# Walkthrough: MulTLock

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 XORed with 77, we first reverse the XOR operation.

xor\_reversed = [byte ^ 77 for byte in ciphertext]

Now, we divide each value by 3 to restore the original ASCII values.

plaintext = bytearray([byte // 3 for byte in xor\_reversed])  
  
# Convert to string  
decrypted\_flag = plaintext.decode()  
print("Decrypted Flag:", decrypted\_flag)

## Step 4: Expected Output

The final output should be:

G8KEY{Mu1T1\_L0ck\_3nCryp7}