# Walkthrough: Clutch

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 Base64 format.

## Step 2: Decode Base64

First, we decode the Base64-encoded ciphertext.

import base64  
  
encrypted\_message = "PUT\_THE\_BASE64\_STRING\_HERE"  
ciphertext = base64.b64decode(encrypted\_message)

## Step 3: Reverse the XOR Operation

Since the encryption used XOR with a quantum key, we need to reconstruct the key.

import random  
  
random.seed(42) # Using the same seed as encryption  
key = [random.randint(0, 255) for \_ in range(len(ciphertext))]  
  
# XOR decryption  
plaintext = "".join(chr(c ^ k) for c, k in zip(ciphertext, key))  
  
print("Decrypted Flag:", plaintext)

## Step 4: Expected Output

The final output should be:

G8KEY{Clu7ch\_Cryp70\_M@st3ry}