

# Assignment 9

Due Wednesday, June 3rd 11:59 pm

## Reading

Review Chapter 10 and read Chapter 11 in **Introduction to Computing using Python: An Application Development Focus, Second Edition** by Ljubomir Perković.

## Logistics

In this class programming assignments may be completed in consultation with up to two other classmates. You must identify the classmates with whom you collaborate in a comment at the top of the assignment, and the number of collaborators on any assignment **may not exceed two other people**. You must also submit a comment in your submission for each assignment that describes in detail how each collaborator contributed to the assignment. If you did not collaborate with anyone on the assignment, you must include a comment that says that. You may not under any circumstances discuss the assignments with classmates other than your identified collaborators. Working so closely with anyone other than your identified collaborators, Mr. Zoko or the teaching assistant, so as to produce identical or near identical code is a violation of the Academic Integrity policy. This policy will be strictly enforced.

Please include the following with your assignment submission:

1. A comment at the top of your Python file identifying any classmates with whom you discussed or in any other way collaborated on the assignment. You may work (directly or indirectly) with **no more than two** other people.
2. Add a comment at the top of your Python file that describes for each person what they contributed to the assignment. This must be at least 2-3 sentences and be **very specific and detailed**.

A submission that does not include a list of collaborators and comments indicating how you collaborated with classmates will earn a 0. If you worked alone you must put a comment at the top of your file that indicates that or you will also receive a 0. There will be no exceptions to this rule.

Again, you are subject to all the rules specified in the Academic Integrity policy. Please read it carefully before beginning this assignment.

## Assignment

**Please remember that you are not allowed to consult online resources when completing homework assignments.** If you have questions about this assignment, please contact me.

Implement the functions below in a file called **csc242hw9.py** a template for which has been provided on the D2L site. **You must include appropriate doc strings** (e.g. strings that appear on the line following the function header) to the class that clearly and concisely describe what the functions are doing. A submission without doc strings will not earn full credit.

The functions written for this assignment must be **recursive** and **must not** use global variables. Do not modify the function names or parameters in the template file. Each function will use a loop, but the main work of the function will be done using recursion. Please read the problem description carefully. Function that are described as returning values should not do any printing. Solutions that do not follow these guidelines will not earn full credit, even if they produce the correct results in all cases.

Please note that local variables are absolutely fine in any of the functions.

- 1 Implement a **recursive** function **Indexer()** that takes as a parameter the root of a folder. The function should **returns** a text containing the full pathname of all the files encounters and their contents. Please note that your function must work as described on any directory structure, not just the one provided as an example. The line with the path add a newline character before and after it prints a path.

```

PATH : Test\file2.txt
I hope you like this assignment.
PATH : Test\file3.txt
Looking forward to Summer break!
PATH : Test\Test1\Test1-A\file1.txt
This is a test. Zoko assignment.
PATH : Test\Test1\Test1-B\Test1-B-B\file3.txt
Looking forward to Summer break!
PATH : Test\Test1\Test1-C\C3\file3.txt
Looking forward to Summer break!
PATH : Test\Test2\B\B1-1\B2-2\B\B\file2.txt
I hope you like this assignment.
PATH : Test\Test3\A\B\file1.txt
This is a test. Zoko assignment.
PATH : Test\Test3\A\B\file2.txt
I hope you like this assignment.
PATH : Test\Test3\A\file3.txt
Looking forward to Summer break!
PATH : Test\Test3\file1.txt
This is a test. Zoko assignment.

```

- 2 Implement a **recursive** function **findAllDirectoriesFiles()** that takes as parameters the name of a directory. The function should **return** a list containing the full pathname of all occurrences of directories that contains files (containing only directories doesn't count). Please note that your function must work as described on any directory structure, not just the one provided as an example. The following illustrates a sample set of directories located in the zip file containing the assignment template.

```

['Test\\Test1\\Test1-A', 'Test\\Test1\\Test1-B\\Test1-B-B', 'Test\\Test1\\Test1-C\\C3', 'Test\\Test2\\B\\B1-1\\B2-2\\B\\B', 'Test\\Test3\\A\\B', 'Test\\Test3\\A', 'Test\\Test3', 'Test']

```

3. Implement a **recursive** function `fileContentsLength ()` that takes as parameters the name of a folder. The function will return an integer representing the total length of all the files in the directory hierarchy. Please note that your function must work as described on any directory structure, not just the one provided as an example. You must use recursion to go through the subfolders. You may not use python crawlers or apis other than the ones used in the antivirus-redux example to find files in sub directories. Doing so will be an automatic 0 for this problem. You may use a for loop to loop through the contents of a folder. The following illustrates several searches using a sample set of folders and directories located in the zip file containing the exam template. You *don't* need to worry about punctuation, case or file error handling for this problem.

```
>>> fileContentsLength('Test')
320
```

4. Write a custom parser named `ListParser`. It will find any list element and print of the values to the screen. Note. You should remove any blank list items.

```
>>> testParser('http://zoko.cdm.depaul.edu/csc242/lists.html')
['Item 1', 'This is a nested list', 'This is a second item in the nested list',
'Item 2', 'Third item', 'Item A', 'Item B']
>>>
```

5. Write a HTMLParser that extracts all the news article titles from the Gamespot web site. The titles may appear slightly different from mine as they change daily. <https://www.gamespot.com/news/>

Here is an example of the html that the parser will be concerned with:

```
-----  
['Win Exclusive Access To The Beta For KartRider: Drift*', 'We're Giving Away 9  
Razer Headphones With Keyboard And Mouse Included*', 'All The PS5 Games Confirme  
d (And Expected) So Far', 'Every Canceled TV Show In 2020, Including The Purge,  
The Magicians, And More', 'Animal Crossing: New Horizons - Your Airport's Color  
Could Determine Other Item Colors', 'Warcraft: 47 Easter Eggs From The Orcs Vs.  
Humans Movie You Probably Forgot About', 'Call Of Duty: Modern Warfare--Here's W  
here You Recognize The New Hardhat Map From', 'PS Plus Games May 2020: Grab 3 Ga  
mes For Free Right Now', 'Call Of Duty: Warzone Bunkers Guide -- Locations And U  
nlocking', 'Netflix's Ozark Season 4: What We Want Next Season', 'Rainn Wilson T  
ells Office Super Fan Billie Eilish To Move On', 'Free Games Available On PS4, X  
box One, PC, And More This Week']
```

## Submitting the assignment

You must submit the assignment using the assignment 9 dropbox on [the D2L site](#). Submit a Python file (csc242hw9.py) with your implementation in it and comments describing your collaboration status. Submissions after the deadline listed above will be automatically rejected by the system. See the syllabus for the grading policy.

## Grading

The assignment is worth 100 points. Each question is worth 20 points. Any student who does not submit comments in the Python file describing the contributions of each team member or indicating that he/she worked alone will earn a 0 on the assignment.