# Introduction to Computer Science and Programming 1

# CSCI120

### Chapter9: Tuples

Assignment

**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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| **# 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 Python function which receives a list of courses and grades a student has received in that course and return the average, highest and lowest grades of the student.

# Problem2

Write a Python function which receives a list of tuples. Each tuple has two components: 1- a string which is the name of a student and 2- an integer which is the age of the student. The function will convert the list of tuples to a dictionary without losing any information, meaning that we still should be able to find the age of any given student in the list.

# Problem3

* Write a Python function which receives two points in the 2D coordination system and returns True if the points are on a same line and returns False otherwise.

# Problem4

* We usually use list to collect and contains items with similar types (like integers). What data structure would you use to contain and collect items with different types.

**Good Luck ☺**