

Lab Assignment



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Cybersecurity Professional Program
Network Security

Practical Cryptography

NS-05-L3
Encryption Games

Lab Objective

Practice identifying ciphertext and learn about methods to decrypt the ciphertext back to human-readable format (plain text).

Lab Mission

Practice encryption and decryption techniques.

Lab Duration

45–60 minutes

Requirements

- Basic knowledge of encryption methods.

Resources

- Environment & Tools
 - Web browser

Lab Task

Using various online tools linked in the tasks below, practice encrypting plain text and decrypting the ciphertext.

- 1 Encrypt a message using an XOR cipher with the **Key** set to **1111** and encode it to hexadecimal by setting the **Type** to **Text (hexadecimal output)**. Then give it to another learner.

Use the following website for this task: <https://md5decrypt.net/en/Xor/>

XOR Online Encrypt & Decrypt

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5248535443114254524443584548

Type : Text (Hexader)

Key : 1111

Encrypt Decrypt

- 2 Decrypt the cipher you received in step 1 from another learner, using the XOR cipher, hexadecimal type, and the same key at the same URL from step 1.

XOR Online Encrypt & Decrypt

5248535443114254524443584548

4359424552005345435552495459

Type : Hexadecimal

Key : 1111

Encrypt Decrypt

- 3 Encode the result in step 2 from Hex to ASCII using the following website:
<https://www.rapidtables.com/convert/number/hex-to-ascii.html>

Click **Convert** after inserting the required information.

Hex to ASCII Text Converter

Enter hex bytes with any prefix / postfix / delimiter and press the *Convert* button
(e.g. 45 78 61 6d 70 6C 65 21):

Open File

Paste hex numbers or drop file

4359424552005345435552495459

Character encoding

ASCII

Convert

Reset

Swap

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- 4 Decrypt the message **Eyosnnrpini.uct.f** using a Zigzag cipher at the following URL: <https://www.dcode.fr/rail-fence-cipher>

The screenshot shows the dCode website's Rail Fence (Zig-Zag) Cipher decoder. On the left, there's a search bar with the text "e.g. type caesar" and a "GO" button. Below it, a "Results" section is partially visible. The main area is titled "RAIL FENCE (ZIG-ZAG) CIPHER" and "RAIL FENCE DECODER". It features a "ZIGZAG CIPHERTEXT" input field containing "Eyosnnrpini.uct.f". A checkbox labeled "KEEP PUNCTUATION AND SPACES" is checked. Below this is an "AUTOMATIC DECRYPTION" button. The "PARAMÈTRES AND OPTIONS" section includes a "NUMBER NUMBER OF ROWS/LEVELS (HEIGHT)" set to 3, a "START" section with "FROM TOP (LEFT)" selected, and a "USE AN OFFSET OF N CHARACTERS, N=" set to 1. A "DECRYPT RAIL FENCE" button is at the bottom right.

- 5 Decrypt the message **Xqmdzuzs odkbfa ue rgz** using a Caesar cipher at the following URL: <https://cryptii.com/pipes/caesar-cipher>

The screenshot shows the Cryptii website's Caesar cipher decoder. The interface has three main panels: "Ciphertext", "Caesar cipher", and "Plaintext". The "Ciphertext" panel contains the text "Xqmdzuzs odkbfa ue rgz". The "Caesar cipher" panel shows a "SHIFT" of 12, with "a" being shifted to "m". The "Plaintext" panel is currently empty. The interface also includes a "VIEW" button and a "Decoded 23 chars" status.

- 6 Decrypt **Tvir zr zber punyyratrf** using a ROT13 cipher at the following URL:
<https://rot13.com/>

rot13.com

[About ROT13](#)

Tvir zr zber punyyratrf

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ROT13 ▾

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