Cybersecurity Discovery Piscine

Gecko 01

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Summary: Now that you know a bit more about decoding, you should know that encodings can be nested... On this excercise you will learn that is not that a big deal :)

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Chapter I

About this Cybersecurity Discovery Piscine

Welcome!

Welcome to this Discovery Piscine in cybersecurity, a challenge where you will dive into the basics of offensive cybersecurity while experiencing the unique educational model of 42. Here, you won't find traditional classes or a single correct solution; learning is collaborative, hands-on, and focused on you.

We invite you to explore the code that powers the software you use every day, while developing skills that go beyond the technical: logical thinking, problem-solving, and self-directed learning. Programming isn't about memorizing rules; it's about creatively assembling blocks to solve problems in your own unique way.

During this experience, you'll tackle key topics in cybersecurity:

- Terminal navigation: Learn to operate and navigate a system using basic commands.

- OSINT (Open Source Intelligence): Discover how to gather public information to identify potential threats.

- Web security: Understand common vulnerabilities in websites and how they are exploited.

- Cryptography: Familiarize yourself with the fundamentals of data and communication protection.

Peer learning and evaluation will play a central role in your journey. You'll exchange ideas, discuss solutions, and gain new perspectives by collaborating with your peers. This will not only enrich your learning experience but also help you build connections and develop critical skills for tackling future challenges.

Remember, this experience is as unique as you are: each participant will follow their own path, validate different projects, and face unique challenges. What truly matters is what you learn, from both your successes and your mistakes.

Good luck! We hope you enjoy this journey into the world of cybersecurity and collaborative learning.

Chapter II

Introduction

Cryptography lies at the core of data protection and communication in the digital world. While often perceived as a field reserved for mathematicians and security experts, many of the techniques it encompasses are tools we use (and depend on) every day—whether to protect our passwords, send encrypted messages, or verify the integrity of a file.

Understanding the basic principles of cryptography will not only help you better protect your information but also recognize the weaknesses of poorly implemented systems. From hashes and encodings to more complex encryptions, this module will teach you how these techniques are used in the real world and how, if not properly applied, they can be exploited.

To make encodings seem more secure, a concept called "security by obscurity" is sometimes applied. This involves chaining multiple encodings together in the hope that an attacker won't know the sequence and won't be able to decode the data. In this exercise, you'll explore how this approach fails and why it's not a reliable security practice.

What you'll learn in this exercise:

- How chaining encodings can create a false sense of security.

- Techniques to decode multiple layers of encoding.

- Why security by obscurity is ineffective as a standalone strategy.

Chapter III

General instructions

Unless explicitly specified, the following rules will apply on every cell of this Discovery Piscine.

- This subject is the one and only trustable source. Don't trust any rumor.

- The assignments in a subject must be done in the given order. Later assignments won't be rated unless all the previous ones are perfectly executed.

- Be careful about the access rights of your files and folders.

- Your assignments will be evaluated by your Piscine peers.

- All shell assignments must run using `/bin/bash`.

- You must read the examples thoroughly. They can reveal requirements that are not obvious in the assignment's description.

- You have a question? Ask your neighbor on the left. Otherwise, try your luck with your neighbor on the right.

- Every technical answer you might need is available in the `man` or on the Internet.

- Remember to read the documentation and to use Slack!

- By Thor, by Odin! Use your brain!!!

Chapter IV

Exercise 01

	Exercise : 01	
	Medium	
Turn-in directory : *ex01/*		
Files to turn in : `flag.txt`		
Forbidden functions : `None`		

Since you know the basis of encoding already, you are now exposed to a higher level of complexity: nested encoding!

```
4e 44 4a 43 51 30 35 37 59 6a 51 31 4d 31 38 32 4e 46 38 78 4e 56 39 6a 4d 44 42 73 58 32 4a 31 4e 31 39
6f 4d 33 68 66 4d 54 56 66 59 7a 41 77 62 44 4e 79 66 51 3d 3d
```

As on the previous excercise: once you know the encoding, you should decode the message to find the flag!!

💡   `Cyber chef`

Chapter V

Submission and peer-evaluation

- Have you found the flag? When you have succeeded, you must write it into a `flag.txt` file.

- The `flag.txt` file should be located at `/gecko/ex01`.

> Please note that during the evaluation, what we want to verify
> is that you have understood the excercise. You should be able to
> explain it and justify the decisions you made.