Witches

Problem: I have encoded a string; can you turn it into a flag?
Given: 464c41477b336e436f64316e475f346e445f6433633044316e477d

Notes:

Encoding and decoding are an easy way to convert strings to a certain encoded type of text or to turn an encoded type of text back to another form of text by decoding it. Simple examples would be if I encode “s” with hex, I am given ‘73’. Now if I decode ‘73’ with hex, I am given “s”. This can be seen in the following screenshot (coded in Python).

```
>>> 's'.encode('hex')
'73'
>>> '73'.decode('hex')
's'
```

We can encode and decode single characters too, as the examples below. The ASCII code of the character 'F' is 0x46 in hexideciaml or 70 in decimal. The string '46' can be converted to integer on base 16 by int('46',16). Then, the integer can be converted to the character 'F' by chr(70) or chr(0x46). The character can be converted to the integer of its ASCII code by ord('F').

```
>>> int('46', 16)
70
>>> chr(0x46)
'F'
>>> chr(70)
'F'
>>> chr(int('46', 16))
'F'
>>> ord('F')
70
```

Steps:

1) We are given a string that we know is encoded. When looking at this string you can see a pattern of characters such as c, e, f, and d. Hopefully these stick out as the letters that are used when counting in hex. Therefore, we know we have a string that was encoded with hex.

2) Next we can easily use python to decode this string for us. First just open the terminal. Then, go to the python interpreter by typing ‘python’ in your command line. It should look like the following:

```
Python 2.7.10 (default, Oct 23 2015, 19:19:21)
[GCC 4.2.1 Compatible Apple LLVM 7.0.0 (clang-700.0.59.5)] on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

3) Now enter the command to decode the given string with the argument as hex. The command should look as: (do not copy and paste from Microsoft word, command will not work)

'464c41477b336e436f64316e475f346e445f6433633044316e477d'.decode('hex')