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Course : Advanced Application Programming
Quest : Quest 2 – Regex

```python
#Quest: Regex, Files, Urls


import re
import requests



__STUDENT_ID__  = "47444609"        # replace with your 8 digit student id
__QUEST_NAME__ = "Code "           # replace with your coding name - max 15 characters


def count_vowels(mystr):
    matchObject = re.findall(r'[aeiou]', mystr, re.IGNORECASE)
    return matchObject.__len__()



def is_valid_python_hex(mystr):
    matchObject = re.search(r'^(0{1}x{1})[A-F0-9]+$', mystr, re.IGNORECASE)
    if matchObject:
        return True
    else:
        return False


def has_vowel(mystr):
    matchObject = re.search(r'[aeiou]', mystr, re.IGNORECASE)
    if matchObject:
        return True
    else:
        return False
```

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def is_integer(mystr):
    matchObject = re.search(r'^(-?)[0-9]+$', mystr, re.IGNORECASE)
    if matchObject:
        return True
    else:
        return False



def get_extension(mystr):
    matchObject = re.search(r'^[a-z].*[.]{1}[a-z]+$', mystr, re.IGNORECASE)
    if matchObject:
        return ('' + re.findall(r'[a-z]*$', mystr, re.IGNORECASE)[0])
    else:
        return 'NONE'


def is_number(mystr):
    matchObject = re.search(r'^(-?)[0-9]+?[.]{0,1}[0-9]*$', mystr, re.IGNORECASE)
    if matchObject:
        return True
    else:
        return False

    return True


def convert_date_format(mystr):
    matchObject = re.search(r'^(\d{4})-(\d{1,2})-(\d{1,2})$', mystr, re.IGNORECASE)
    if matchObject:
        return re.sub(r'(\d{4})-(\d{1,2})-(\d{1,2})', '\\2-\\3-\\1', mystr)
    else:
        return 'NONE'



#File functions
def readFileCountLines(filename):
    with open(filename, 'r') as myfile:
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        data = myfile.read()
        print(data)
        matchObject = re.findall(r'\n', data, re.IGNORECASE)
        print(matchObject.__len__() + 1)
        return (matchObject.__len__() + 1)




def readFileCountStringOccurrences(filename, stringval):
    with open(filename, 'r') as myfile:
        data = myfile.read()
        matchObject = re.findall(r'(' + re.escape(stringval) + ')', data, re.IGNORECASE)
        print(matchObject)
        return matchObject.__len__()


def readFileSumDigitsGreaterThanNumber(filename, number):
    with open(filename, 'r') as myfile:
        data = myfile.read()
        matchObject = re.findall(r'\d[0-9]+', data, re.IGNORECASE | re.MULTILINE)
        print(matchObject)
        sum = 0
        for allNumbers in matchObject:
            if int(allNumbers) > number:
                sum = sum + int(allNumbers)
        return sum




def remove_all_but_alpha(mystr):
    """ remove all characters that are not alpha a-z A-Z
    >>> remove_all_but_alpha('hey-99-where8isthe**big_table**') -> 'heywhereisthebigtable'
    """
    matchObject = re.findall(r'[a-z]+', mystr, re.IGNORECASE)
    print(matchObject)
    if matchObject:
        allAplha = ""
        for alpha in matchObject:
            allAplha = allAplha + alpha
```

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        return allAplha
    else:
        return 'NONE'



#URL functions
def readurlCountStringOccurrences(urlname, stringval):
    response = requests.get(urlname)
    matchObject = re.findall(r'(' + re.escape(stringval) + ')', response.content.decode('utf-8'), re.IGNORECASE)
    if matchObject:
        return matchObject.__len__()


    return 0



def readurlCountValidPhoneNumbers(urlname):
    response = requests.get(urlname)
    matchObject = re.findall(r'([0-9]{3}[.][0-9]{3}[.][0-9]{4})|([0-9]{3}[-][0-9]{3}[-][0-9]{4})|([0-9]{10})',
response.content.decode('utf-8'), re.IGNORECASE)
    if matchObject:
        return matchObject.__len__()


    return 0




if __name__  == '__main__':
    print ("To test your code execute: python test_QuestFilesUrls.py  or on command line execute: pytest ")
```

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============================= 29 passed in 0.50 seconds =============================
dgogri@genuse26.engr.smu.edu$ pytest -x -vv
============================== test session starts ===============================
platform linux -- Python 3.5.2, pytest-3.3.0, py-1.5.2, pluggy-0.6.0 -- /usr/local/es6/bi
n/python3.5
cachedir: .cache
rootdir: /users7/csegrad/dgogri, inifile:
collected 29 items

test_regexFilesUrlsQuest.py::test_IdIsEightDigits PASSED                    [  3%]
test_regexFilesUrlsQuest.py::test_okQuestName PASSED                        [  6%]
test_regexFilesUrlsQuest.py::test_count_vowels1 PASSED                      [ 10%]
test_regexFilesUrlsQuest.py::test_is_valid_python_hex1 PASSED               [ 13%]
test_regexFilesUrlsQuest.py::test_is_valid_python_hex2 PASSED               [ 17%]
test_regexFilesUrlsQuest.py::test_is_valid_python_hex3 PASSED               [ 20%]
test_regexFilesUrlsQuest.py::test_has_vowel1 PASSED                         [ 24%]
test_regexFilesUrlsQuest.py::test_has_vowel2 PASSED                         [ 27%]
test_regexFilesUrlsQuest.py::test_is_integer1 PASSED                        [ 31%]
test_regexFilesUrlsQuest.py::test_is_integer2 PASSED                        [ 34%]
test_regexFilesUrlsQuest.py::test_is_integer3 PASSED                        [ 37%]
test_regexFilesUrlsQuest.py::test_get_extension1 PASSED                     [ 41%]
test_regexFilesUrlsQuest.py::test_get_extension2 PASSED                     [ 44%]
test_regexFilesUrlsQuest.py::test_get_extension3 PASSED                     [ 48%]
test_regexFilesUrlsQuest.py::test_is_number1 PASSED                         [ 51%]
test_regexFilesUrlsQuest.py::test_is_number2 PASSED                         [ 55%]
test_regexFilesUrlsQuest.py::test_is_number3 PASSED                         [ 58%]
test_regexFilesUrlsQuest.py::test_is_number4 PASSED                         [ 62%]
test_regexFilesUrlsQuest.py::test_is_number5 PASSED                         [ 65%]
test_regexFilesUrlsQuest.py::test_is_number6 PASSED                         [ 68%]
test_regexFilesUrlsQuest.py::test_convert_date_format1 PASSED               [ 72%]
test_regexFilesUrlsQuest.py::test_convert_date_format2 PASSED               [ 75%]
test_regexFilesUrlsQuest.py::test_convert_date_format3 PASSED               [ 79%]
test_regexFilesUrlsQuest.py::test_readFileCountLines1 PASSED                [ 82%]
test_regexFilesUrlsQuest.py::test_readFileCountStringOccurrences1 PASSED [ 86%]
test_regexFilesUrlsQuest.py::test_readFileSumDigitsGreaterThanNumber1 PASSED [ 89%]
test_regexFilesUrlsQuest.py::test_remove_all_but_alpha1 PASSED              [ 93%]
test_regexFilesUrlsQuest.py::test_readurlCountStringOccurrences1 PASSED     [ 96%]
test_regexFilesUrlsQuest.py::test_readurlCountValidPhoneNumbers1 PASSED  [100%]

============================= 29 passed in 0.52 seconds =============================
dgogri@genuse26.engr.smu.edu$ ▉
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