



Medium Reverse Engineering picoCTF 2019

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Hints ?

## Description

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This vault uses an XOR encryption scheme.

The source code for this vault is here: [VaultDoor6.java](#)

If  $X \wedge Y = Z$ , then  $Z \wedge Y = X$ . Write a program that decrypts the flag based on this fact.

mulai seru karena scripting wkwkwwk soalnya bisa melatih programming + cysec.

```
// Author: mark_e_haase
public boolean checkPassword(String password) {
    if (password.length() != 32) {
        return false;
    }
    byte[] passBytes = password.getBytes();
    byte[] myBytes = {
        0x3b, 0x65, 0x21, 0xa , 0x38, 0x0 , 0x36, 0x1d,
        0xa , 0x3d, 0x61, 0x27, 0x11, 0x66, 0x27, 0xa ,
        0x21, 0x1d, 0x61, 0x3b, 0xa , 0x2d, 0x65, 0x27,
        0xa , 0x61, 0x37, 0x65, 0x61, 0x65, 0x65, 0x64,
    };
    for (int i=0; i<32; i++) {
        if (((passBytes[i] ^ 0x55) - myBytes[i]) != 0) {
            return false;
        }
    }
    return true;
}
```

Terdapat fungsi validasi password dimana jika `passBytes[i]` (password input user) di xor dengan `0x55` tidak sama dengan `myBytes[i]`, otomatis akan salah. Maka disini bisa kita asumsikan bahwa `myBytes[i]` xor `0x55` merupakan password input usernya. jadi kita bisa bikin script berikut.

```
>>> myBytes = [0x3b, 0x65, 0x21, 0xa , 0x38, 0x0 , 0x36, 0x1d,
...             0xa , 0x3d, 0x61, 0x27, 0x11, 0x66, 0x27, 0xa ,
...             0x21, 0x1d, 0x61, 0x3b, 0xa , 0x2d, 0x65, 0x27,
...             0xa , 0x61, 0x37, 0x65, 0x61, 0x65, 0x65, 0x64]
>>> result = ""
>>> for c in myBytes:
...     temp = chr(c^0x55)
...     result+=temp
...
>>> print("picoCTF{"+result+"}")
picoCTF{n0t_mUcH_h4rD3r_tH4n_x0r_4b04001}
>>> 
```

flag : picoCTF{n0t\_mUcH\_h4rD3r\_tH4n\_x0r\_4b04001}