# Walkthrough: Cryptospiracy Dungeon

This walkthrough explains how to decrypt the given message and retrieve the original flag using Python.

## Step 1: Given Data

From the challenge file, we are given an encrypted message in hex format.

## Step 2: Convert Hex to Bytes

First, we convert the hex-encoded ciphertext back to bytes.

encrypted\_hex = "PUT\_THE\_HEX\_STRING\_HERE"  
ciphertext = bytes.fromhex(encrypted\_hex)

## Step 3: Reverse the Encryption Process

Since each byte was incremented by its index, we first subtract that value.

decremented = [ciphertext[i] - i for i in range(len(ciphertext))]

Next, we reverse the byte order to undo the permutation.

decremented.reverse()

Now, we regenerate the pseudo-random key using the same seed and apply XOR decryption.

import random  
  
random.seed(1337)  
key = [random.randint(0, 255) for \_ in range(len(decremented))]  
  
# XOR decryption  
plaintext = bytearray([decremented[i] ^ key[i] for i in range(len(decremented))])  
  
# Convert to string  
decrypted\_flag = plaintext.decode()  
print("Decrypted Flag:", decrypted\_flag)

## Step 4: Expected Output

The final output should be:

G8KEY{CrYp70\_$p1r@cy\_DuNg30n}