Meeting 9 Exercises

Info 206

21 September 2017

Due: 28 September 2017 11:59 PM

Write individual scripts to solve the following exercises.

1. Palindrome

a. create a folder "palindromes" and, inside the folder create a python module thate includes functions (either one function or multiple) that perform the following:

- Prompts the user for a full name (Firstname, middlenames and lastname.
- Use a while loop that counts downwards (instead of using the 'reverse' function) and print the letters of the name reversed (hint: use print(var, end='') in each iteration of the loop).

You should use s.lower() and s.upper() as appropriate to change a string s to lowercase and uppercase letters.

Make sure your code prints the examples exactly as shown below.

```
Enter your name: Niall Carrigan Keleher
rehelek nagirrac llian
```

If the name is the same forward and backwards, print "Palindrome!" on the next line.

```
Enter your name: Ana
ana
Palindrome!
```

Save your script as palindrome.py

b. Write an script runpalindrome_[lastname].py that imports your palindrome module and uses your function. Use your function at least 3 times.

3. Lutz Page 802: Test Your Knowledge, Part V Exercise

Save all files in a directory "mymodule" in your git exercises repository for meeting9.

2. [From Python Software Design by Allan B. Downey] Counting items

The following program counts the number of times the letter 'a' appears in a string:

```
word = 'banana'
count = 0
for letter in word:
    if letter == 'a':
        count = count + 1
print(count)
```

Encapsulate this code in a function named "count", and generalize it so that it accepts the string and the letter as arguments.

Your code may look like the following:

```
################################################################################
# Imports


# Body

################################################################################
def main():

    # Remove print("Hello World!") and add several (3-5) functions calls to count()
    # below, passing various strings and letters
    count("Hello World!")

if __name__ == '__main__':
    main()
```

3. [From Python Software Design by Allan B. Downey] The following functions are all intended to check whether a string contains any lowercase letters, but at least some of them are wrong. For each function, describe (is the docstring) what the function actually does. You can assume that the parameter is a string.

Do not merely paste the output as a counterexample into the documentation string, explain what is wrong.

```
# Body


def any_lowercase1(s):
    """Explain what is wrong, if anything, here.
    """
    for c in s:
        if c.islower():
            return True
        else:
            return False


def any_lowercase2(s):
    """Explain what is wrong, if anything, here.
    """
    for c in s:
        if 'c'.islower():
            return 'True'
        else:
            return 'False'


def any_lowercase3(s):
    """Explain what is wrong, if anything, here.
    """
    for c in s:
        flag = c.islower()
    return flag
```

```python
def any_lowercase4(s):
    """Explain what is wrong, if anything, here.
    """
    flag = False
    for c in s:
        flag = flag or c.islower()
    return flag


def any_lowercase5(s):
    """Explain what is wrong, if anything, here.
    """
    for c in s:
        if not c.islower():
            return False
    return True


################################################################################
def main():

    # Remove print("Hello World!") and for each function above that is wrong,
    # call that function with a string for which the function returns
    # incorrectly.
    # ex.: any_lowercase_("thisstringmessesupthefunction")
    print("Hello World!")


if __name__ == '__main__':
    main()
```