These writeups, authored by Peyton Braun, are designed to guide you through the process of solving all the challenges from the Inaugural University of Wisconsin – Stout Cybersecurity Capture the Flag (CTF) event.

This event was hosted by UW-Stout CyROC x CCDL

I hope these writeups help you gain a deeper understanding of each challenge and how to overcome them.

CTF Challenge Writeups

Each writeup will cover the following aspects of the challenge:

1. **Challenge Overview**: A brief description of the challenge.
2. **Steps to Solve**: Detailed steps, tools used, and reasoning behind each step.
3. **Tools and Methods**: Explanation of why specific tools and methods were chosen.
4. **How It Works**: Insight into the underlying concepts and the thinking process.

Challenge: "Rules!"

Challenge Overview:

Find the flag in the rules page of https://ctf.oplabs.us/rules

Challenge Description:

- Can you find the hidden flag in the Rules?

Challenge Hints:

- F12 (inspect element) is strong with this one! You got this :)
- Lots of struggles on this one. You are not submitting anything that is VISIBLE on the Rules Page! Use the tools you have to find HIDDEN values inside the page! You are submitting a flag that says STOUTCTF{something goes here} It is in plaintext, but is hidden on the page! Hint Hint -> Main, Container, Container <- Hint Hint

Steps to Solve:

1. Navigate to https://ctf.oplabs.us/rules

CTF Rules and Format

Event Overview

The Capture the Flag (CTF) competition is hosted by the University of Wisconsin - Stout in partnership with Universiti Kuala Lumpur. The event aims to foster cybersecurity skills through solving challenges and capturing hidden flags.

CTF Competition:
Malaysia Timezone: GMT+8 / United States Central Timezone: CST
Starts: Thursday, December 19th, 2024, at 9 AM (GMT+8) / Wednesday, December 18th, 2024, at 7 PM (CST)
Ends: Monday, December 23rd, 2024, at 2 PM (GMT+8) / Monday, December 23rd, 2024, at 12 AM (CST)

Write-Up Competition:
Submissions Due: Friday, December 27th, 2024, by 2 PM (GMT+8) / Friday, December 27th, 2024, by 12 AM (CST)
Winners Announced: Wednesday, January 1st, 2025, at 10 AM (GMT+8) / Tuesday, December 31st, 2024, at 8 PM (CST)

How to Join

The competition will be held online at https://ctf.oplabs.us/.

Participants should also join our dedicated Discord server for announcements and support:

Join Our Discord

For advisor inquiries, contact:
Email: braunp9273@my.uwstout.edu

Fair Play

- This is an individual competition collaboration is prohibited.
- Sharing solutions, flags, or exploiting unintended vulnerabilities will result in disqualification.

Event Rules

- Participants must be students enrolled at one of the partnering universities. Verification is required to claim prizes.
- Sharing solutions or flags with other participants is prohibited and will result in disqualification.
- Do not exploit unintended vulnerabilities in the competition environment. Accidents causing cyber incidents will be treated as malicious activity.
- All flags must be submitted in the correct format unless otherwise stated in the challenge description.
- If you encounter bugs or issues, report them to event organizers immediately.

Flag Format

Flags for this CTF competition will generally adhere to the following format:

```
STOUTCTF{[a-zA-Z0-9]{32}}
```

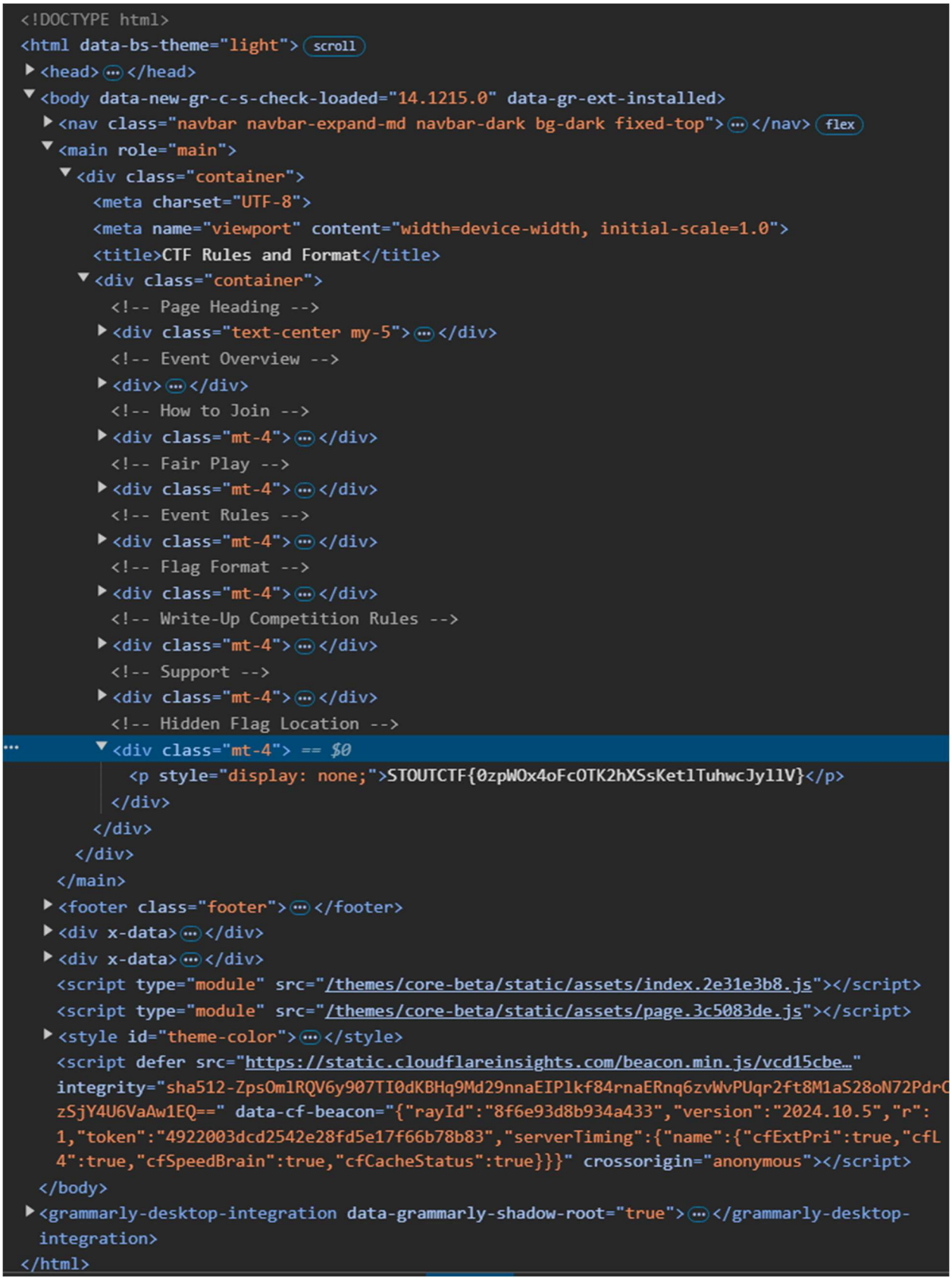
Each flag begins with "STOUTCTF{" followed by 32 alphanumeric characters and ends with "}". Some challenges may use a different format, which will be noted in their descriptions.

Write-Up Competition Rules

- The write-up competition is a solo effort. Collaboration is not allowed.
- Submissions should be in a zipped folder named with your name. Inside, each challenge write-up should be a separate document named as `{Challenge-Name}_{Participant-Name}` (e.g., "Rules_Peyton-Braun").
- Submit write-ups in the designated Discord channel. For larger files, organizers will provide a solution.
- Write-ups will only be accepted if the challenge was solved during the competition. The individual must have solved it during the competition to create a writeup.

Judging Criteria:

2. Inspect the page by pressing F12 or Right Click and Inspect Element
3. Open the HTML code to find the “Hidden Flag Location”


<!DOCTYPE html>
<html data-bs-theme="light"> scroll
<head> ... </head>
<body data-new-gr-c-s-check-loaded="14.1215.0" data-gr-ext-installed>
<nav class="navbar navbar-expand-md navbar-dark bg-dark fixed-top"> ... </nav> flex
<main role="main">

<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>CTF Rules and Format</title>

<!-- Page Heading -->
 ...
<!-- Event Overview -->
 ...
<!-- How to Join -->
 ...
<!-- Fair Play -->
 ...
<!-- Event Rules -->
 ...
<!-- Flag Format -->
 ...
<!-- Write-Up Competition Rules -->
 ...
<!-- Support -->
 ...
<!-- Hidden Flag Location -->
 == $0
STOUTCTF{0zpWOx4oFcOTK2hXSsKetlTuhwcJyllV}

</main>
<footer class="footer"> ... </footer>
<div x-data> ...
<div x-data> ...
<script type="module" src="/themes/core-beta/static/assets/index.2e31e3b8.js"></script>
<script type="module" src="/themes/core-beta/static/assets/page.3c5083de.js"></script>
<style id="theme-color"> ... </style>
<script defer src="https://static.cloudflareinsights.com/beacon.min.js/vcd15cbe…"
integrity="sha512-ZpsOmlRQV6y907TI0dKBHq9Md29nnaEIP1kf84rnaERnq6zvWvPUqr2ft8M1aS28oN72PdrC
zSjY4U6VaAw1EQ==" data-cf-beacon="{"rayId":"8f6e93d8b934a433","version":"2024.10.5","r":
1,"token":"4922003dcd2542e28fd5e17f66b78b83","serverTiming":{"name":{"cfExtPri":true,"cfL
4":true,"cfSpeedBrain":true,"cfCacheStatus":true}}}" crossorigin="anonymous"></script>
</body>
<grammarly-desktop-integration data-grammarly-shadow-root="true"> ... </grammarly-desktop-
integration>
</html>

4. Retrieved flag:
    - STOUTCTF{0zpWOx4oFcOTK2hXSsKetlTuhwcJyllV}

Tools and Methods:

- **Inspect Element**: This is a built-in tool in the browser to inspect the HTML code on the website.

How It Works:

This challenge works by looking for a hidden entry on the rules page. We can see its hidden by the “style=”display: none;” which makes sure that it is not displayed on the actual page to the user, but is still shown inside the code of the website.