", and "SQL DB: mysql". At the bottom right, there are links for "View Source" and "View Help".



Vulnerability: Reflected Cross Site Scripting (XSS)

What's your name?

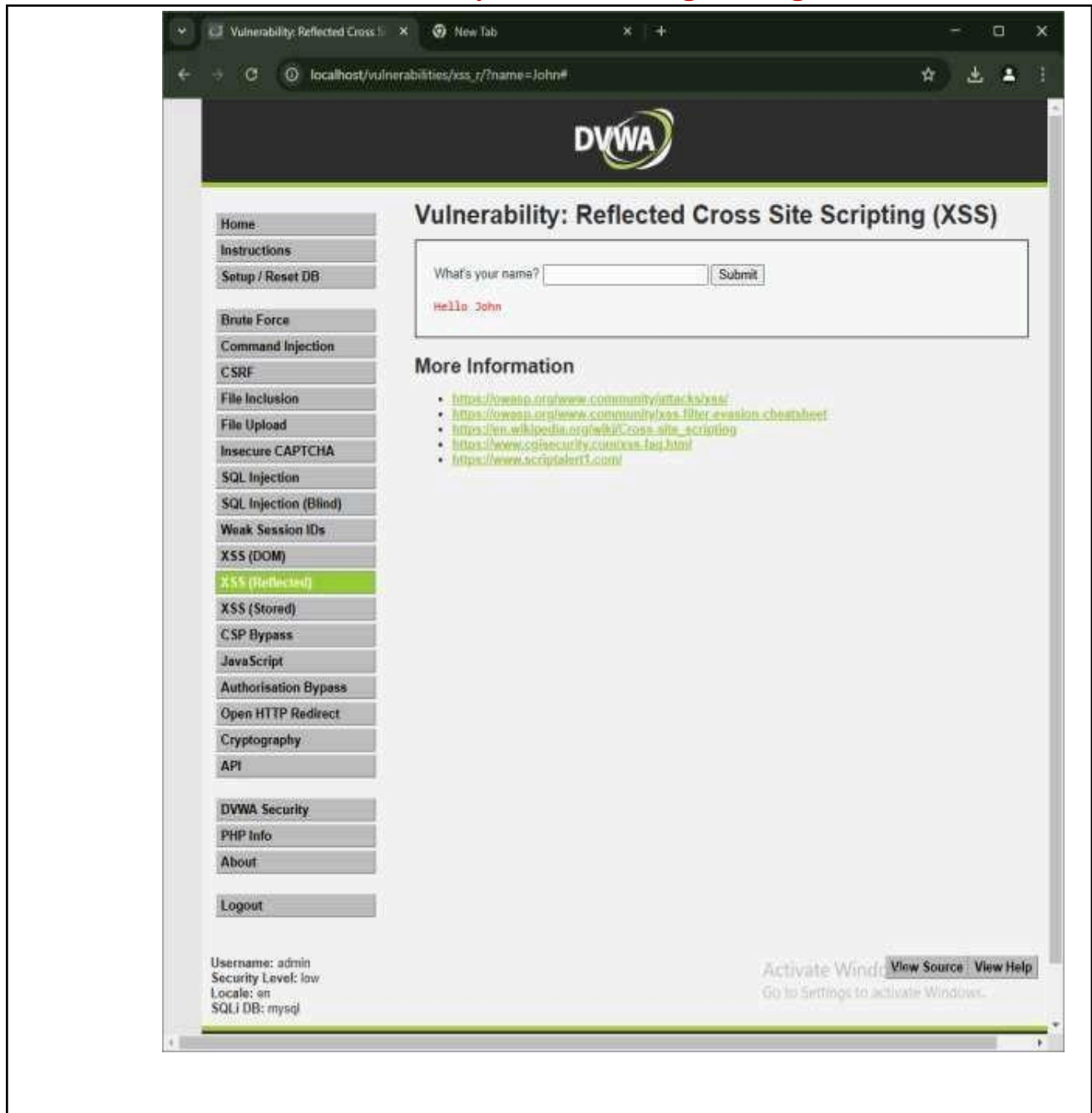
hello

More Information

- <https://www.exploit-db.com/exploits/1337/>
- <https://www.exploit-db.com/exploits/1337/>
- <https://www.exploit-db.com/exploits/1337/>
- <https://www.exploit-db.com/exploits/1337/>
- <https://www.exploit-db.com/exploits/1337/>

Username: admin
Security Level: low
Locale: en
SQL DB: mysql

Activate Windows [View Source](#) [View Help](#)
Go to Settings to activate Windows.



The screenshot shows a web browser window displaying the DVWA (Damn Vulnerable Web Application) interface. The browser's address bar shows the URL `localhost/vulnerabilities/xss_r/?name=John#`. The page title is "Vulnerability: Reflected Cross Site Scripting (XSS)". On the left, there is a sidebar menu with various vulnerability categories, including "XSS (Reflected)" which is currently selected. The main content area features a form with the label "What's your name?" and a "Submit" button. Below the form, the output "Hello John" is displayed in red text. Under the "More Information" section, there are several links to external resources related to XSS. At the bottom of the page, the user's session information is shown: "Username: admin", "Security Level: low", "Locale: en", and "SQL DB: mysql".

Vulnerability: Reflected Cross Site Scripting (XSS)

What's your name? Submit

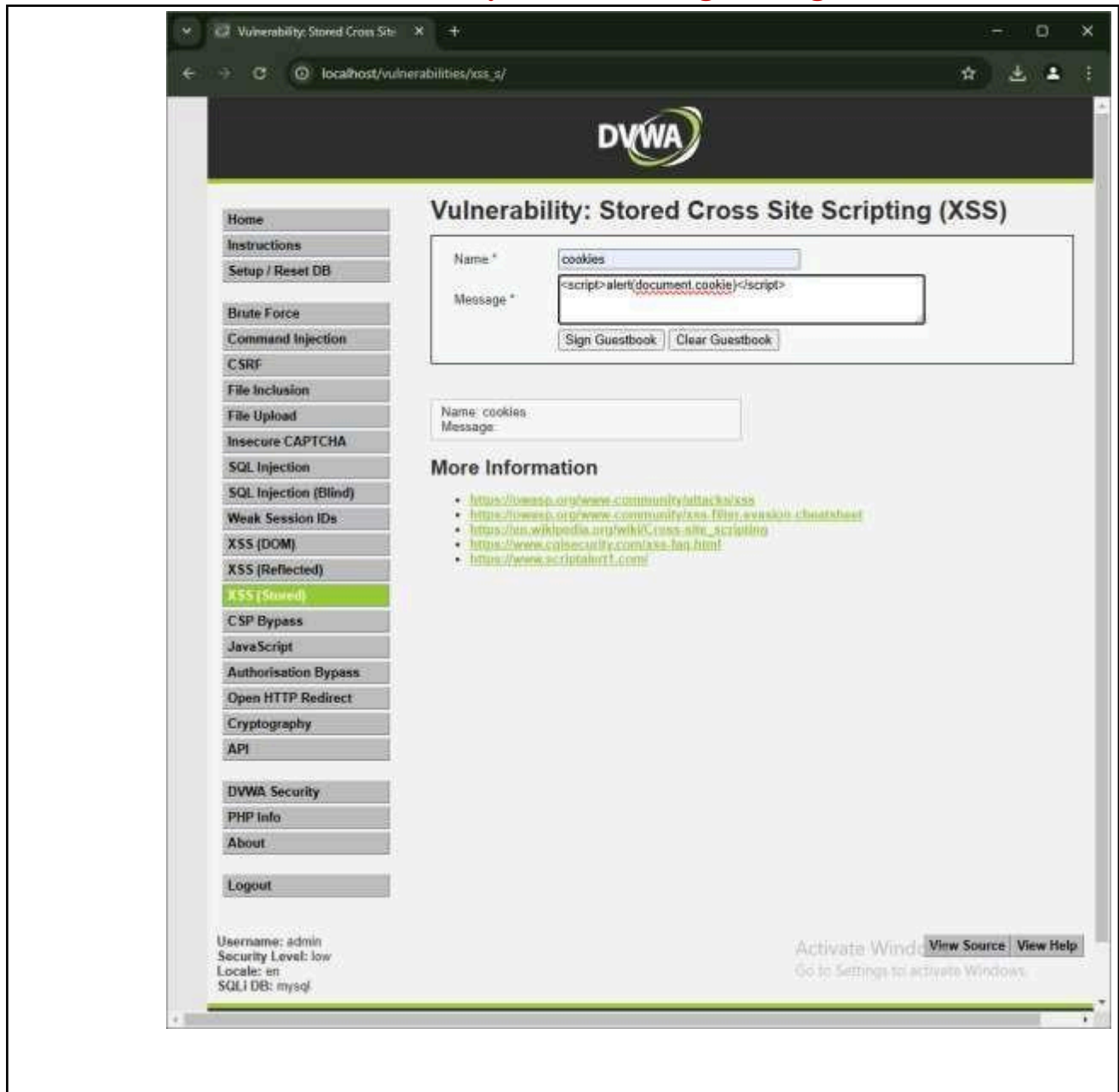
Hello John

More Information

- <https://www.exploit-db.com/exploits/13371/>
- <https://www.exploit-db.com/exploits/13371/>
- <https://www.exploit-db.com/exploits/13371/>
- <https://www.exploit-db.com/exploits/13371/>
- <https://www.exploit-db.com/exploits/13371/>

Username: admin
Security Level: low
Locale: en
SQL DB: mysql

Activate Windows. Go to Settings to activate Windows. View Source View Help



The screenshot shows the DVWA (Damn Vulnerable Web Application) interface in a web browser. The browser's address bar shows the URL `localhost/vulnerabilities/xss_s/`. The page title is "Vulnerability: Stored Cross Site Scripting (XSS)". On the left, there is a sidebar menu with various security topics, including "XSS (Stored)" which is currently selected. The main content area contains a form with two input fields: "Name *" and "Message *". The "Name *" field contains the text "cookies", and the "Message *" field contains the payload `<script>alert(document.cookie)</script>`. Below the form are two buttons: "Sign Guestbook" and "Clear Guestbook". Below the form, there is a section titled "More Information" with a list of links to external resources. At the bottom of the page, there is a footer with the text "Username: admin", "Security Level: low", "Locale: en", and "SQLi DB: mysql". There are also links for "View Source" and "View Help".

Vulnerability: Stored Cross Site Scripting (XSS)

Name * cookies

Message * `<script>alert(document.cookie)</script>`

Sign Guestbook Clear Guestbook

Name: cookies
Message:

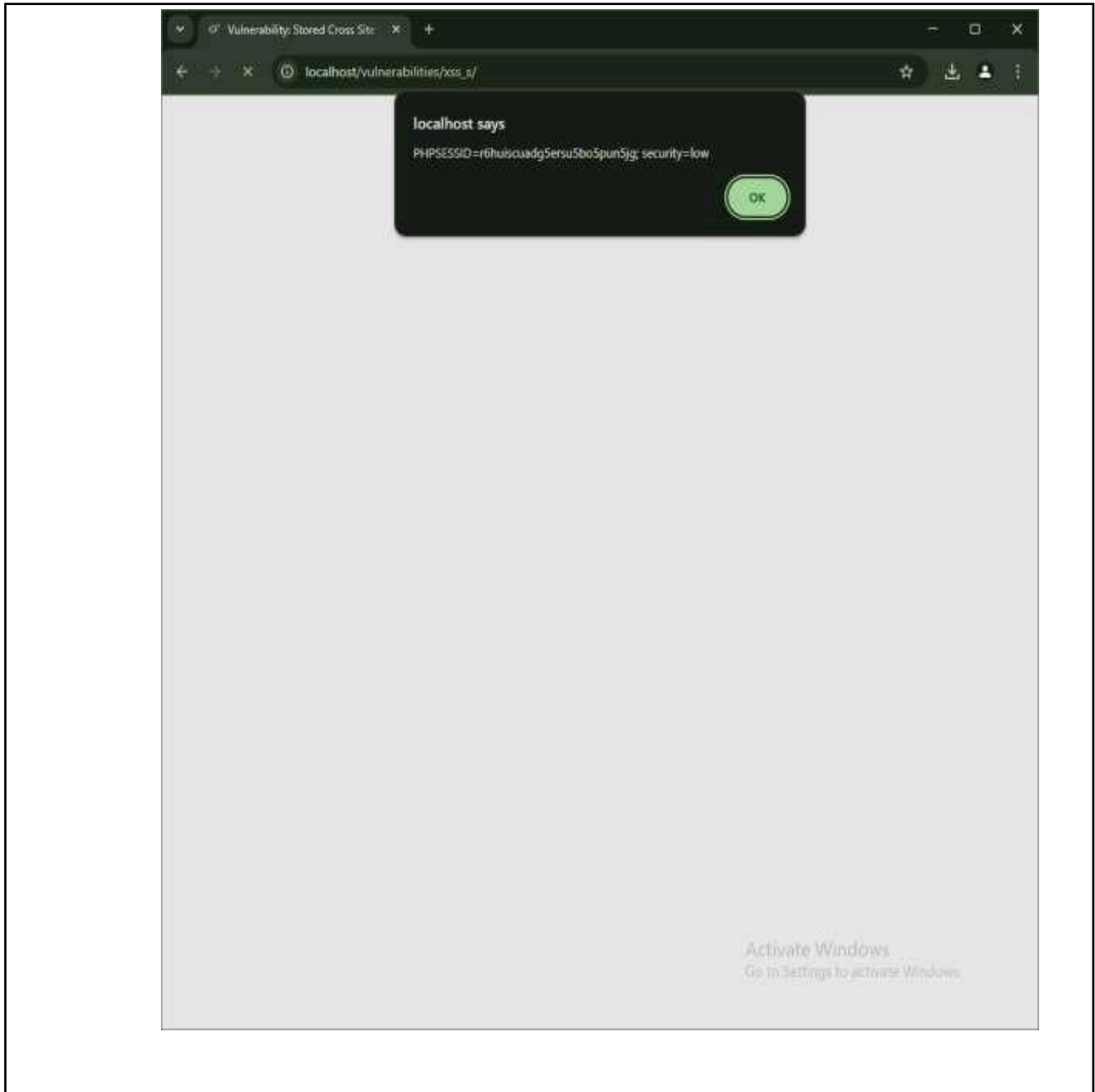
More Information


- <https://www.exploit-db.com/exploits/13371/>
- <https://www.exploit-db.com/exploits/13371/>
- https://en.wikipedia.org/wiki/Cross-site_scripting
- <https://www.cisecurity.com/xss-faq.html>
- <https://www.scriptaholic.com/>

Username: admin
Security Level: low
Locale: en
SQLi DB: mysql

Activate Windows
Go to Settings to activate Windows.

View Source View Help





Vulnerability: Stored Cross Site Scripting (XSS)

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)
XSS (Stored)
CSP Bypass
JavaScript
Authorisation Bypass
Open HTTP Redirect
Cryptography
API
DVWA Security
PHP Info
About
Logout

Username: admin
Security Level: low
Locale: en
SQLi DB: mysql

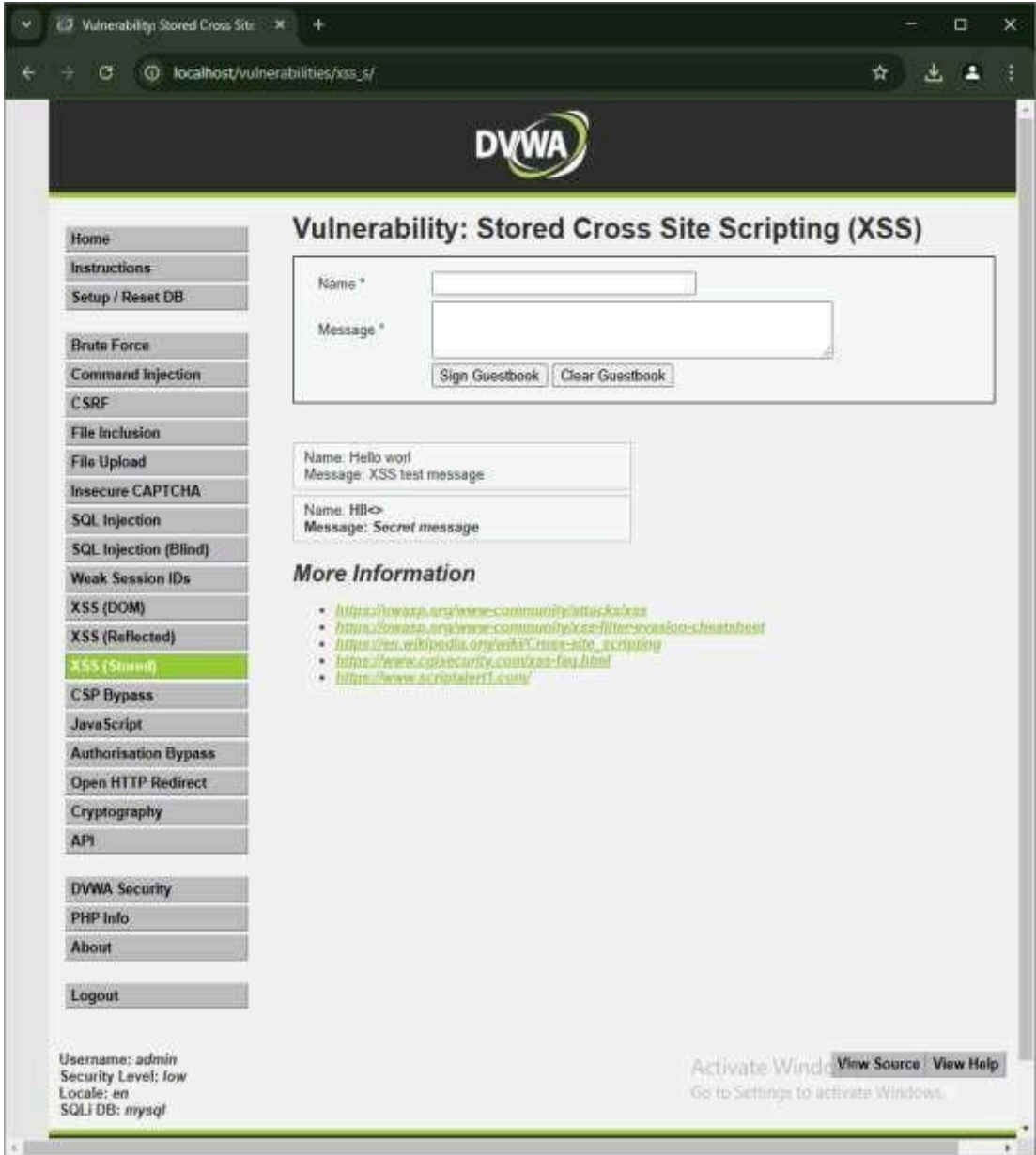
Name: message3
Message: <script>alert("JavaScript")</script>
Sign Guestbook Clear Guestbook

Name: Hello world
Message: XSS test message
Name: Hi!<>
Message: Secret message

More Information

- <https://www.exploit-db.com/exploits/1335/>
- <https://www.exploit-db.com/exploits/1335/>
- <https://www.exploit-db.com/exploits/1335/>
- <https://www.exploit-db.com/exploits/1335/>
- <https://www.exploit-db.com/exploits/1335/>

Activate Windows Go to Settings to activate Windows. View Source View Help



The screenshot displays the DVWA web application interface. The browser address bar shows `localhost/vulnerabilities/xss_s/`. The page title is "Vulnerability: Stored Cross Site Scripting (XSS)".

Left Sidebar (Navigation Menu):

- 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)
- XSS (Stored)** (highlighted)
- CSP Bypass
- JavaScript
- Authorisation Bypass
- Open HTTP Redirect
- Cryptography
- API
- DVWA Security
- PHP Info
- About
- Logout

Main Content Area:

Vulnerability: Stored Cross Site Scripting (XSS)

Form fields:

- Name *
- Message *

Buttons:

Example entries:

- Name: Hello world
Message: XSS test message
- Name: Hll<>
Message: Secret message

More Information

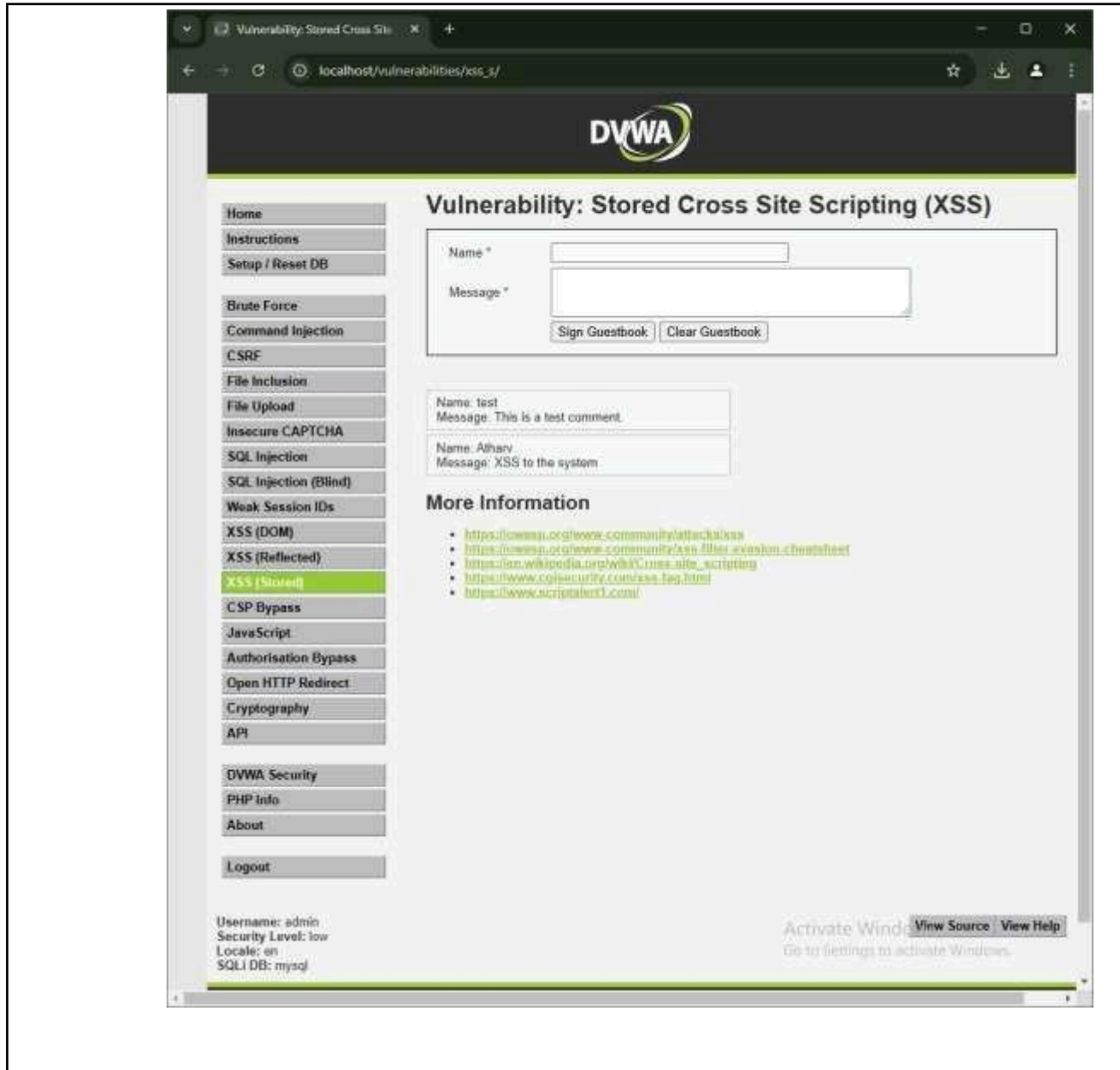
- <https://www.exploit-db.com/exploits/13371/>
- <https://www.exploit-db.com/exploits/13372/>
- <https://www.exploit-db.com/exploits/13373/>
- <https://www.exploit-db.com/exploits/13374/>
- <https://www.exploit-db.com/exploits/13375/>

Footer:

Username: admin
Security Level: low
Locale: en
SQL DB: mysql

Activate Windows. Go to Settings to activate Windows.

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The screenshot displays the DVWA web application interface in a browser window. The address bar shows the URL `localhost/vulnerabilities/xss_s/`. The page title is "Vulnerability: Stored Cross Site Scripting (XSS)".

Left Sidebar (Navigation Menu):

- Home
- Instructions
- Setup / Reset DB
- Brute Force
- Command Injection
- C.SRF
- File Inclusion
- File Upload
- Insecure CAPTCHA
- SQL Injection
- SQL Injection (Blind)
- Weak Session IDs
- XSS (DOM)
- XSS (Stored)** (highlighted)
- CSP Bypass
- JavaScript
- Authorisation Bypass
- Open HTTP Redirect
- Cryptography
- API
- DVWA Security
- PHP Info
- About
- Logout

Main Content Area:

Vulnerability: Stored Cross Site Scripting (XSS)

Form fields for input:

- Name * (text input)
- Message * (text area)
- Buttons: Sign Guestbook, Clear Guestbook

Example entries:

- Name: test
Message: This is a test comment.
- Name: Alharv
Message: XSS to the system.


More Information

- <https://owasp.org/owasp-community/attacks/xss/>
- <https://www.exploit-db.com/exploits/10000/xss-filter-evasion-cheatsheet/>
- https://en.wikipedia.org/wiki/Cross-site_scripting
- <https://www.cgisecurity.com/csa-faq.html>
- <https://www.scriptalert.com/>

Footer:

Username: admin
Security Level: low
Locale: en
SQL DB: mysql

Activate Windows. Go to Settings to activate Windows. [View Source](#) [View Help](#)



The screenshot displays the DVWA web application interface. The browser address bar shows `localhost/vulnerabilities/xss_s/`. The page title is "Vulnerability: Stored Cross Site Scripting (XSS)".

Left Sidebar:

- Home
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- Setup / Reset DB
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- Authorisation Bypass
- Open HTTP Redirect
- Cryptography
- API
- DVWA Security
- PHP Info
- About
- Logout

Main Form:

Name *

Message *

Guestbook Entry:

Name: test
Message: This is a test comment.

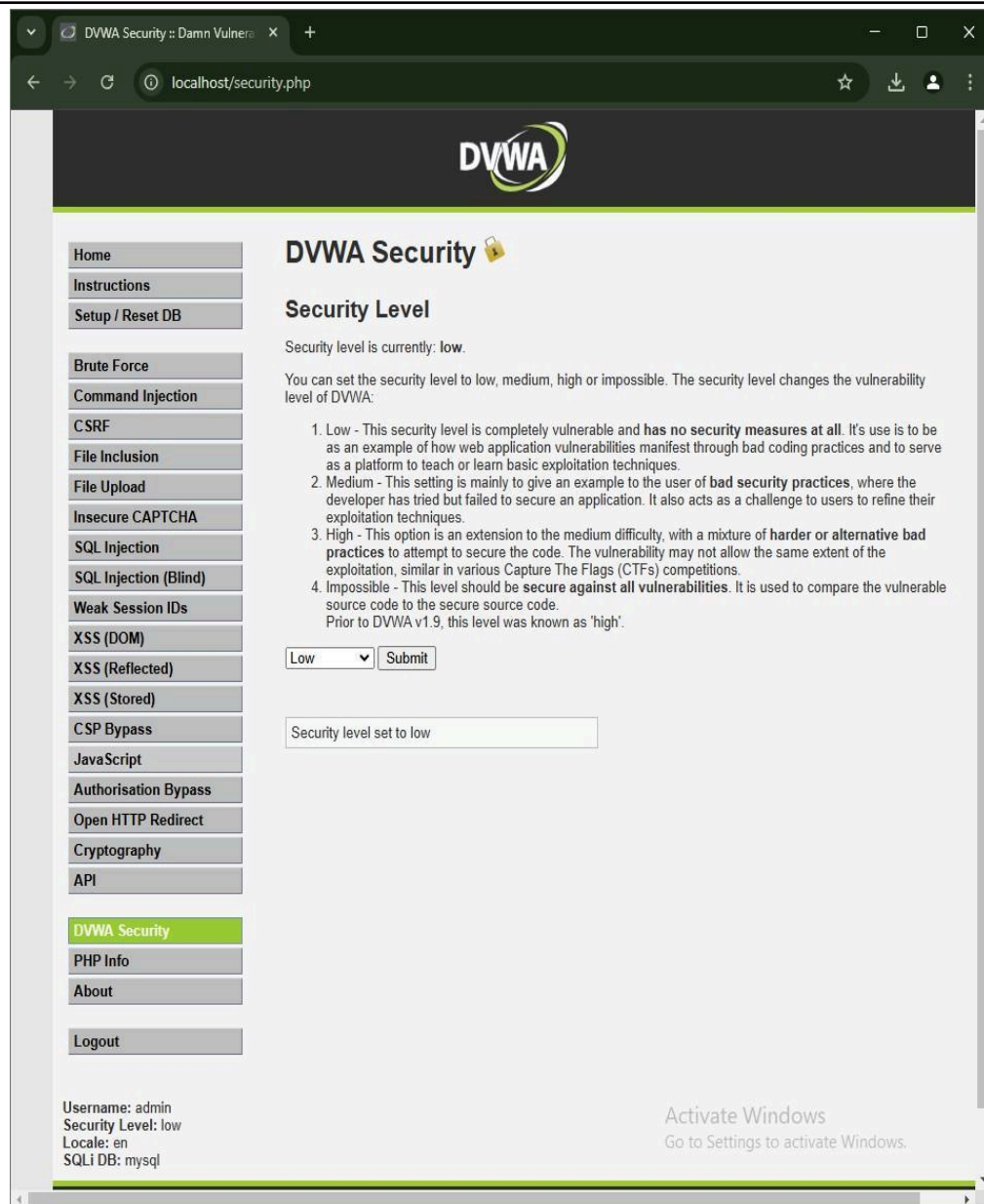
More Information

- <https://owasp.org/www-community/attacks/xss/>
- <https://owasp.org/www-community/xss-filter-evasion-cheatsheet>
- https://en.wikipedia.org/wiki/Cross-site_scripting
- <https://www.pinecurity.com/xss-faq.html>
- <https://www.scriptalert1.com/>

Footer:

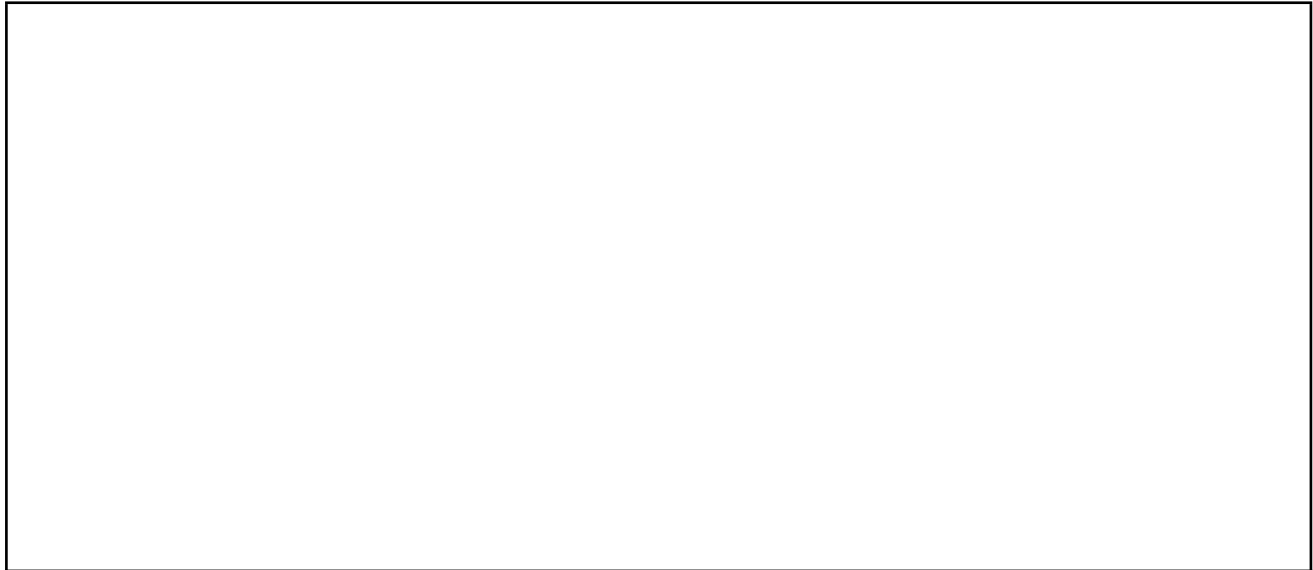
Username: admin
Security Level: low
Locale: en
SQLi DB: mysql

Activate Windows. [View Source](#) [View Help](#)
Go to Settings to activate Windows.



The screenshot shows a web browser window with the address bar displaying 'localhost/security.php'. The page title is 'DVWA Security'. On the left, there is a sidebar menu with various security challenges listed, including 'Brute Force', 'Command Injection', 'CSRF', 'File Inclusion', 'File Upload', 'Insecure CAPTCHA', 'SQL Injection', 'SQL Injection (Blind)', 'Weak Session IDs', 'XSS (DOM)', 'XSS (Reflected)', 'XSS (Stored)', 'CSP Bypass', 'JavaScript', 'Authorisation Bypass', 'Open HTTP Redirect', 'Cryptography', 'API', 'DVWA Security' (highlighted), 'PHP Info', 'About', and 'Logout'. The main content area is titled 'DVWA Security' and 'Security Level'. It states 'Security level is currently: low.' and provides a list of four security levels: 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'. Below the list, there is a dropdown menu set to 'Low' and a 'Submit' button. A feedback message says 'Security level set to low'. At the bottom, it shows 'Username: admin', 'Security Level: low', 'Locale: en', and 'SQLi DB: mysql'. An 'Activate Windows' watermark is visible in the bottom right corner.

Results/Output:



Conclusion:

By implementing XSS attacks using DVWA and Burp Suite, students gain hands-on experience in identifying and analyzing web vulnerabilities. This practical understanding enhances their ability to mitigate security risks effectively.