Columbia College
Vancouver, Canada

Introduction to Computer Science and Programming 1
CSCI120

Chapter8: List

Assignment 8

Note: This document has been designed and developed as part of an initiative for creating an OER (Open Education Resource) package for the course CSCI 120 at Columbia College.

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If it is a group assignment, please add the information here

# of Students in the Group:		
Student 1	*First name, last name*	*Student-ID*
Student 2	*First name, last name*	*Student-ID*
Student 3	*First name, last name*	*Student-ID*
Student 4	*First name, last name*	*Student-ID*

Requirements

- Please use meaningful name for your variables and functions
- Try to reuse your solutions as much as possible.
- For each of the following problem you need to
    - Define a function
    - For all test cases you have already written for your algorithm, write a function call inside the main function
- Define all the functions in one file (all in one)
- Define one main function
- Call the functions inside the main function
- If the function you have implemented for a question is big, please try to break down to multiple functions.
- Do not use methods, functions, statements that we have not covered in the previous lectures.
- Some hints are provided for each question. The hints are only some suggestions. You can come up with your own idea without using the suggested hint.

Problem1

- Implement a function which receives a list and returns True if the list is already sorted ascendingly and returns 0 if the list is not sorted ascendingly.

Problem2

- Write a function which receives a list and returns True if the list is “Partially sorted” and returns False if the list is not “Partially Sorted”. A list is “Partially sorted” if and only if there exists an item in the list which if removed, the list will become a sorted list. For instance the following list is “Partially sorted”:
- [1,2,5,10,6,8,9] This is partially sorted because it is not originally sorted but if we remove 10 from the list, then the list is sorted.

Problem3

- Write a function which takes no input parameter and allow the user to enter words as many as the user wants until the user enters an empty word. When the user enters a word, the function will add the word to a list which was originally empty. Before the function adds the word to the list, it should check whether the same word had been already added to the list or not. If not, then the word is added to the list and if yes, the word should not be added to the list. The function will eventually return the list of words.
    - *Note: Only use List to solve this problem*

Problem4

- Write a python function which receives 2 mathematical equations and adds these two equations and prints and retunes the result. The mathematical equations that are inputs of this function have the following format / specifications:
    - The maximum degree of the equation is 10.
    - The equation can have only 2 variables: X and Y.
    - The syntax of the equation is like: Example: X^4+ 5X^2 + Y^3+Y^2+1
    - Only use lists to solve this problem

Problem5

- Write a Python function which receives 2 lists as its input parameters and checks whether one of the list is included in another input list. A list A is considered to be included in List B, if all elements in A are elements in B.

Good Luck ☺