Author : Jayesh Jaiswal; Atharva Gawas.

Title : Size_Matters

Git-Hub Links :

https://github.com/Jayesh-2003

https://github.com/ATHARVA-GAWAS

Category : Cryptography

Description : The question is all about finding the the crypted files and decrypt them.

Flag : VishwaCTF{_p3rp3nd1cul4rkh4n__r4m4dh1rs1ngh__d3f1n1t3__f41z4l__4zg4r_}

Writeup

1. Download the zip file and open it.

2)Open "ham_first_ham_first.txt".

```
 1   ASCII, in full American Standard Code for Information Interchange, a standard data-encodin
 2   between computers. ASCII assigns standard numeric values to letters, numerals, punctuation
 3   other characters used in computers.When i was developing something i was in need to add fu
 4   highest ASCII value of alphabet among these files<-Here i came to know about The ASCII for
 5   ASCII uses seven-digit binary numbers—i.e., numbers consisting of various sequences of 0's
 6   combinations of seven 0's and 1's, the code can represent 128 different characters.
 7
 8
 9
10
11   IMPORTANT:
12
13   the name matters but at a time Size matters
14   beware of that . is with extension txt
15
16   Try to read everything we are not idiot to give it there.
17
18
19
```

3)From the image we can clearly get a hint that we must consider the name and size of the files as a parameter.

4)In the same file we can see a line "check the highest ASCII value of alphabet among these files".
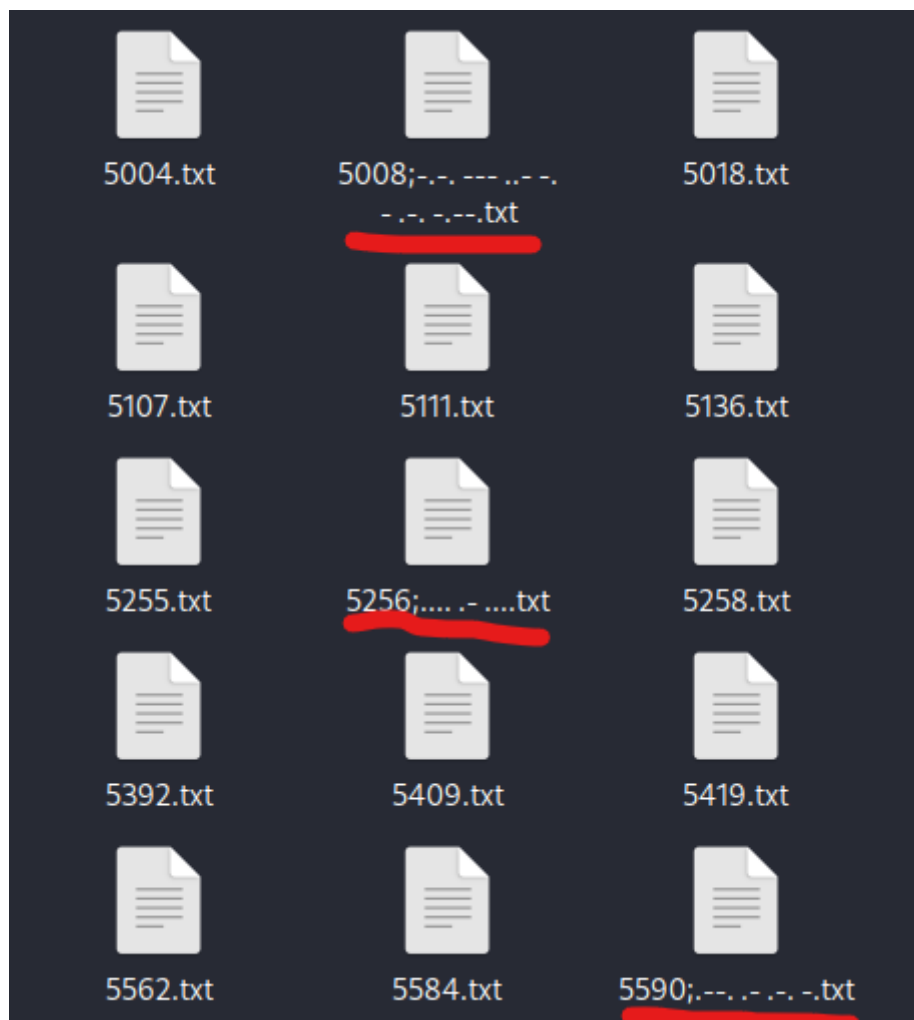
5)We know that z has the highest ASCII value among alphabets.

6)In the folder, we can see a file named "z.txt", so we open it.

7)We get a hint "ASCII is the key".

```
1   ASCII is the key
```

8. Now we can see that name of some files are weird, example

5004.txt

5008;-.-. --- ..- -.
-.-. -.--.txt

5018.txt

5107.txt

5111.txt

5136.txt

5255.txt

5256;.... .- ....txt

5258.txt

5392.txt

5409.txt

5419.txt

5562.txt

5584.txt

5590;.--..- .-. -.txt

9. We can see Morse code hidden in the file name, inorder to decode it, we must first of all sort the files according to names so that we get the code in a correct sequence. We can see a common character ";" among the names, so we can use it as a refernce to sort these files.

10. Open linux terminal and perform the following commands after changing the directory to Size_Matters folder.

find . -name ";"

Note: -name doest indicate any name of your file, but it is just the command by default. No need to replace "name" with any of your filename

```
└$ find . -name "*;*"
./6434;- ..  ── -. -.txt
./9815;- .... ..txt
./2204;-.-. ──  ..- -. - .-. .. . ....txt
./7505;── .-. -.. . .-..txt
./1075;.- .-. ..txt
./7167;-.-- ── ..- .-..txt
./5590;.--. .- .-. -.txt
./9939;- .. - .-.. ..txt
./9652;-.-- ── ..-.txt
./7933; ... txt
./5256;.... .- ....txt
./9027;── .-. -.. . .-..txt
./5008;-.-. ── ..- -. - .-. -.--.txt
./3557;.-- .. - .....txt
./3963; ...- ── .-- . .-.. ....txt
./6214; ... txt
./8703;.- -... ── ..- -.txt
./4322;.- -. - ... txt
./9740; ... .- .--.txt
./5983; ..-. .-.. .- --..txt
./6665;- .... .. -. -.-.txt
./1064;- .... . .-. ..txt
./4815;. .- -.-. .....txt
./8287;- ── .-.. - ... txt
./1328;-- .- -. -.--.txt
./6926; .. -..txt
./2702;.-- .... .. -.-. ....;... - .- .-. -.txt
./9476;.-- .... . -..txt
```

11)Copy all the file names recieved as output of the command and create a text file on desktop named "sort.txt', paste all the file names into it.

```
 1   ./6434;-.. --- -. -..txt
 2   ./9815;- .... ..txt
 3   ./2204;-..- --- ..- -. - .-. .. . ....txt
 4   ./7505;--- .-. -... . .-..txt
 5   ./1075;.- .-. ..txt
 6   ./7167;-..-- --- ..- .-..txt
 7   ./5590;.--. .- .-. -.txt
 8   ./9939;- .. - .-.. ..txt
 9   ./9652;-..-- --- ..-.txt
10   ./7933;...txt
11   ./5256;.... .- ....txt
12   ./9027;--- .-. -... . .-..txt
13   ./5008;-..-. --- ..- -. - .-. -.---.txt
14   ./3557;.-- .. - .....txt
15   ./3963;...- --- .-- . .-.. ....txt
16   ./6214;...txt
17   ./8703;.- -... --- ..- -.txt
18   ./4322;.- -. -...txt
19   ./9740;... .- .--.txt
20   ./5983;..-. .-.. .- --..txt
21   ./6665;- .... .. -. -.-.txt
22   ./1064;- .... . .-. ..txt
23   ./4815;. .- -.-. .....txt
24   ./8287;- --- .-.. -....txt
25   ./1328;-- .- -. -.---.txt
26   ./6926;.. -..txt
27   ./2702;.-- .... .. -.-. ....;... - .- .-. -.txt
28   ./9476;.-- .... . -..txt
29   |
```

12. Now we need to sort the files sequentially as per name.

13. Open linux terminal, change directory to desktop and then use the following command

sort sort.txt

```
└$ sort sort.txt
./1064;- .... . .-. .. txt
./1075;.- .-. .. txt
./1328;-- .- -. -.--.txt
./2204;-.-. ── ..- -. - .-. .. . ....txt
./2702;.-- .... .. -.-. ....; ... - .- .-. -.txt
./3557;.-- .. - .....txt
./3963; ... - ── .-- . .- .. ....txt
./4322;.- -. - ... txt
./4815;. .- -.-. .....txt
./5008;-.-. ── ..- -. - .-. -.--.txt
./5256;.... .- ....txt
./5590;.--. .- .-. -.txt
./5983;..-. .-.. .- -- ..txt
./6214; ... txt
./6434;-.. ── -. -.txt
./6665;- .... .. -. -.-.txt
./6926;.. -..txt
./7167;-.-- ── ..- .-..txt
./7505;── .-. -.. . .-..txt
./7933; ... txt
./8287;- ── .-.. - ...txt
./8703;.- - ... ── ..- -.txt
./9027;── .-. -.. . .-..txt
./9476;.-- .... . -..txt
./9652;-.-- ── ..-.txt
./9740; ... .- .--.txt
./9815;- .... ..txt
./9939;- .. - .-.. ..txt
```

14. Now extract the code from file name and copy it in a text file. In the
"ham_first_ham_first.txt" that do not consider ";" as a cbharacter in the morse
code, so just exclude ";" after the number eg. 1064;- ... . .-. ...txt , here we exclude
';' after 1064 and copy rest of the code "... . .-. ." , also we have excluded '.' in
extension ".txt.

15. The entire code will look like this

```
1    -  ....  .  .-.  .
2    .- .-. .
3    -- .- -. -.--
4    -.-. --- ..- -. - .-. .. . ...
5    .-- .... .. -.-. ....;... - .- .-. -
6    .-- .. - ....
7    ...- --- .-- . .-.. ...
8    .- -. -..
9    . .- -.-. ....
10   -.-. --- ..- -. - .-. -.--
11   .... .- ...
12   .--. .- .-. -
13   ..-. .-.. .- --.
14   ..
15   -.. --- -.. -
16   - .... .. -. -.-
17   .. -.
18   -.-- --- ..- .-.
19   --- .-. -.. . .-.
20   ..
21   - --- .-.. -..
22   .- -... --- ..- -
23   --- .-. -.. . .-.
24   .-- .... . -.
25   -.-- --- ..-
26   ... .- .--
27   - .... .
28   - .. - .-.. .
29
```

16. Now decode the code using an online morse code decoder.
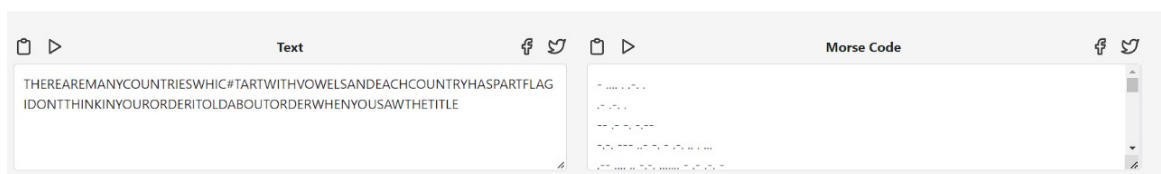
17.

18. Now we have a hint as "THERE ARE MANY COUNTRIES WHICH START WITH
    VOWELS AND EACH COUNTRY HAS PART FLAG I DONT THINK IN YOUR
    ORDER I TOLD ABOUT ORDER WHEN YOU SAW THE TITLE
    18)We can interpret it as vowels have the flag, the tile is size_matters so we can
    sort them with size parameter.

19. So now we check for tghe files a.txt, e.txt, i.txt, o.txt, u.txt, but we can see that these files are encrypted.

20. From points 6 and 7, we see that ascii is the key to decrypt them, so using respective ascii values we decrypt each file.

21. Open terminal, change directory to Size_Matters and then using ccrypt tool decode it with command
    example, ccrypt -d a.txt
    key 97

22. Repeat the procedure for i,e,o,u.

23. We can see all our files are decrypted, now sort them according to size.

24. Now we get the order of vowels as i,u,a,e,o in descending order
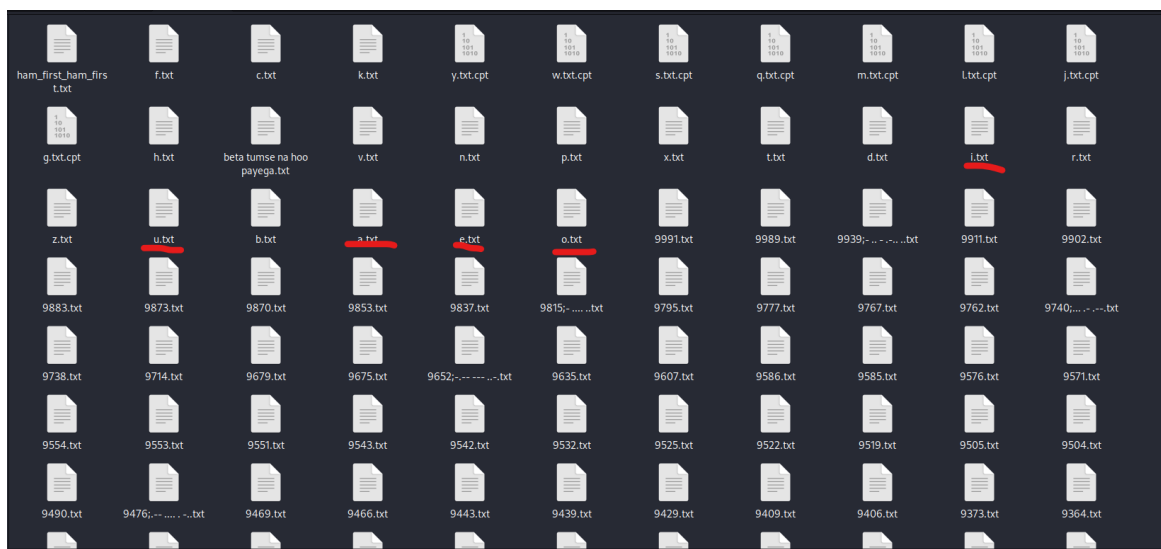
25. Open the files and combine the text within them to get the flag

26. The flag is
    VishwaCTF{_p3rp3nd1cul4rkh4n__r4m4dh1rs1ngh__d3f1n1t3__f41z4l__4zg4r_}