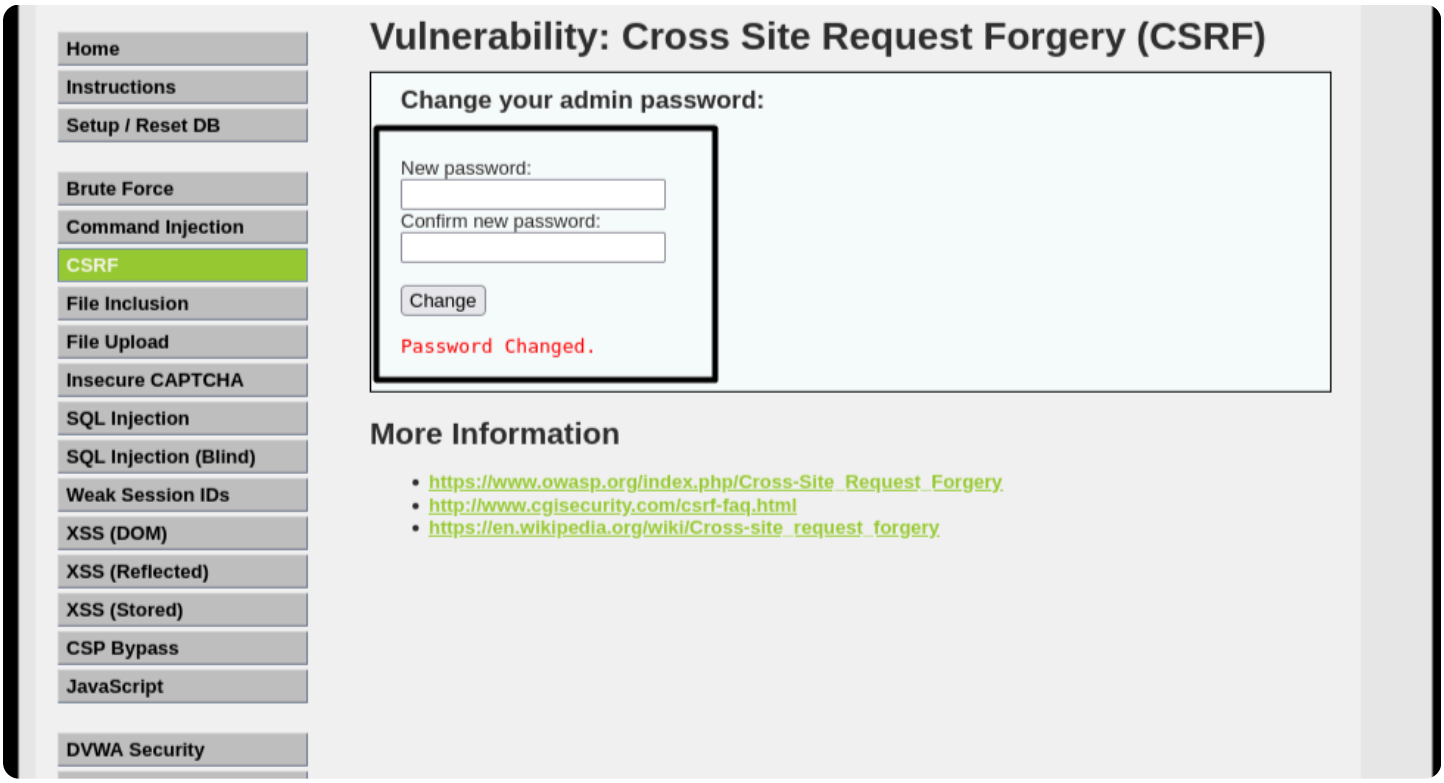

DVWA CSRF REPORT AND ARTICLE

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Cybersecurity Enthusiast | CTF Player | Security...
Published Mar 2, 2025

Following

Vulnerability Name: Cross Site Request Forgery

Affected Vendor: DVWA

Affected Product Name: http://dvwa/vulnerabilities/csrf/

Product Official Website URL: http://dvwa/login.php

Affected Components:

Affected Parameters: - change your admin password

Description: - A vulnerability that allows attackers to trick authenticated users into executing unintended actions on web applications. A CSRF attack occurs when a malicious web site, email,

Root Cause: -Lack of CSRF tokens or inadequate validation of requests.

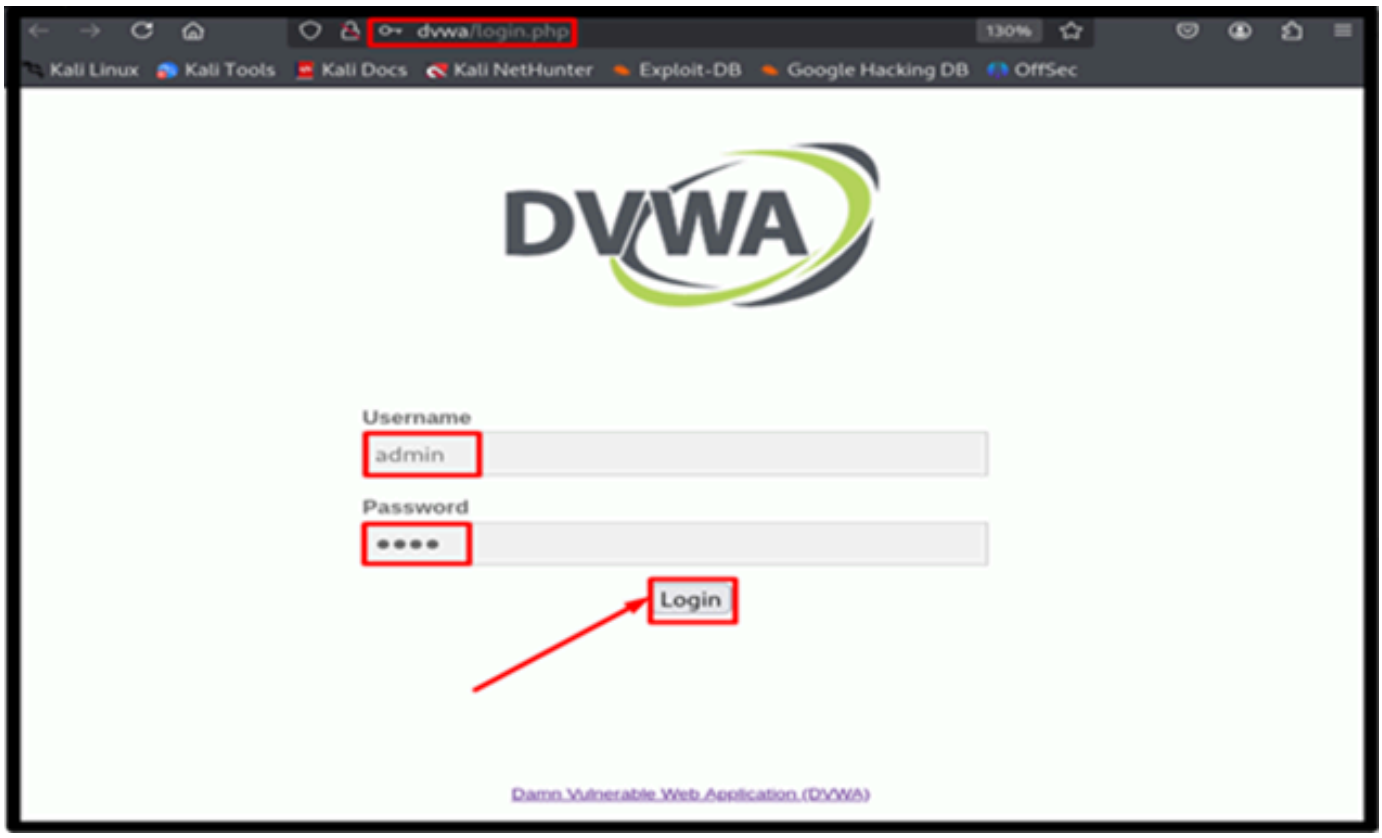
Impact: - Unauthorized actions performed by authenticated users without their consent, such as fund transfers or account deletions.

Mitigation: - Implement CSRF tokens, validate and compare request tokens, use anti-CSRF tokens in forms, and employ same-site cookie attributes to mitigate to CSFR.

Remediation: - To remediate a Cross-site Request Forgery Use anti-CSRF tokens in forms and API requests. or set the Same Site attribute to Strict or Lax in cookies. or require re-authentication or multi-factor authentication for sensitive actions. or verify Rerefer and Origin headers to ensure trusted sources. and Prefer POST, PUT, or DELETE over GET for state-changing operations. and require custom headers (e.g., X-Requested-With) in AJAX requests. or implement strict CORS policies to block unauthorized cross-origin requests. or use a separate CSRF token for logout functionality. or set Http Only and Secure flags to prevent unauthorized cookie access. and continuously test and validate CSRF protections in applications.

Proof of Concept

Step:-1 First navigate to http://dvwa/login.php and login with username and Password.

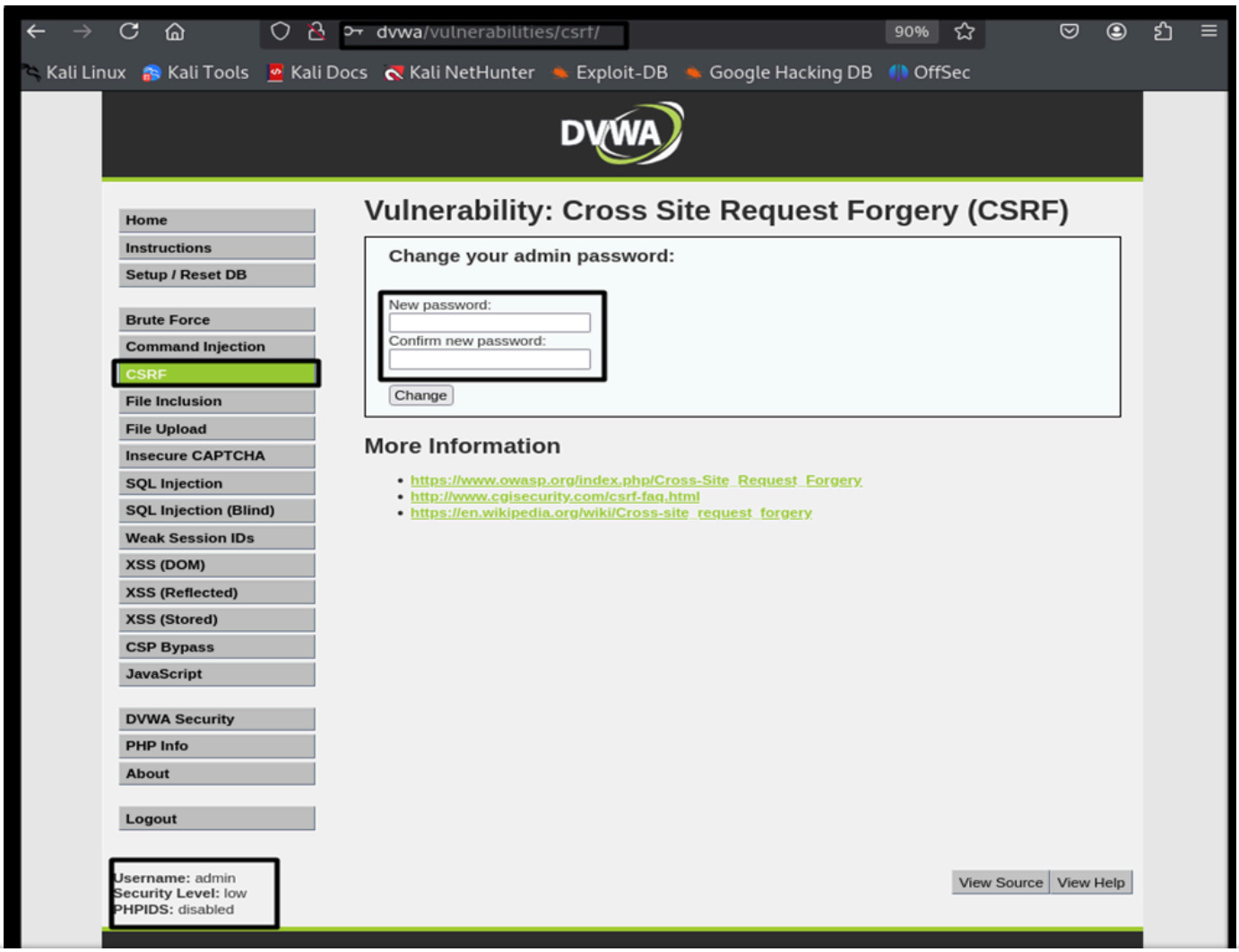


Security Level :- Low

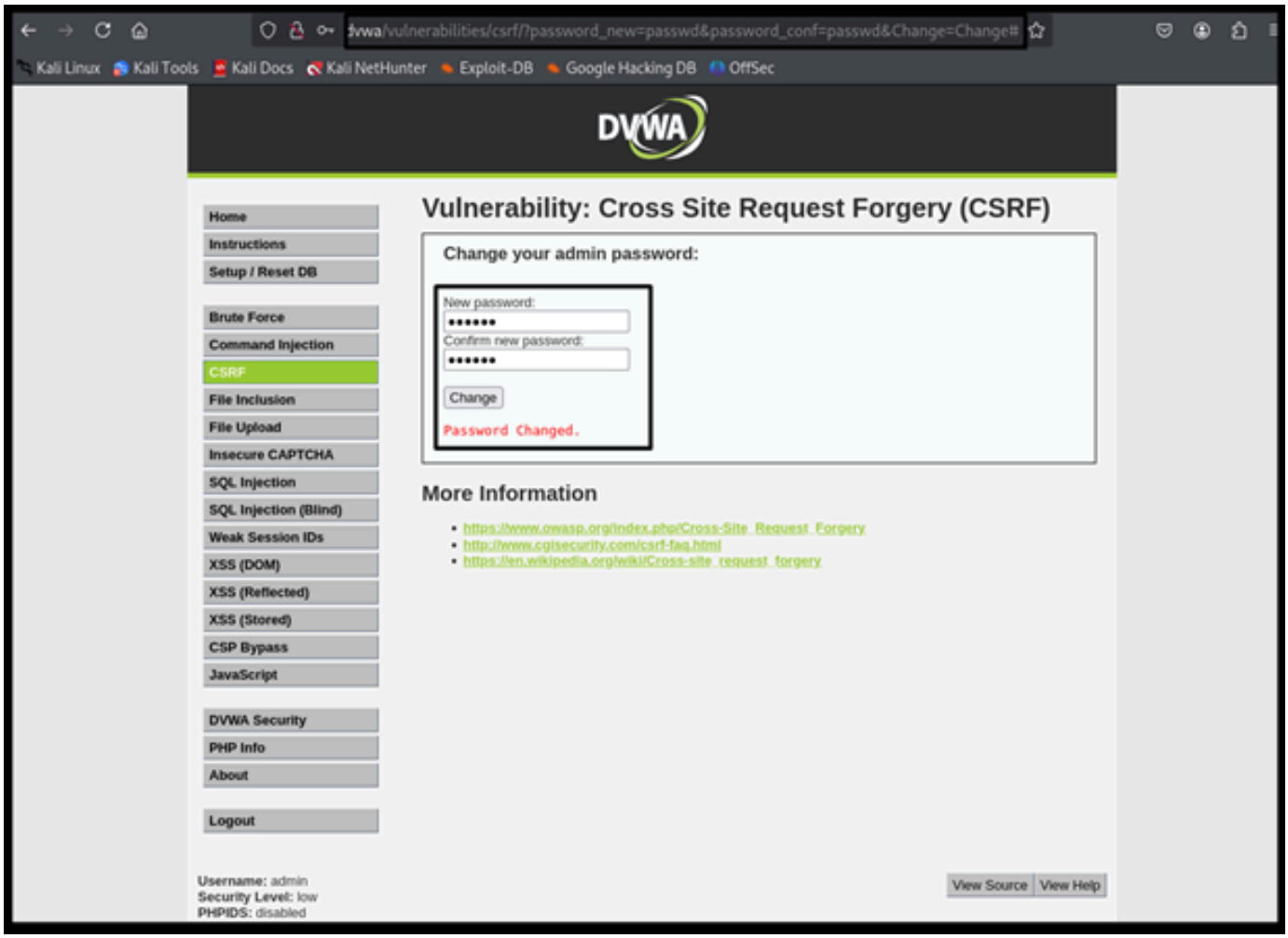
This code is vulnerable due to the lack of proper CSRF protection, allowing an attacker to craft a malicious URL and trick a logged-in user into unknowingly executing unintended actions.

The issue stems from the absence of request origin verification. As a result, an attacker can generate a URL containing the necessary parameters (password_new and password_conf) and send it to a victim. If the victim clicks on the malicious link while authenticated on the vulnerable website, the password change will occur without any additional authentication or user approval.

Step: -2 log in the home page of DVWA then click to the Cross-site Request Forgery Section.



tricking the victim into clicking on the URL while logged into the vulnerable website.

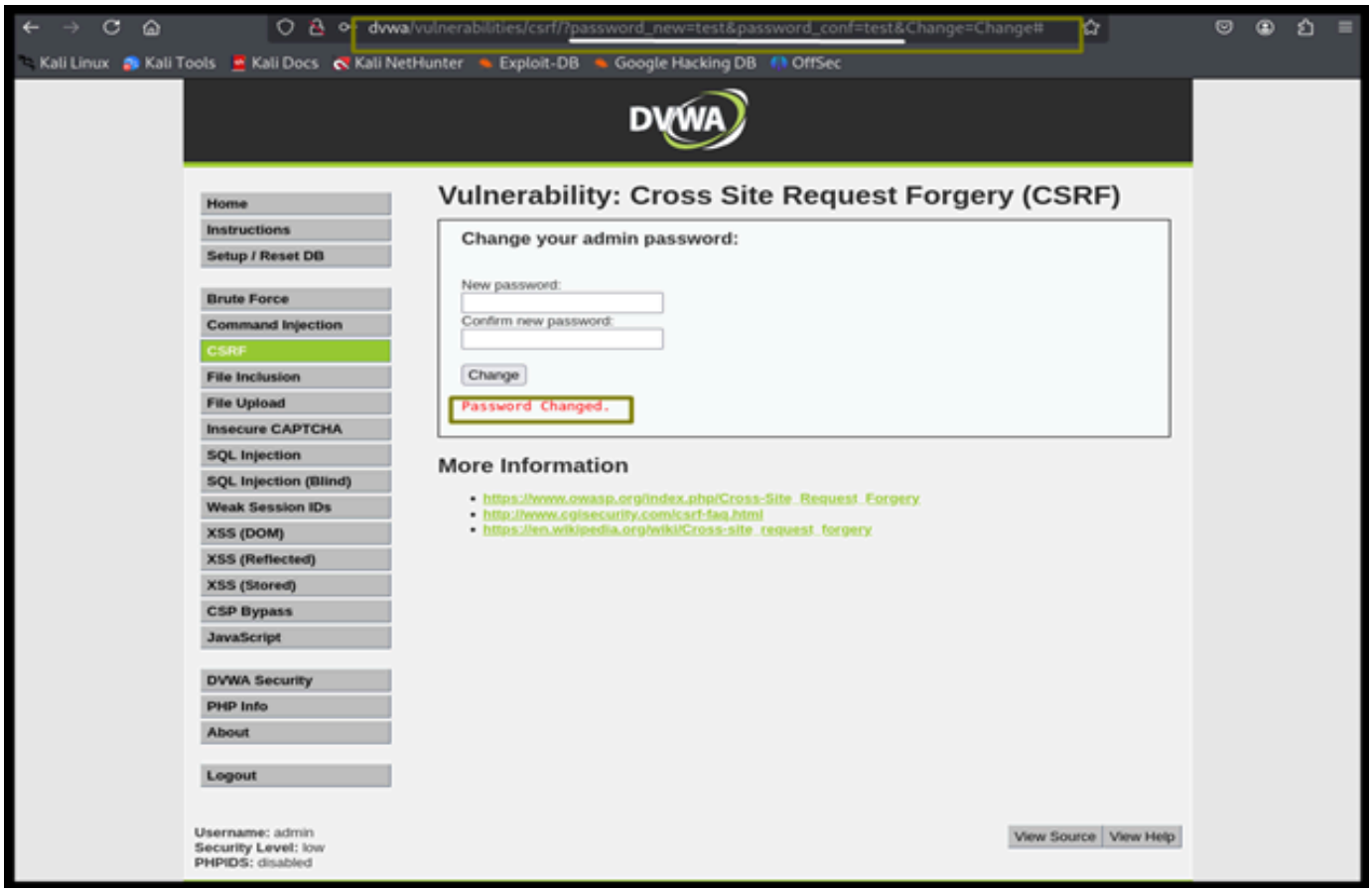


Step: -4 In this step Now we will Display The HTML code for the page, and password has changed by attacker . If attacker send link to victim, the password will be changed.

Step:-5 If the victim tries to open the html page. It will looks like this...

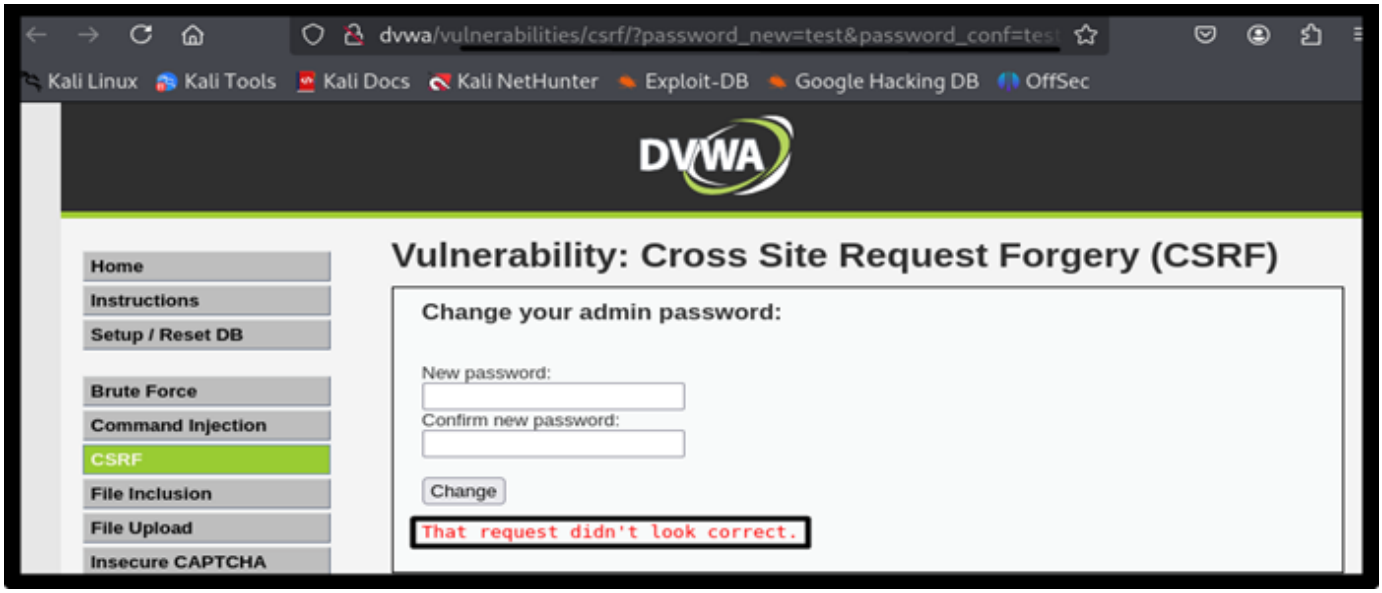
The password "test" will be changed automatically

Step:-6 In this Step We can see that password has changed.



SECURITY LEVEL: - MEDIUM

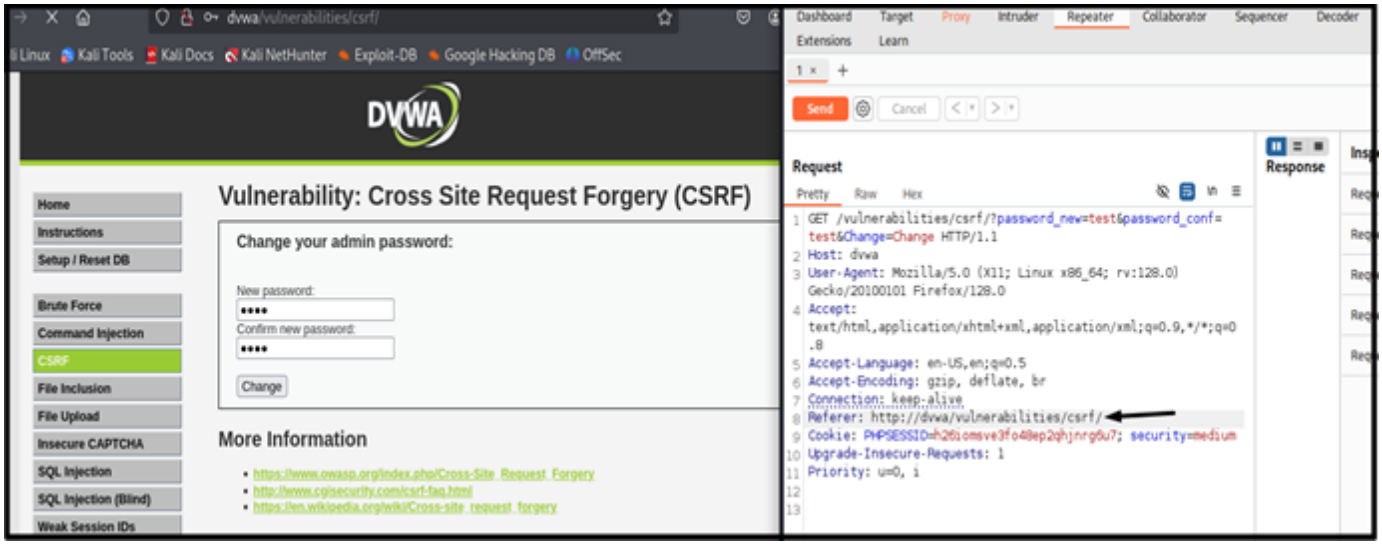
If we attempt to use the low-security method, it will no longer work.



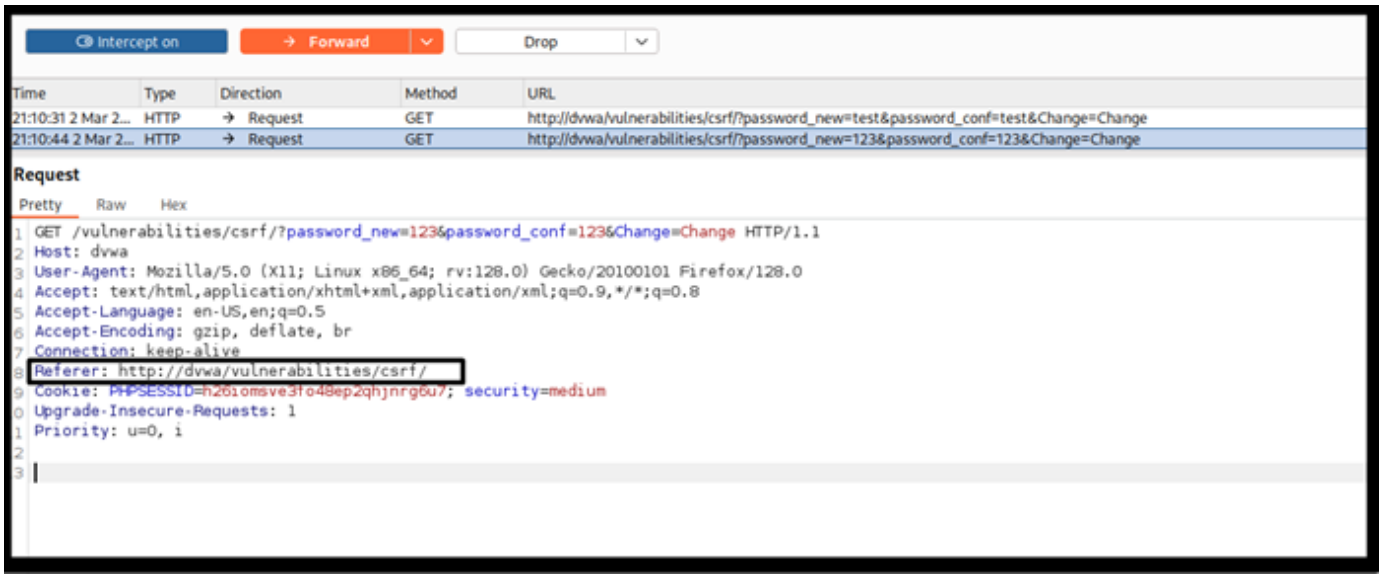
As we Know, we will first view the source code.

The flaw in this code is a cross-Site Request Forgery (CSRF) vulnerability. The code uses the HTTP Refer header to check if the request came from the same server, assuming it's a trusted source. However, the Referrer header can be easily manipulated by an attacker. This allows an attacker to create a malicious website or craft or URL that makes a request to this script, tricking the user's browser into performing an unwanted action o their behalf, such as changing their password without their knowledge or consent.

Step:-1 Can you see the difference? Within the legitimate request we see there is a Referer, where the request came from. That matches up so the request goes ahead.

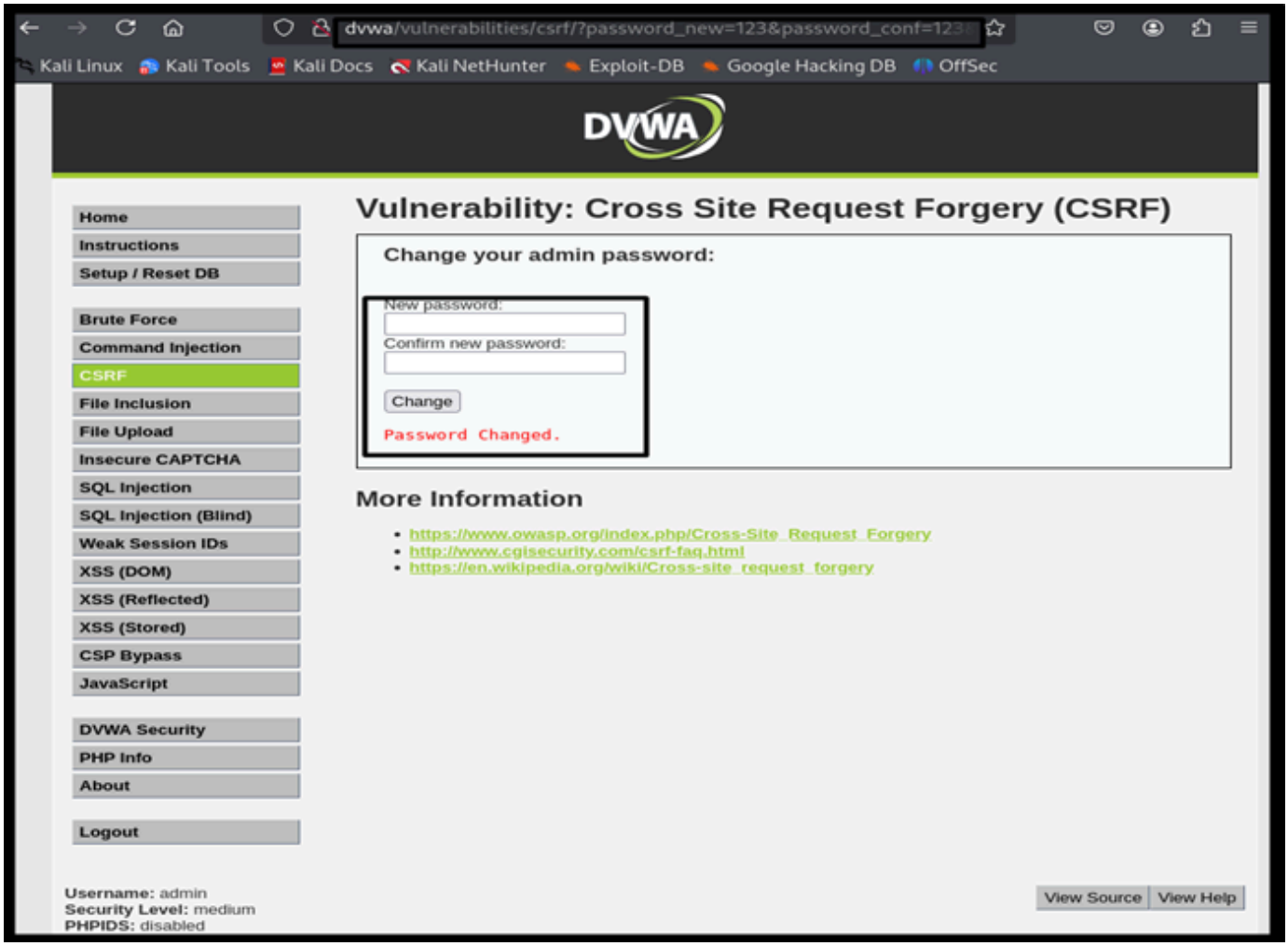


Step:-2 So what if we intercept the illegitimate request with Burp and add the HTTP Referer. Like so.



Step: -3 Password changed successfully

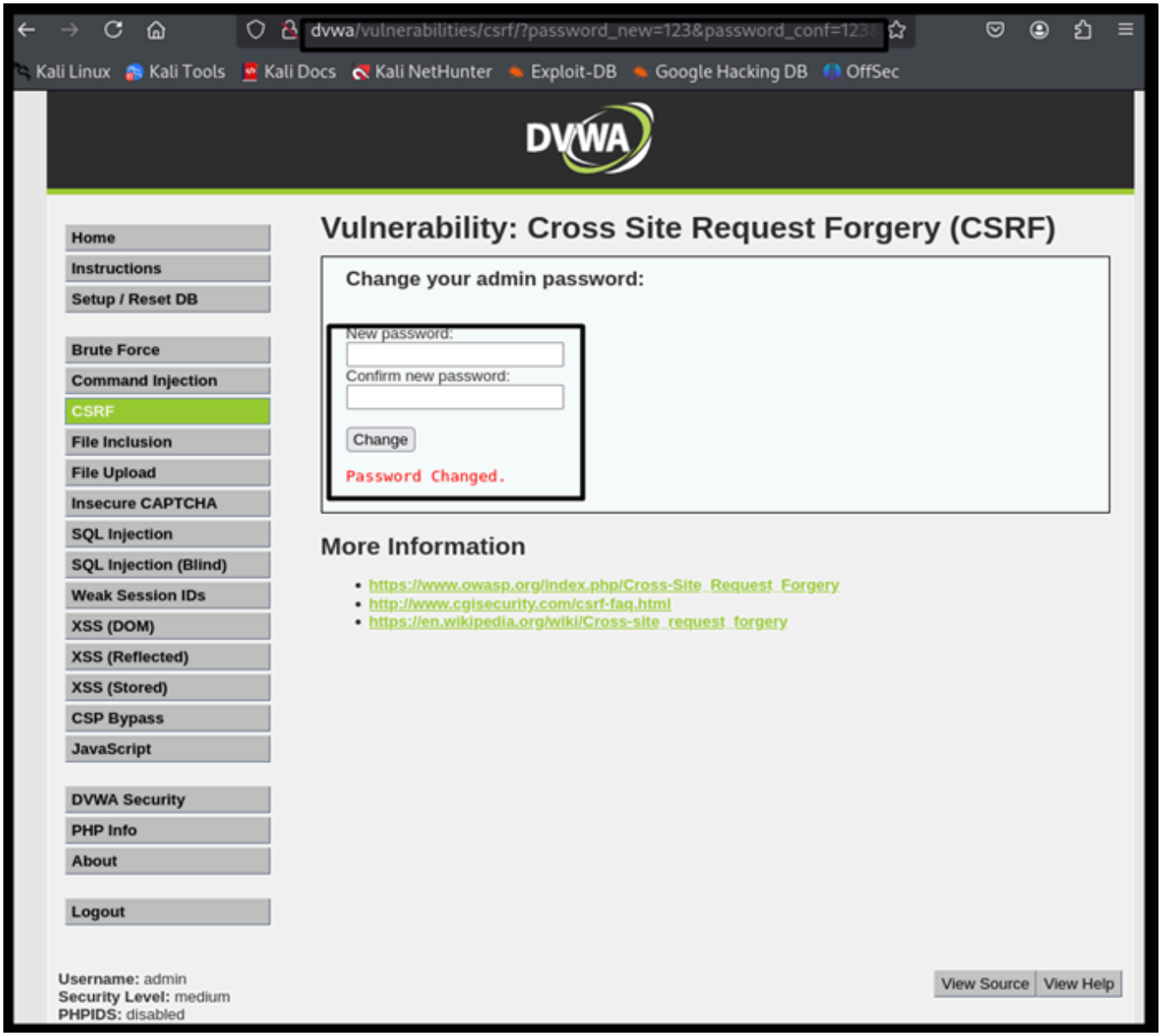
Now we will try to intercept the website and add legitimate Referrer using burp suite



SECURITY LEVEL: -HIGH

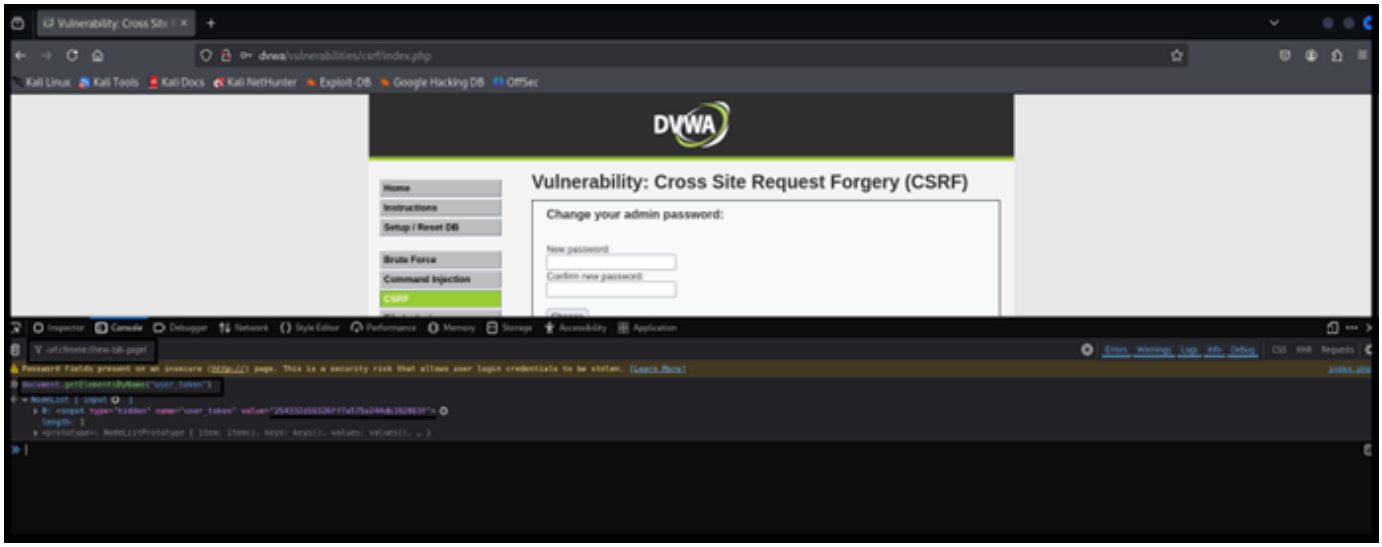
Analyzing this source code, we can observe the user token. Each tab generates a different user token, meaning it is unique per session. I am identifying the new user token by inspecting the page and checking the Console in the browser's Developer Tools.

Step:-1 For this level, we cannot use the previous method first try to understand the request with the help of burp you can notice it has a csrf token.So first, we will change the password to admin and after changing the password copy the URL



Step:-2 We can see the password has been changed now draft the URL with a different token and refresh the page after refreshing inspect the page go to console and type document.getElementsByName("user_token") and press enter we will get the output in the below way.

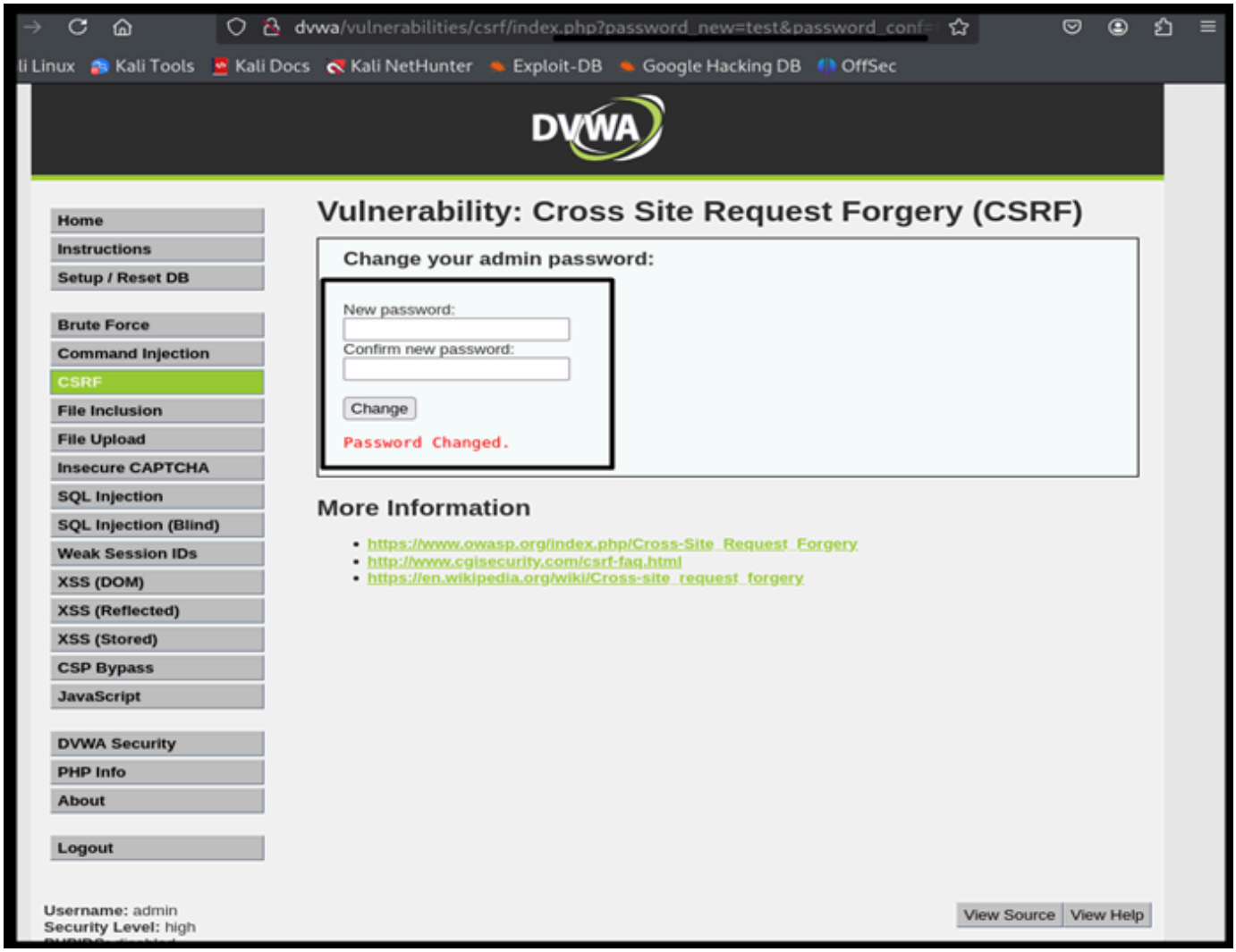
Expand the default value



Step:-3 Analysis the previous URL and create a new URL to add the new user token. Then url open in the browser.

Step:-4 In this Step Password changed successfully

Now we will try to intercept the website and add legitimate Referrer using burp suite



THANKS

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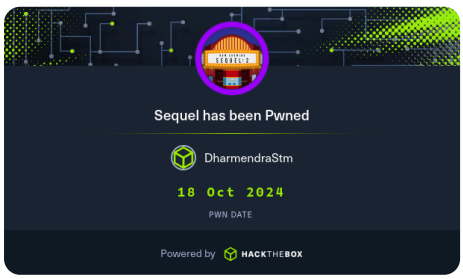

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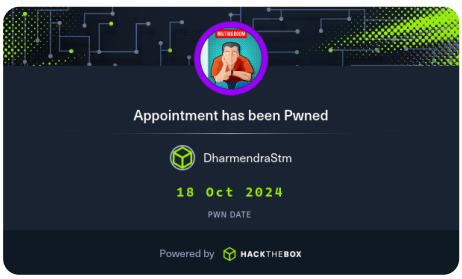

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