Military CTF

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Project Description and Logic

- I wanted to use a cipher I had never seen before (Vigenère)
- In this CTF challenge, you are a military commander communicating with your fellow officers. You must use your cryptography skills in order to communicate with one another.
- Must finish first challenge before the second one appears
- The Project is hosted at http://localhost:63342/Crypto-CTF-Challenge/
- The GitHub repository can be found here: https://github.com/ggmeiner22/Miltary-CTF-Challenge

Challenge 1


Challenge 1: Encrypted Military Message
The Military commander sent you a message regarding the upcoming mission. However, he encrypted it so the enemy would not be able to find it useful.
Message: Hi Mhglgw Og Oeib!
Reveal Hint
Hint: Key: LEMON
Enter the decoded message below:
Enter decoded message
Submit

Challenge 1 Solution

- The hint “LEMON” is a classic key used in Vigenère cipher examples, strongly suggesting that the encryption method is a Vigenère cipher.

- In a Vigenère cipher, each letter of the plaintext is shifted by a corresponding letter of the key (using a repeating key that aligns with the message).

- The general decryption formula for each letter is:
  $$\text{Plaintext} = (\text{Ciphertext} - \text{Key} + 26) \bmod 26$$
  (assuming that A = 0, B = 1, ..., Z = 25)

Challenge 1 Solution

- Write out the key “LEMON” repeatedly beneath the ciphertext so that every letter of the encrypted message aligns with a letter of the key.
  - Ignore spaces and punctuation

For each letter in the ciphertext:

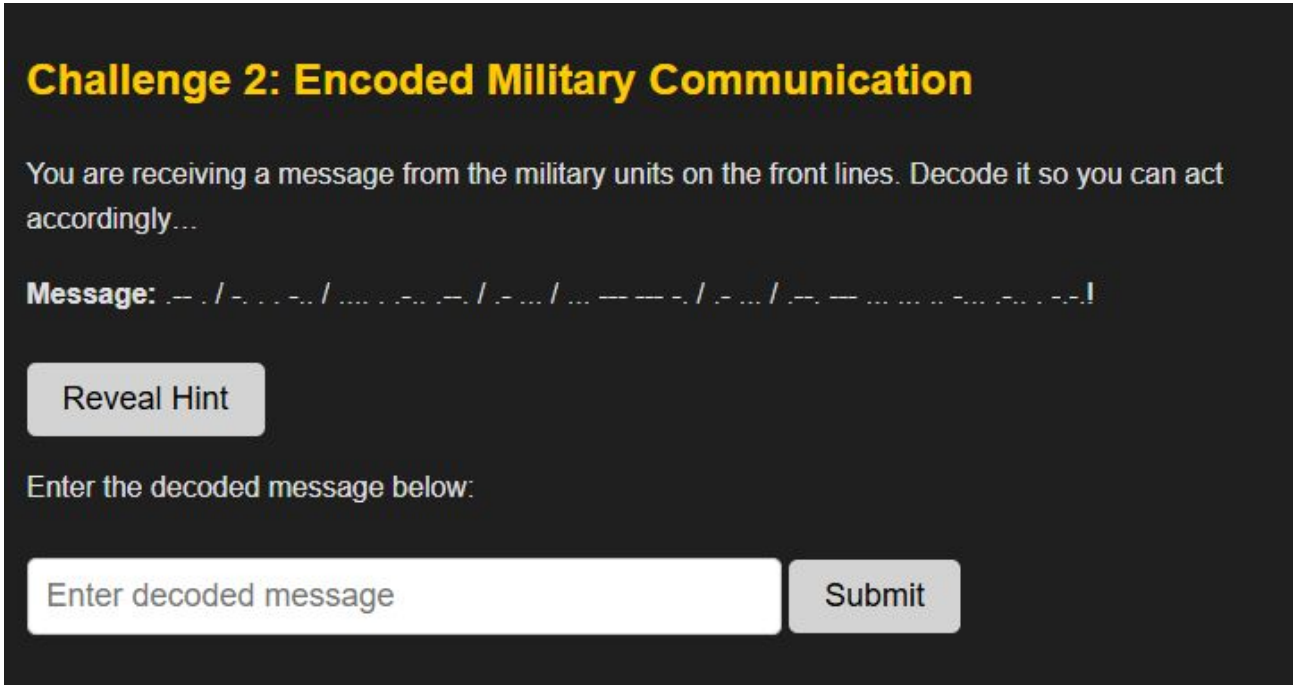
1. Convert both the ciphertext letter and the corresponding key letter to their numerical values (e.g., A = 0, B = 1, ...).
2. Subtract the key’s numerical value from the ciphertext numerical value.
3. Use mod 26 to wrap around the alphabet if the result is negative.
4. Convert the resulting number back to a letter.

Work through the text letter by letter. For example, if the first letter is *H* (which is 7 in 0-indexed form) and the first key letter is *L* (11), then:

- $(7 - 11 + 26) \bmod 26 = 22 \Rightarrow$ the letter W

Continue for each letter: WE ATTACK AT DAWN!

Challenge 2


Challenge 2: Encoded Military Communication
You are receiving a message from the military units on the front lines. Decode it so you can act accordingly...
Message: .-- . / -. . . -.. / .... . .-.. .--. / .- ... / ... --- --- -. / .- ... / .--. --- ... . -... .-.. . .-.-.!
Reveal Hint
Enter the decoded message below:
Enter decoded message
Submit

Challenge 2 Solution