



CTF name:	Rabbit Hole
Number of files:	1
Flag pattern:	flag#*****
Flag:	flag#PD4jXwBs (Flag for demo)
Solvable on which OS:	Windows
This solution's OS:	Windows 11
Software:	(WinZip / WinRar), Text Editor, Photo viewer
Estimated solution time:	6 minutes
Internet access required:	For software installation only

Goal:

The user needs to unzip the file and open nested folders one by one until the last folder in the “rabbit hole” is reached. There the user will find a file with no extension. The user should understand that this file is a .png file – e.g. by seeing that the first characters in its content are PNG (when opened in a text editor). Adding .png as an extension to the file name and opening the file in a photo viewer will reveal the flag.

Implementation:

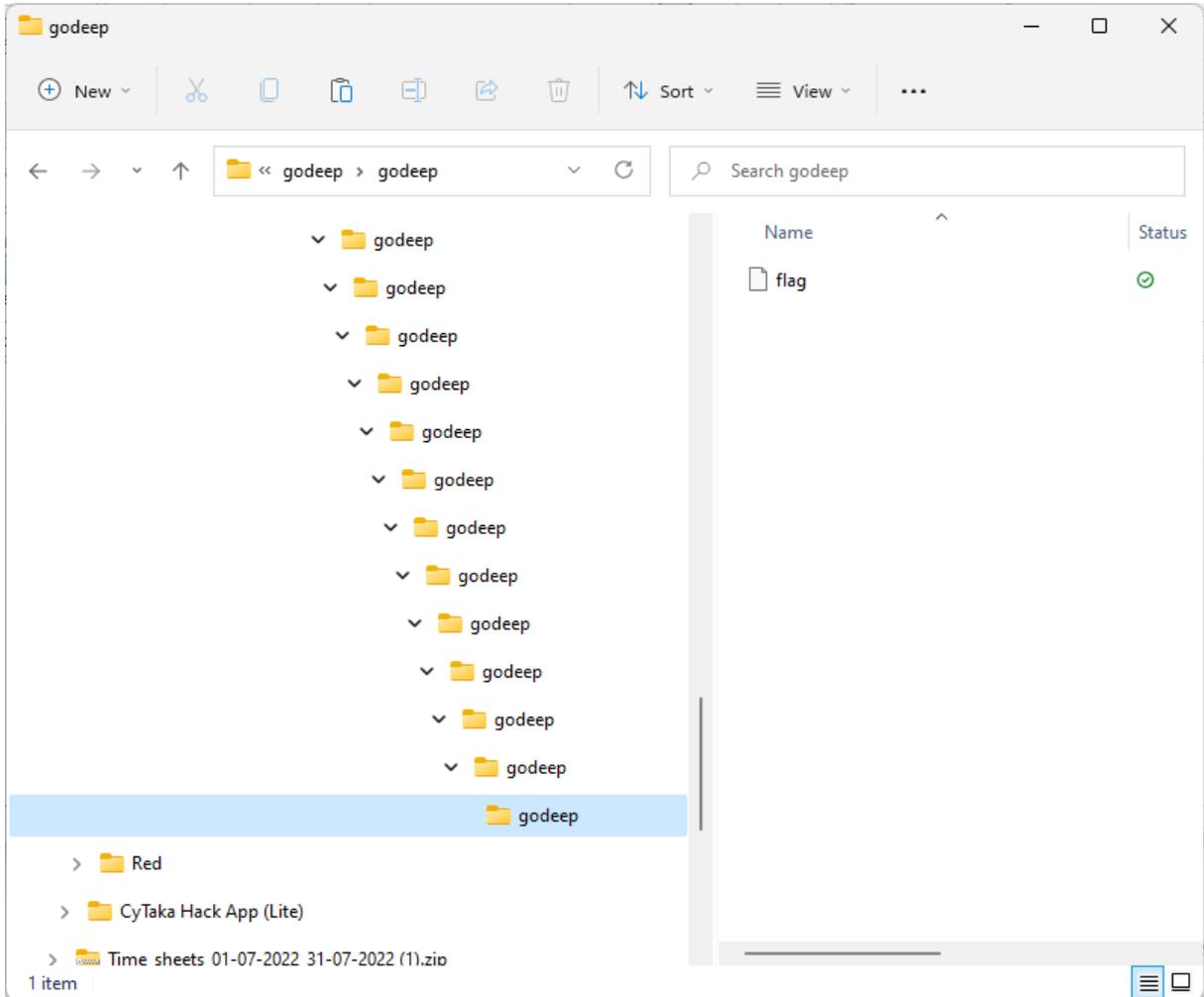
We received the file rabbitHole.rar:

Name	Status	Date modified	Type	Size
 rabbitHole.rar	 	18/10/2022 12:51	WinRAR archive	19 KB

Let's extract its content – a folder named rabbitHole – into the same folder:

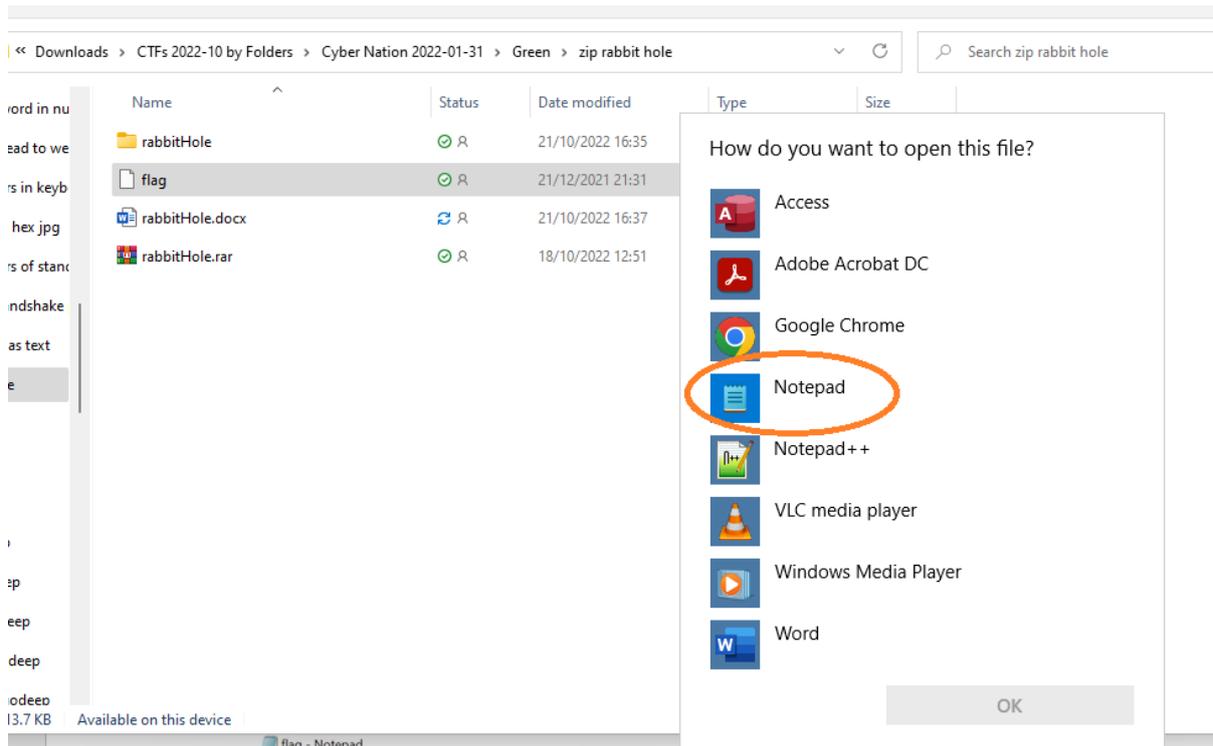
Name	Status	Date modified	Type
 rabbitHole	 	15/11/2022 19:14	File folder
 rabbitHole.rar	 	18/10/2022 12:51	WinRAR archive

Inside the folder rabbitHole is a “rabbit's hole”: 30 nested folders, the innermost of which containing a file called “flag”. It's a file with no extension.

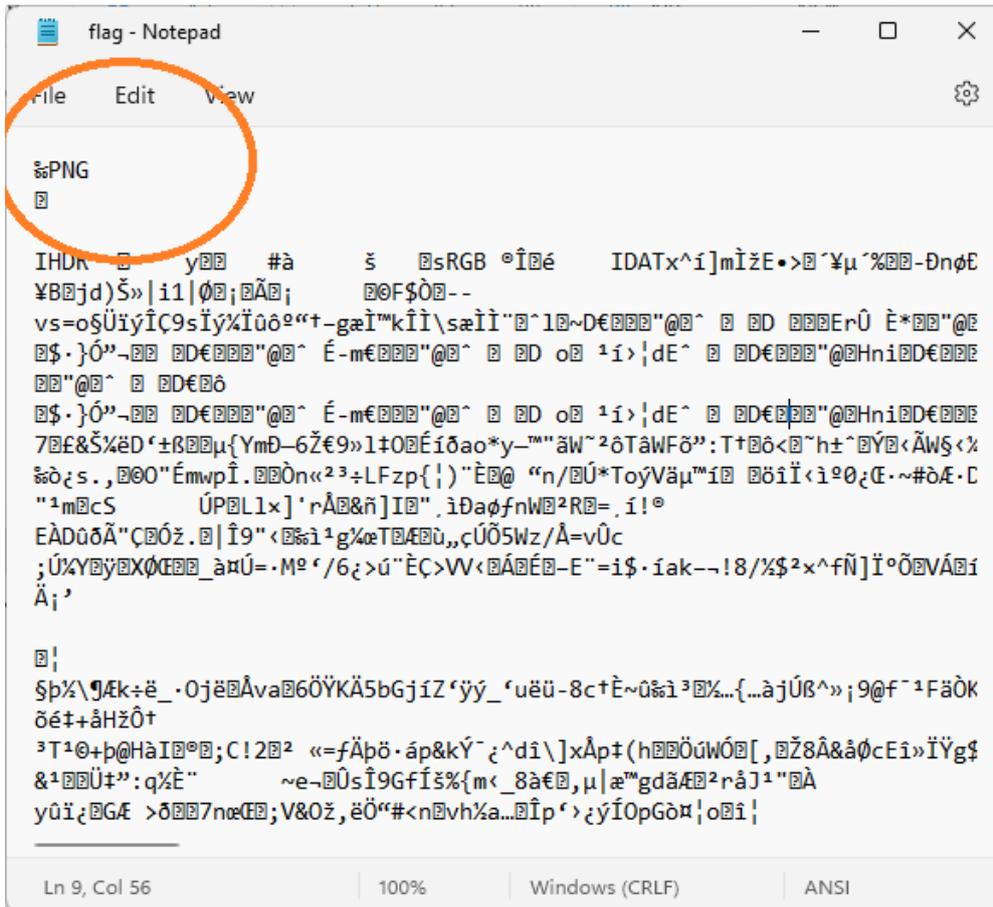


We notice that we don't know of what type this file is. Of course we can try to attach to it extensions at random according to known file types (.exe, .pdf, .mp3, .xlsx, and so on) and try to open the file, until one of them works.

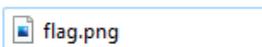
But before that we can also try a more direct approach: see if there's any clue inside the file's textual content. To view that, we'll open the file in a text editor (e.g. Notepad):



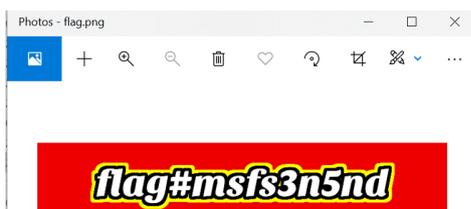
Here we can see that PNG, a common photo format (short for Portable Network Graphic), appears in the first row:



So, let's rename file and add the extension .png:



Now we double-click on the file to open it with a photo viewer, and we see:



Our flag is:



CyTaka™
WORLD CYBER
CHAMPIONSHIP

flag#msfs3n5nd

And that's our answer.