CSCI165 Computer Science II
Homework Assignment
Array Processing
Due Monday 2/17/2020 by 9:00 am

1. Read data from the file ***number_list.txt*** into a 1D array of type int. Write the following methods

    1. **public static void fillArray(int[] array)**
    2. **public static int findMax(int[] array)**
    3. **public static int findMin(int[] array)**
    4. **public static int[] percentChange(int[] array)** A list of percentage of change between adjacent items in ***array***. Index 0 will hold percent change from array[0] to array[1]; Index 1 will hold percent change from array[1] to array[2] . . . etc . . .

2. Read data from the file ***number_list.txt*** in **row-major order** to a 2D array of dimensions 50 x 20. Write the following methods

    1. **public static void fillArray(int[][] matrix)**
    2. **public static int findMax(int[][] matrix)** Maximum value in matrix
    3. **public static int findMin(int[][] matrix)** Minimum value in matrix
    4. **public static int findMaxOfRow(int[][] matrix, int row)**
    5. **public static int findMinOfRow(int[][] matrix, int row)**
    6. **public static int findMaxOfColumn(int[][] matrix, int column)**
    7. **public static int findMinOfColumn(int[][] matrix, int column)**

3. Read data from the file ***number_list.txt*** in **column-major order** to a 2D array of dimensions 50 x 20. Write the following method**s**

    1. **public static void printRow(int[][] matrix, int row, int num_cols)** print ***matrix[row]*** in ***num_cols*** columns
    2. **public static int smallestChange(int[][] matrix)** return index of row that experiences the smallest amount of change from element to element. Looking at adjacent cells

        1. **positive change:** values increase . . . ***array[i] > array[i + 1]***
        2. **negative change:** values decrease . . . ***array[i] < array[i + 1]***