



NEW YORK UNIVERSITY

CSC-101 INTRO TO PROGRAMMING LANGUAGE

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Class Problem Set 2: Functions, Lists, Strings
March 24, 2024

Instructions

Unless stated otherwise assume you cannot access any additional materials or resources. You cannot use any IDE or programming environments such as VS Code. You may write your code using pen and paper, word processor such as MS Word, or plain text editor such as NotePad.

Functions, Lists, Strings

1. Write a program that takes a positive integer, n , from the user. Based on the integer, it creates a list $[1, 2, 3, \dots, n]$.
2. Write a program that takes a positive integer, n , from the user. Based on the integer, it creates a list, $[n, n - 1, \dots, 1]$.
3. Do question 1 and 2 but this time use list comprehension.
4. Write a **function** `listOfWords(sentence)` that takes a string as an input. Then the function should return a list containing all the words in the input string, **sentence**. For simplicity we assume that each word is separated by a single white space, and there are no leading or trailing white spaces. Nor is there any punctuation mark.
5. Write a **function** `isInOrder(list)`. The input, `list`, will be a list of integers. The function should return `True` if the list of integers is sorted in ascending order, `False`, otherwise.
6. Predict the output of the following program:
 1. `list1=[i for i in range(10)]`
 2. `list2=list1`
 3. `list2[-1]="What's happening here?"`
 4. `print(list1)`
 5. `print(list2)`You need to justify your answer.
7. Write a **function** `reverseString(inputString)`. The function accepts as an input a string and returns a reversed string. For example, `reverseString("Hello World!")` returns `!dlorW olleH`. To keep matters simple, each word in the given string will be separated by a white space with the exception of the last word, which will have a trailing white space.
8. Define a **function** called `countWords(inputString)`. The input, `inputString`, will be a string. Your function should count the number of words in the given `inputString` and return the number of words to the user. For sake of simplicity we assume each word will be separated by a single white space, and there are no leading white spaces and each string ends with a period a white space. For example, for `countWords("Hello world! ")`, the return value will be the integer, 2.