# Introduction to Computer Science and Programming 1

# CSCI120

### Chapter11: Recursion

Assignment 11

**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.

Please contact [Alireza.davoodi@gmail.com](mailto:Alireza.davoodi@gmail.com) for any comment, modification, and questions.

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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.

# Problem1

* Write a function which receives an integer (n) and calculate the total sum of 1 until n recursively. For instance function(5) = 5+4+3+2+1 = 15

# Problem2

* Define and implement a function that receive an integer and return the sum of all digits of the number. For instance, for number 3415 the function should return 3+4+1+5 = 13

# Problem3

* Define and implement a function that print the Fibonacci series for an input number n. The following image shows the Fibonacci function.

# A picture containing text, clock, watch, gauge Description automatically generated

# Problem4

* Define and implement a function which receives a list of integers and calculate the sum of all elements of the list recursively.

# Problem5

* Define and implement a function which receives a list of integers and find the maximum element of the list recursively.

**Good Luck ☺**