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# Python 3: The Python Environment Lesson 5, Project 1

Handed in: 4 Jun 2015 02:20:05AM Graded: 4 Jun 2015 10:30:58PM

**Here are your instructions:**

Create a **Python3\_Homework05** project and assign it to your **Python3\_Homework** working set. In the **Python3\_Homework05/src** folder, create a program named **ccn\_safety.py** with a function that substitutes X for all but the last four digits of any credit card numbers in a string, returning the updated string as its result. Use the following text as a sample:

Text to use in ccn\_safety.py:

Have you ever noticed, in television and movies, that phone numbers and credit cards

are obviously fake numbers like 555-123-4567 or 5555-5555-5555-5555? It is because a number

that appears to be real, such as 1234-5678-1234-5678, triggers the attention of privacy and

security experts.

Your project should meet the following conditions:

* For our purposes, it only needs to convert numbers of the form XXXX-XXXX-XXXX-XXXX.
* The program should return this text: "Have you ever noticed, in television and movies, that phone numbers and credit cards are obviously fake numbers like 555-123-4567 or XXXX-XXXX-XXXX-5555? It is because a number that appears to be real, such as XXXX-XXXX-XXXX-5678, triggers the attention of privacy and security experts." Note that the phone numbers should not be replaced!
* You should include a **test\_ccn\_safety.py** program in a separate file that confirms that your code functions as expected.

Submit **ccn\_safety.py** and **test\_ccn\_safety.py** when they are working to your satisfaction.

##### Your Comment:

Kirby,

I would be interested in any insight you can provide on how I might be able to make my regex

strictly adhere to a given structure. For example, I was trying to make the ccn\_safety function

robust to garbage numbers that might get picked up in the search because they have a similar

format (i.e. 5 groups of 4 numbers -> 5555-5555-5555-5555-5555). If I run that number through

the ccn\_safety function, it would spit out "XXXX-XXXX-XXXX-5555-5555" which is obviously

not right.

##### Items Handed In

* [Open Project Handed In](https://students.oreillyschool.com/student/project/?/.handin/147-6610-1/com.ost.jwoloson.147.6610.1.Python3_Homework05.zip)

### Overall Comments:

Good job!

Below is a more conservative version of the function, in

the sense that 3 groups of 4-digits with hypens (dashes)

is not enough: all 4 groups of 4-digits must be matched,

but then only the last group remains, thanks to named

group concatenation in the replacement string. How many

loopholes one feels a need to address versus adding

gratuitous / unnecessary complexity to the regex is a

judgement call and depends on the characteristics of

the target text.

def ccn\_safety(text):

"""

Converts the first 12 digits of a credit card number to XXXX-XXXX-XXXX

leaving the last four digits alone for all credit card numbers in text

"""

#Example: text = "1234-5678-9010-5555" and "XXXX-XXXX-XXXX-5555" returned

#\g found in python docs to make sure last four digits are visible

return re.sub(r"(\d{4}-){3}(?P\d{4})",

"XXXX-XXXX-XXXX-"+"\g",text)

-Kirby

### Grade:

Great

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