TASK 1 -: You can visit Portswigger labs and Choose any 5 lab of them and solve it.

1- Vulnerabilities -:

- 1- Stored XSS into HTML context with nothing encoded.
- 2- Reflected XSS into HTML context with nothing encoded.
- 3- DOM XSS in document.
- 4 DOM XSS in inner HTML.
- 5- DOM XSS in jQuery anchor
- **2- Description -:** Cross site scripting is a type of computer security vulnerability, the attacker aims to execute malicious script in a web browser of the victim by including malicious code a legitimate web page of web application.

DOM XSS -: DOM-based XSS vulnerabilities usually arise when JavaScript takes data from an attacker-controllable source, such as the URL, and passes it to a sink that supports dynamic code execution, such **as eval() or innerHTML. This enables attackers to execute** malicious JavaScript, which typically allows them to hijack other users' accounts.

3- **Severity** -: Average

4-Instance -:

Vuln 1 - Submit a comment that calls the alert function when the blog post - URI - https://oa7e00f003d1396080c494d600cd0081.web-security-academy.net/post/comment/confirmation?postId=9.

Vuln 2 - I am perform a cross-site scripting attack that calls the alert function in search box.

Vuln 3 – First I'm entering alphanumeric words into search box

Then I will Right-click and inspect the element, and observe that your random string has been placed inside an img src attribute.

Vuln 4 - When I Enter the Into the search box:

Vuln 5 - I am perform the query parameter return Path to the feedback

And I am pass the query "acds1234"

Right-click and inspect the element, and observe that your random string has been placed inside a href attribute.

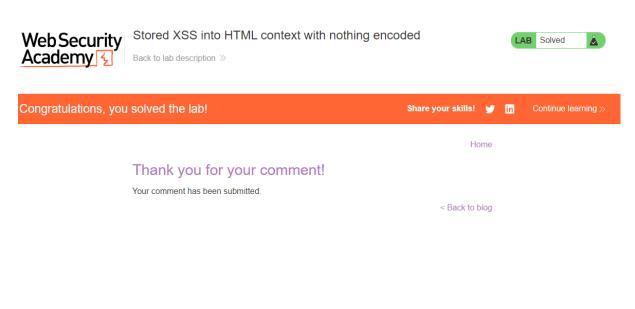
Then I Change return Path to "javascript:alert(document.cookie)"

3-POC (Proof of concept) -:

- 1 Stored XSS into HTML context with nothing encoded.
 - 1 First I trying to put alert function in comment box in the blog post

Comment:	
<script>alert (1) </script>	
Name:	A.
don	
Email:	
don@gmail.com	
Website:	
http://don.com	
Post Comment Post Comment	D. 14 D.
	< Back to Blog

Then finally I'm success in Alert function as you can see

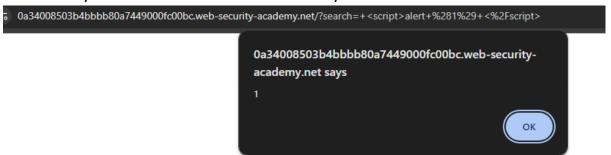


Vulnerability 2 - Reflected XSS into HTML context with nothing encoded.

- First I trying to put alert function in search box.



Then finally I'm success in Alert function as you can see



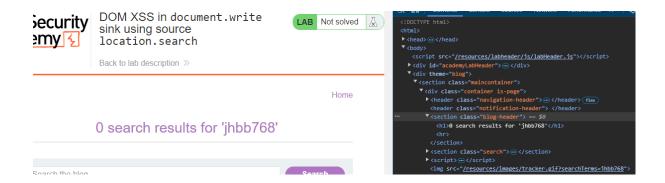


Vulnerability 3 - DOM XSS in document

Step – I am trying to submit random alphanumeric word in search box. When I right click inspect the element Then I am observing that my string has been placed inside an img src.



As you can see

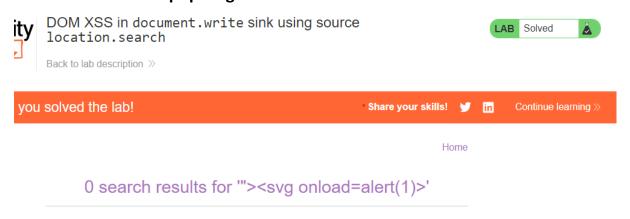


After I am putting our "><svg onload=alert(1)> command in search box



0 search results for "><svg onload=alert(1)>'

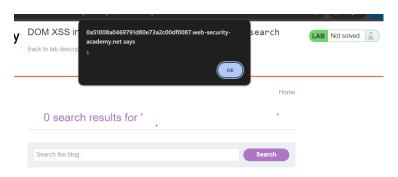
Then I m received a pop msg its indicate our alert function run successful



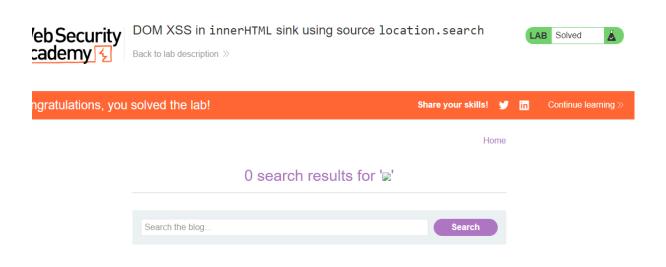
Vulnerability 4 - DOM XSS in inner HTML.

When I Enter the Into the search box:

I am received a pop up

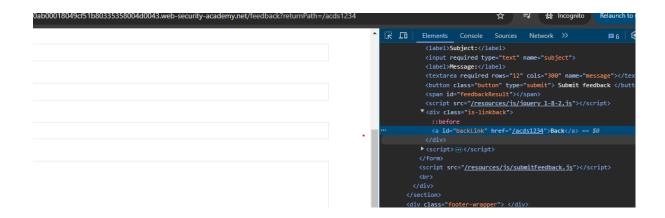


And finally I am succeed as you can see



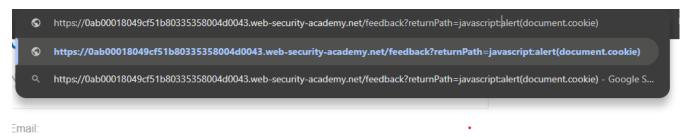
Vulnerability 5 - DOM XSS in jQuery anchor

I am perform the query parameter returnPath to the feedback
And I m pass the query "acds1234"

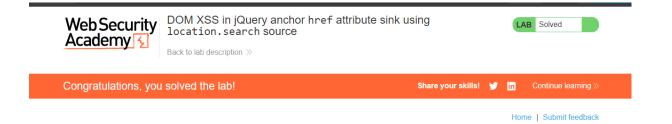


Right-click and inspect the element, and observe that your random string has been placed inside an a href attribute.

Then I Change return Path to "javascript:alert(document.cookie)"



Finally I am succeed. As you can see



6- Impact -:

- Open Redirection
- Session Hijack
- Phishing
- Defacement
- Cookie Stealing.

Task 2 – Find three high vulnerability in http://zero.webappsecurity.com

1-: Vulnerability -

- SSL Version 2 and 3 Protocol Detection CVSS v3.0 Base Score: 9.8
- SSL Medium Strength Cipher Suites Supported (SWEET32) CVSS v3.0 Base Score: 7.5
- HSTS Missing from HTTPS server CVSS v3.0 Base Score: 6.5.
- TLS Version 1.0 protocol Detection CVSS v3.0 Base Score: 6.5.
- **JQuery 1.2 < 3.5.0 Multiple XSS** CVSS v3.0 Base Score: 6.1.

Vuln1 -: SSL Version 2 and 3 Protocol Detection - CVSS v3.0 Base Score: 9.8

Severity -: Critical.

Description -: The remote service accepts connections encrypted using SSL 2.0 and/or SSL 3.0. These versions of SSL are affected by several cryptographic flaws, including.

Impact - An insecure padding scheme with CBC ciphers. Insecure session renegotiation and resumption schemes. An attacker can exploit these flaws to conduct man-in-the-middle attacks or to decrypt communications between the affected service and clients.

Mitigation -: Consult the application's documentation to disable SSL 2.0 and 3.0. Use TLS 1.2 (with approved cipher suites) or higher instead

Vuln2 -: SSL Medium Strength Cipher Suites Supported (SWEET32) - CVSS v3.0 Base Score: 7.5

Severity -: Medium

Description -: The remote host support the use ciphers that offer medium strength encryption.

Impact - That it is the affected application easier to circumvent medium strength encryption if the attacker is on the same physical network.

Mitigation -: Reconfigure the affected application if possible to avoid use of medium strength cipher.

Vuln3 -: HSTS Missing from HTTPS server – CVSS v3.0 Base Score: 6.5.

Severity -: Medium

Description -: The remote web server is not enforcing HSTS, as defined by RFC 6797.

HSTS is an optional response header that can be configure on the server to instruction the browser to only communicate via HTTPS. The lack of HSTS allows downloading attacks, SSL-stripping man-in-the-middle-attack, and weakens cookies-hijacking protecting

Impact - SSL-stripping man-in-the-middle-attack, and weakens cookies-hijacking protecting

Mitigation -: Configure the remote web server to use HSTS

Vuln4 -: TLS Version 1.0 protocol Detection - CVSS v3.0 Base Score: 6.5.

Severity -: Medium

Description -: The remote service accept connections encrypted using TLS 1.0.

TLS 1.0 has a number of cryptographic design flaws. Modern emplacements of TLS 1.0 mitigate these problems. But newer version of TLS like 1.2 and 1.3 are designed against these flaws and should be used whenever possible

Impact - PCI DSS v3.2 required that TLS 1.0 be disabled entirely by june 30, 2018.Except for POI terminal that can be verified as not being susceptible any known exploits.

Mitigation -: Upgrading to a current, secure version of TLS that is implemented securely and configured to not accept fall back to SSL or early TLS.

Encrypting data with strong cryptography before sending over SSL/early TLS.

Setting up a strongly-encrypted session first (e.g. IPsec tunnel), then sending data over SSL within secure tunnel

Vuln5 -: JQuery 1.2 < 3.5.0 Multiple XSS - CVSS v3.0 Base Score: 6.1.

Severity -: Medium

Description -: According to the self-reported version in the script, The version on JQuery hosted web server is greater than or equal to 1.2 and prior to 3.5.0.

Impact - It is therefore, effected by multiple cross side scripting vulnerabilities.

Mitigation -: Upgrade to JQuery version 3.5.0 or latest.

Step to reproduce -:

• First I'm used **Nikto** tool for finding Vulnerability in my target website.

Nikto -h http://zero.webappsecurity.com

 Then I trying to find hidden folder in target with the help of gobuster penetration testing tool.

Gobuster –timeout 30s dir –u http://zero.webappsecurity.com –w /usr/share/wrodlists/dirb/big.txt –x txt,zip,php,html.

And amazingly I'm finding some important hidden file - /cgi.zip , /debug.txt , /feedback.html, /index.html , / login.html . we can use for gain unauthorised access.

- Then I'm used nmap for gain some other information of the target website.
 Where I find some port, services, and week point's in system. Like port (
 80, 443 & 8080). Where I seeing Tomcat Jsp engine running on port 80.
 Then I'm checking on exploit db we got the CVV and other details related this vulnerability.
- Then finally I'm using Nessus tools for finding some other's vulnerability I target system. And I got some valuable and week point in target system. And I'm finding some other vulnerability with the help of Nessus tool.

POC -:

Nikto -

```
File Actions Edit View Help

nikto × nmap × kali@kali:-/mahtab/tools/nessus ×

(kali@kali)-{\text{c}}

5 nikto + http://zero.webappsecurity.com

Nikto v2.5.0

**Multiple IPs found: 54.82.22.214, 64:ff9b::3652:16d6

**Target IP: 54.82.22.214

**Target IP: 54.82.22.214

**Target Port: 80

**Start Time: 2024-09-03 11:36:24 (GMT-4)

**Server: Apache-Coyote/1.1

**/: Retrieved access-control-allow-origin header: *.

**/: The arti-click/pakeing X-Frame-Options header is not present. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/X-Frame-Options

**/: The Arti-click/pakeing X-Frame-Options header is not set. This could allow the user agent to render the content of the site in a different fashion to the MIME type. See: https://www.netsparker.com/web-vulnerabilities/missing-content-type-header/

**: Server banner changed from 'Apache-Coyote/1.1' to 'Apache/2.2.6 (Win32) mod ssl/2.2.6 OpenSSL/0.9.8e mod_jk/1.2.40'.

**OPTIONS: Allowed HTP Methods: GFT, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, PATCH.

**HTTP method ('Allow' Header): 'PUT' method could allow clients to save files on the web server.

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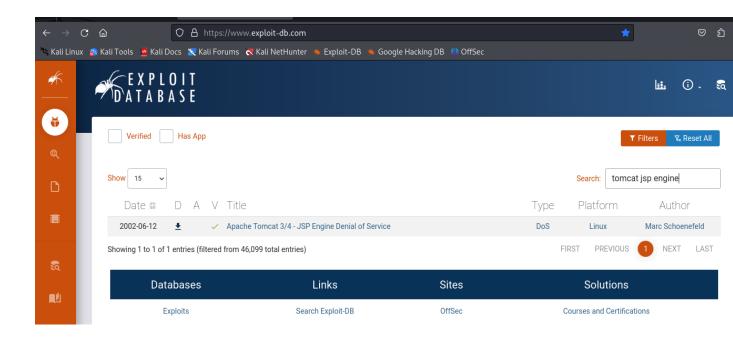
**HTTP method ('Allow' Header): 'P
```

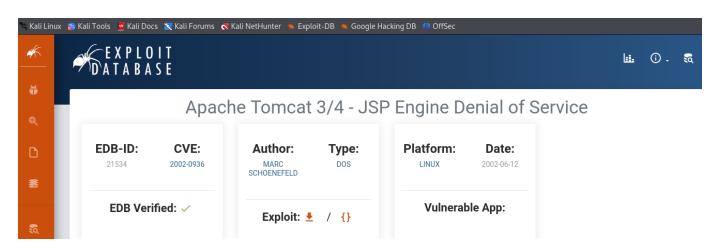
Gobuster -:

```
File Actions Edit View Help
nikto × nmap × nessus × gobuster ×
                                                 kali@kali: /usr/share/wordlists ×
 —(kali⊛kali)-[~/Downloads]
🛂 gobuster --timeout 30s dir -u http://zero.webappsecurity.com -w /usr/share/wordlists/dirb/big.txt -x txt,php,zip,html
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@firefart)
[+] Url:
                               http://zero.webappsecurity.com
[+] Method:
[+] Threads:
[+] Wordlist:
                               /usr/share/wordlists/dirb/big.txt
[+] Negative Status codes: 404
[+] User Agent:
[+] Extensions:
[+] Timeout:
                              gobuster/3.6
                               txt,php,zip,html
Starting gobuster in directory enumeration mode
                                       [Size: 323]
/106.txt
/106.html
                                      [Size: 323]
                                       [Size: 323]
```

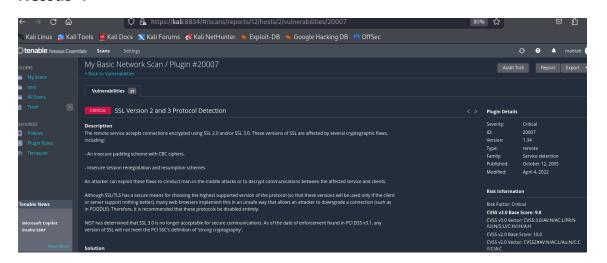
Nmap -:

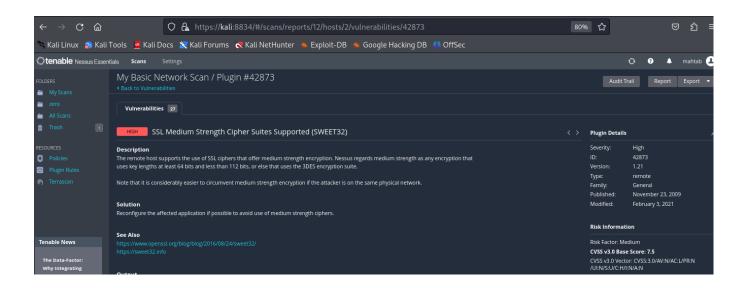
Exploit dB -:

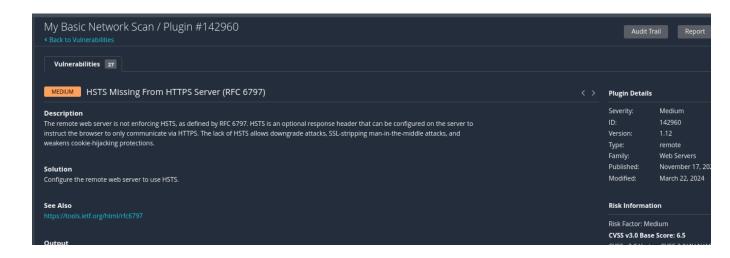


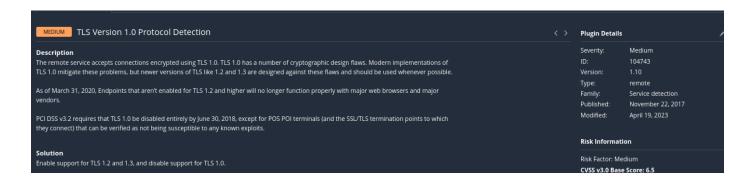


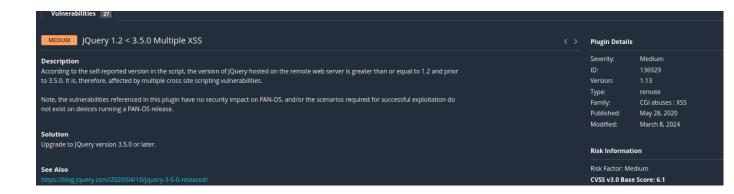
Nessus -:











Task 3 – Find one high vulnerability in http://testasp.vulnweb.com

Vulnerability -:

- Dnsmasq Heap Overflow and Null-pointer Dereference on TFTP Server CVE-2009-2957.
- Cross side scripting.

Vuln -1

Severity -: Medium CVV score

Description -: Dnsmasq is a lightweight DNS forwarder and DHCP server. A vulnerabilityhas been found that may allow an attacker to execute arbitrary code on

Servers or home routers running dnsmasq[1] with the TFTP service[2][3] enabled.

Impact -Chances of successful exploitation increase when a long directory prefix is used for TFTP.

References*

```
[1] http://www.thekelleys.org.uk/dnsmasq/doc.html
[2] http://www.isi.edu/in-notes/ien/ien133.txt
[3]http://en.wikipedia.org/wiki/Trivial File Transfer Protocol
```

Mitigation -: If the TFTP service is enabled and patching is not available Immediately, a valid workaround is to filter TFTP for untrusted hosts in the network (such as the Internet). This is the default configuration

when enabling TFTP on most home routers.

Steps To Reproduce:

- I'm using **nslookup** for finding IP address or other details.
- Then using **Nikto** tool for finding vulnerability.
- Then I'm used NMAP for gathering important information.
 Where is finding open port's 53 where i got dnsmasq 2.51.
 This is valuable vulnerability for hacker where hacker used for gain unauthorized access or other's things.
- Then I'm search on this vulnerability's dnsmasq 2.51 on **Exploitdb**. Where I'm saw dnsmasq exploit.

POC -:

Nslookup -

```
(kali@kali)-[~/mahtab/project1/task2]

$ nslookup http://testasp.vulnweb.com

Server: 192.168.9.52

Address: 192.168.9.52#53

Non-authoritative answer:
Name: http://testasp.vulnweb.com

Address: 44.228.249.3

Name: http://testasp.vulnweb.com

Address: 64:ff9b::2ce4:f903
```

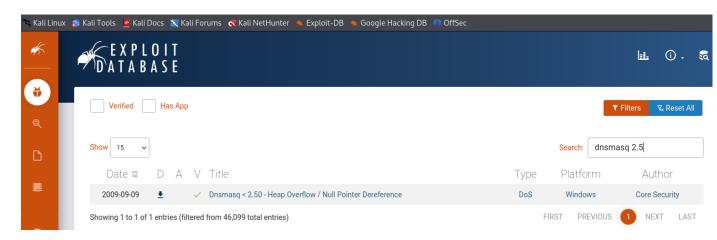
Nikto -:

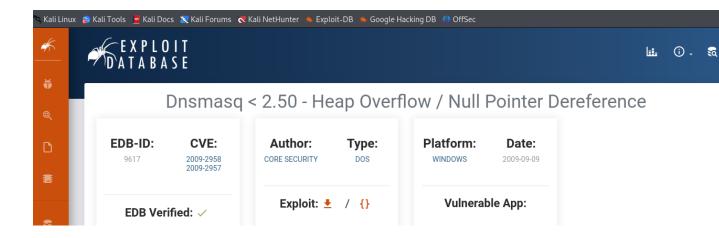
```
[~/mantab/project1/task2]
    nikto -h http://testasp.vulnweb.com
 Multiple IPs found: 44.238.29.244, 64:ff9b::2cee:1df4
  Target IP:
                         44.238.29.244
  Target Hostname:
                         testasp.vulnweb.com
  Target Port:
 Start Time:
                         2024-09-05 12:15:59 (GMT-4)
 Server: Microsoft-IIS/8.5
 /: Retrieved x-powered-by header: ASP.NET.
 /: The anti-clickjacking X-Frame-Options header is not present. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/X-Frame-Options
/: The X-Content-Type-Options header is not set. This could allow the user agent to render the content of the site in a different fashion to the MIME type. See: http
s://www.netsparker.com/web-vulnerability-scanner/vulnerabilities/missing-content-type-header/
 /: Cookie ASPSESSIONIDQCSCQTRD created without the httponly flag. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Cookies
 · /KRWesSvg.aspx: Retrieved x-aspnet-version header: 2.0.50727.
- RFC-1918 /aspnet_client: IP address found in the 'location' header. The IP is "10.0.0.14". See: https://portswigger.net/kb/issues/00600300_private-ip-addresses-discl
osed
 Aaspnet_client: The web server may reveal its internal or real IP in the Location header via a request to with HTTP/1.0. The value is "10.0.0.14". See: http://cve.mi
tre.org/cgi-bin/cvename.cgi?name=CVE-2000-0649
 OPTIONS: Allowed HTTP Methods: OPTIONS, TRACE, GET, HEAD, POST .
 OPTIONS: Public HTTP Methods: OPTIONS, TRACE, GET, HEAD, POST .
```

Nmap -:

```
-(<mark>kali®kali</mark>)-[~/mahtab/project1/task2]
$ sudo nmap 192.168.9.52 -A -T4
[sudo] password for kali:
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-09-05 12:35 EDT
Nmap scan report for 192.168.9.52
Host is up (0.0022s latency).
Not shown: 999 filtered tcp ports (no-response)
PORT STATE SERVICE VERSION
53/tcp open domain dnsmasq 2.51
| dns-nsid:
_ bind.version: dnsmasq-2.51
Warning: OSScan results may be unreliable because we could not find at least 1 open and 1 closed port
Device type: bridge|general purpose
Running (JUST GUESSING): Oracle Virtualbox (95%), QEMU (91%)
OS CPE: cpe:/o:oracle:virtualbox cpe:/a:qemu:qemu
Aggressive OS guesses: Oracle Virtualbox (95%), QEMU user mode network gateway (91%)
No exact OS matches for host (test conditions non-ideal).
Network Distance: 2 hops
```

Exploit-DB-:





Vuln-2 -

Severity -: High

Description -: There is a cross-site scripting vulnerability on the login page of http://testasp.vulnweb.com and various regions, due to improper escaping on the URL path.

Impact - This is a high impact vulnerability as this affects the login page.

References-

- https://www.starbucks.com/account/signin
- https://www.starbucks.co.uk/account/signin

Mitigation -: An attacker can easily abuse this bug to steal user passwords, inject malicious JavaScript into the context of www.http://testasp.vulnweb.com.
Implement HTML encoding / escaping on the path.

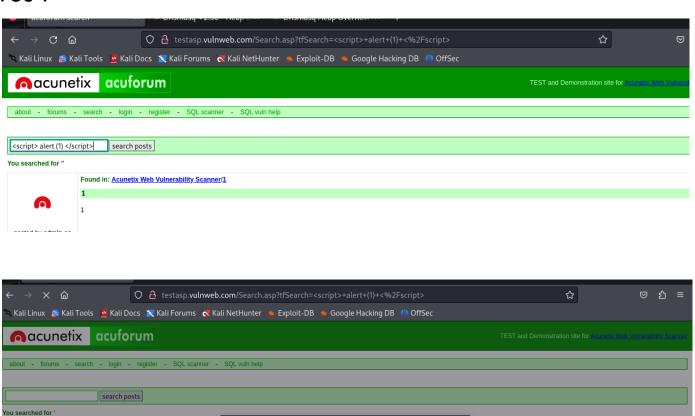
Steps To Reproduce:

Step -1 Open Chrome or Firefox.

Step -2 visit www.http://testasp.vulnweb.com.

Step -3 The XSS will trigger and you'll get an alert() with the value of document.domain.

POC -:



ОК

⊕ testasp.vulnweb.com