Carleton
UNIVERSITY

COMP1405 (Fall 2017) – "Introduction to Computer Science I"

Quiz 2 of 2 **Practice Quiz**

This is a closed book exam. No calculators, cellphones, laptops, or other aids are permitted. Answer every question in the space that has been provided. You must show all your work without skipping steps; correct answers that are presented without justification may receive a mark of zero.

Student Name ____

Student Number ____

1. The ceiling of a floating-point number x is the smallest integer that exists that is still larger than or equal to x. Alternatively, the ceiling of a floating-point number x is what you get when you round x up to the nearest integer (e.g., the ceiling of 2.1 is 3, the ceiling of 0.9 is 1, etc.). Write a function to compute the ceiling of a number. This function must take one floating-point number as an argument and must have one integer return value. The only functions your solution may call are the `int` and/or `float` functions, and your solution must use the floor division operator (i.e., '//').

2. Write a function that takes a single list of characters as an argument and returns a new list of integers as a return value. The list returned must contain the ASCII codes of every uppercase character in the original list in the reverse order from the order they appeared in the original list. You are not permitted to use negative indexing but you may use the `ord` function. As a clarifying example, if your function was called with the argument ['H', 'e', 'l', 'L', 'o', 'W', 'o', 'r', 'l', 'D'] it must return the list [68, 87, 76, 72] (because the ASCII codes for 'D', 'W', 'L', 'H' are 68, 87, 76, 72, respectively).

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3. Write the exact output for the program below on the lines that have been provided below.

```
x = 3

def foo():

    x = 7
    print(x)
    return x


def bar():

    x = 5
    print(x)


def qux():

    global x
    x = 3
    print(x)


x = 9
print(x)
qux()
print(x)
x = foo()
print(x)
bar()
print(x)
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↑ write your output here ↑

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4. Write a function that takes a string argument that contains a sentence and returns a list of the words in that sentence that were written using at least one uppercase letter. You can assume that the sentence you received as an argument ends with either a '.', a '!', or a '?', but has no other punctuation. As a clarifying example, if your function was called with the argument "This is the First question on your Second quiz." it must return the list ['This', 'First', 'Second']. You may use any of the list or string processing functions you wish.

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5. Write a program that asks the user for one string (x) and exactly two integers (y and z) and then uses those values to create a two-dimensional list of integers (i.e., a list of lists of integers). You may assume that the string x contains a comma separated sequence of integers (e.g., 1,2,3,4,5) that ends in a blank space. The two-dimensional list you create must then be made up of y rows, where each row contains z elements and each element is a random even integer taken from the possible values listed in the string x. After you create the two-dimensional list you must print it out. Your solution must use nested loops and the `randint` function from the random library (but don't forget to import it). You may use any of the list or string processing functions you wish.